

# MPM426WS

## Operation Manual



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

Thank you very much for selecting Micro Sensor's product, please take some time to read this operation manual very carefully before using the product.

## 1 Introduction

MPM426WS level and temperature transmitter with good performance as usual from Microsensor corporation is a full-sealed submersible piezoresistive level measurement instrument. With good performance as usual, special designed for oil and gas measurement. advanced manufacturing technology and automated production line ensure stable product quality, and good adaptation makes your device able to copy with various complex environments.

The transmitter is made by reliable piezoresistive OEM pressure sensor with good long-term stability and and PT1000 temperature sensor and high accurate special transmitter circuit assembled in a stainless housing. integrated structure and standardized output signals, provides convenience for field application and automatic control. The steel cap on the top of the transmitter protects the sensor diaphragm on the one hand, and smoothly allows the liquid to come into with the diaphragm on the other hand. The double-layer steel wire armored special cable used has better tensile resistance than the commonly used PVC gas-conducting cables. The wire cable is sealed to the housing, and the ventilation pipe is in the cable, which can be used for long-term use in liquids compatible with the transmitter structural material. After the special wire card is

locked, the cavity where the wire head is located is filled with high vacuum silicone grease (this silicone grease has good high and low temperature performance, low evaporation, excellent sealing; Resistant to water, mineral oil and most chemicals. The appliance is insulation good, compatible with most plastics and elastomers, and does not melt and flow out when used), so that the outlet end is in a completely sealed, insulated environment. In particular, the use of three seals, sealing lock line separated, but also to strengthen the product sealing reliability. MPM426WS level transmitter has good long-term stability, and no need to adjust outside. Protection level is IP68.

## 2 Specifications

Pressure range: 0mH<sub>2</sub>O~350mH<sub>2</sub>O...2000mH<sub>2</sub>O

Temperature range: -20℃...0℃~10℃...80℃

Overpressure: ≤ 2 times FS or 2200mH<sub>2</sub>O (minimum value is valid)

Pressure Type: Absolute , Sealed

Accuracy: ±0.5%FS (pressure); ±2℃ (temperature)

Zero Thermal Drift: ≤ ±0.02% FS/℃

Span Thermal Drift: ≤ ±0.05% FS/℃

Long-term Stability: ≤ ±0.2% FS/ year

Power supply: 12V~30V DC

Output signal: 4mA~20mA (pressure); 4mA~20mA (temperature); 3-wire

Load: <(U-12V)/0.02A

Long-term stability: ±0.2%FS/year

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

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

Application temperature:  $-20^{\circ}\text{C} \sim 80^{\circ}\text{C}$

Storage temperature:  $-40^{\circ}\text{C} \sim 100^{\circ}\text{C}$

Protection Rating: IP68

### 3 Outline Dimension and installation

#### 3.1 outline construction

unit:mm

Transmitter's outline Dimension is shown as fig 1:

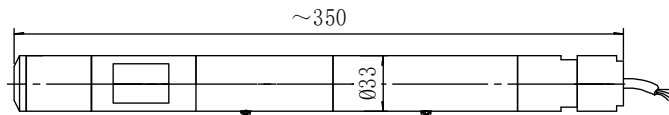


Fig.1

Cable length: connected by customers according to the range

#### 3.2 Check before Installation

Attention before transmitter installation:

- The static pressure produced by the liquid at installation place exceeds the transmitter FS or not.
- The measuring liquid is compatible with the transmitter construction material or not.
- The measuring liquid may stop up the holes on the protection cap or not.

### 3.3 Installation Methods

The transmitter should be installed vertically down.

In the flowing water, the acted surface should be parallel with the water flowing direction.

#### 3.3.1 Installation in the Static Water

The installation method in the static water see Fig. 6.

To prevent shaking or destroying the transmitter when pumping, the transmitter should be put away from the liquid resource. Otherwise it should be installed as Fig. 7, protected by steel tube.

The installation method in the deep well see Fig. 7.

Steel tube inserted method is usually used. The steel tube cannot be bent; the diameter of steel tube must be more than 30mm. Several holes should be made at different heights on the tube so as to easily raising and make water flow smoothly. If necessary, wrap steel wire around transmitter to prevent breaking the cable by lifting with the steel wire.

An aerial cable or the cable passing  
steel tube on the ground

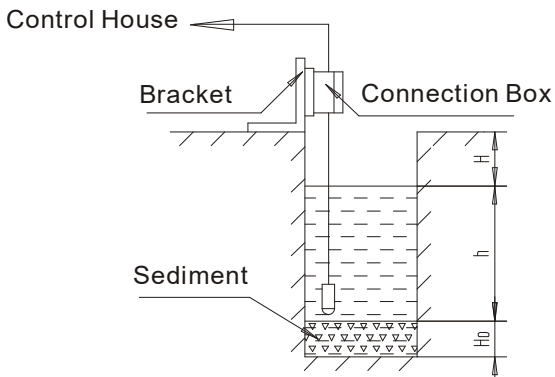


Fig.2

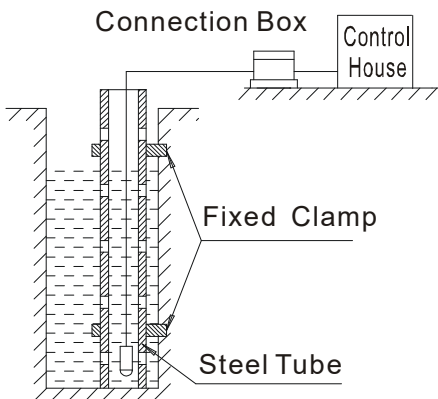


Fig.3

### 3.3.2 Installation in Flowing Water

The water-calming equipments are required.

Method one: Insert a steel tube in the water channel (see Fig. 8).

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

Method two: Superficial burying is better in the sand and stone channel. (see Fig.9).

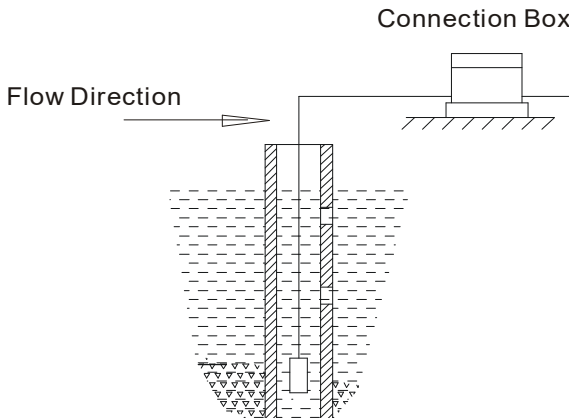


Fig.4



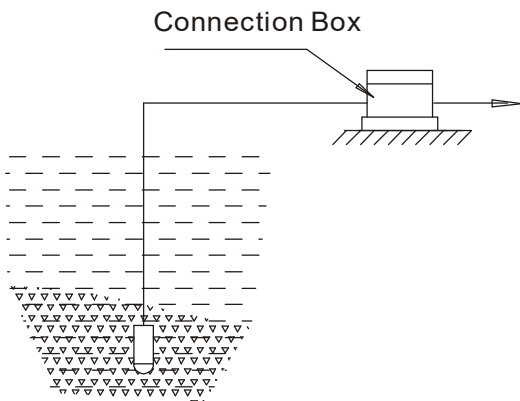


Fig.5

Method three: see Fig. 10.

This method can not only clear water flowing pressure and wave influence, but also filter the sand and mud.

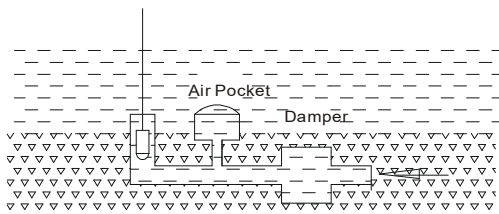


Fig.6

## 4 Electrical Connection

The electric definitions of cable are as follow:

pin	definition
Red	+V
Black	Pressure output
Blue	Temperature output

## 5 Unpacking、Enclosed and Storage

### 5.1 Unpacking

Attention:

- Check the package completed or not firstly, and the box should be put as the sign “up”.
- Avoid knocking violently when opening, and prevent injuring instruments or accessory. Please be carefully to prevent the housing and rubber casing of transmitter cable from damage.

### 5.2 Enclosed

The transmitter should be enclosed when out of factory:

MPM426WS Level Transmitter	1;
Special cable (connected to the transmitter)	due to the order
Production Manual	1 ;
Production Qualification Certificate	1 ;

### 5.3 Storage

The transmitter should be stored in dry ventilate room, ambient temperature  $-40^{\circ}\text{C}\sim 100^{\circ}\text{C}$  and the relative humidity $\leq 85\%$ , no corrosive

substance in the room.

## 6 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