

MPM426W

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 for your using products from MICROSENSOR. MPM426W Level Transmitter is one of precise instruments. In order to use the product better. We suggest you to read this manual carefully before use.

1 Introduction

MPM426W level transmitter is full-sealed submersible level measurement instrument. A high stable and dependable sensor is mounted with the transmitter special PCB in a stainless steel housing. The integration construction and the standard output signal support worksite operation and automatic controlling facilities. The stainless steel cap on the top of the transmitter protects the steel diaphragm of the transducer, yet allows the water free access to it. The waterproof cable sealed tightly to the housing. The reference tube is in the cable. The housing protection is IP68, and the transmitter is available for long-term submersible operation.

MPM426W level transmitter has advantages of small size, light weight and long-term stability; it can be applied to measure and control in field of petroleum, chemi-industry, medicine, metallurgy, power station, mine, city water supply, drainage and hydrology survey, etc.

MPM426W level transmitter has explosion proof type and non-explosion proof type based on different applications

MPM426W explosion proof level transmitter is intrinsic safe, conforming GB3836 standard Ex i aII C T6 Ga, Applicable to general explosive conditions, and by the National Explosion-proof Electrical Product Quality Supervision and Inspection Center to pass the examination, obtained the explosion-proof certificate. The selection of safety barriers

is detailed in the "Installation" section of this manual.

MPM426W level transmitter for Ship-use satisfy CCS"Specification for Classification of Steel Sea Vessels" (2018), and has passed the type recognition certificate of marine products by the Tianjin Branch of China Classification Society. MPM426W level transmitter satisfy relevant EU requirements, and CE approved

MPM426W level transmitter's protection level is IP68.

To be convenient for worksite local installation and observation, the connection box and indicator could be assembled according to customers' option.

2 Specifications

range: 0mH₂O~1mH₂O...200mH₂O

Overpressure: ≤2 times FS

Accuracy: ≤±0.25%FS ≤±0.5%FS ≤±1%FS

Note: the accuracy is related to the range, products with different range can reach different accuracy.

Long-term stability: Range> 10mH₂O, ≤ ±0.2% FS/ year

Range≤ 10mH₂O, ≤ 20mmH₂O/ year

Application temperature: -10℃~60℃ (Intrinsic safety)

-20℃~70℃ (cable material: PE, PVC)

-20℃~80℃ (cable material: PUR)

Storage temperature: -20℃~85℃

Power supply①: 15V~28V DC (intrinsic safe version supplied through safe barrier)

Output format: 2-wire

3-wire

3-wire

Output signal: 4mA~20mADC 0mA~10/20mADC 0/1V 5/10VDC

Load (Ω) : $<(U-15V)/0.02A$ $<(U-15V)/0.02A$ $>5k$

Protection Rating : IP68

3 Outline Construction and Installation

3.1 Outline Construction

Unit:mm

Transmitter Outline Construction:

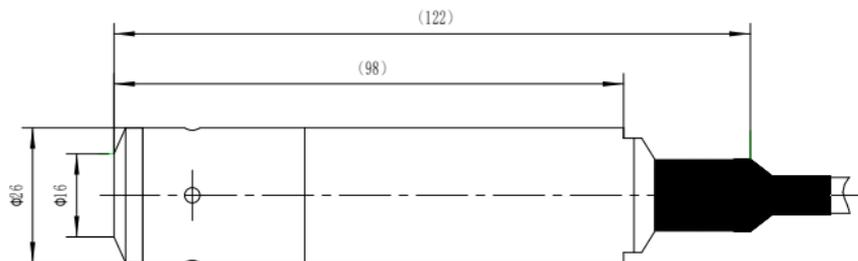


Fig. 1

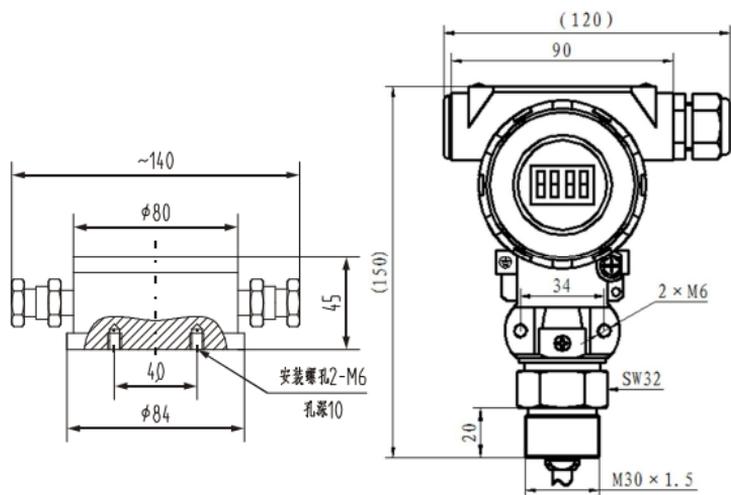
Cable length: according to customer needs, up to 500m

Connection box: MPM426W(Intrinsic safety type) must be

Connected to connection box, chosen by customers when ordering

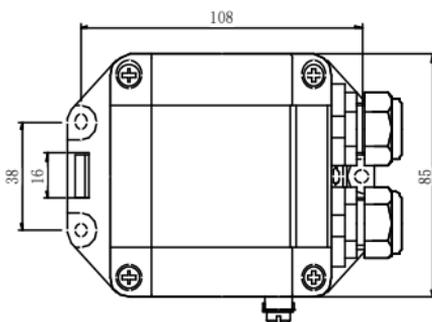
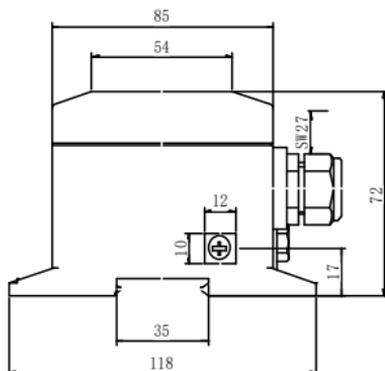
Whether connection box is needed for MPM426W needs to
specified when ordering

indicator: only for transmitter with 2-wire, 4mA~20mADC output and
connection box Ye, indicator could be provided according
to the options.



Connection box Yb

Connection box Ye



Connection box Yc

Fig.2

3.2 Pre-installation inspection

Before transmitter installation, you should pay attention to:

- a) Whether the static pressure that the liquid at the installation site

may produce exceeds the range of the transmitter.

- b) Whether the measured liquid is suitable for the structural material of the transmitter.
- c) Whether the measured liquid will block the inlet hole of the transmitter.

3.3 Precautions

- a) The transmitter should be installed vertically downwards. When used in moving water, care must be taken to make the sensing surface parallel to the direction of water flow.
- b) There is a plastic tube in the special cable of the transmitter, which is used to communicate the back pressure chamber of the gauge pressure sensor with the atmosphere. In the process of installation and use, care must be taken to ensure that the ventilation pipe communicates smoothly with the atmosphere, and foreign matter such as mud and sand must not be inserted and blocked by the ventilation pipe, nor can water and other liquids flow into the ventilation pipe, otherwise the transmitter will be damaged.
- C) When installing and using this product in areas where lightning often occurs, it is recommended to install lightning protection devices in the line.

4 Electrical Connection

- 4.1 The transmitter is connected with the outside circuit through plug or special cable.

Cable color	2-wire	3-wire
red	+V	+V
black	0V	GND
white	null	+OUT

4.1.1 Electrical connection method of transmitter with 2-wire 4mA~20mA DC output, to fig 3.

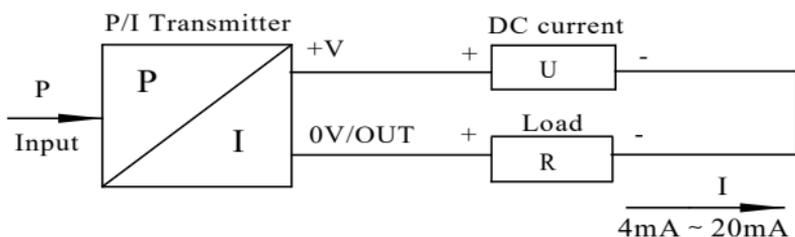


Fig 3

4.1.2 Electrical connection method of transmitter with 3-wire 0mA~10/20mA DC output, to fig 4.

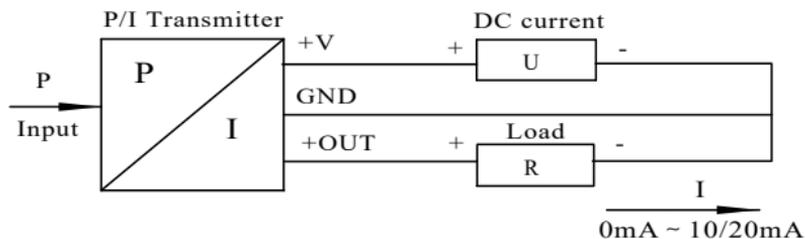


Fig 4

4.1.3 Electrical connection method of transmitter with 3-wire 0V~5/10V DC output, to fig 5.

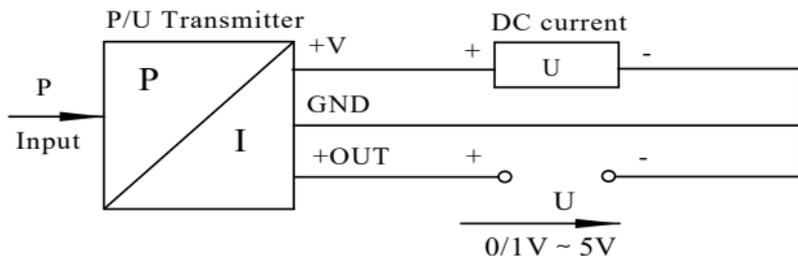


Fig 5

4.1.4 The Electrical Connection Method of Explosion Proof Version Transmitter

Intrinsically safe version explosion proof transmitters conform Standard GB3836.1 and GB3836.4, used for explosive condition. When electric is connecting, the transmitter and safe barrier should set up intrinsically safe explosion proof system.

The diffused inductance and capacity between the transmitter and safe barrier should be no more than 0mH and 0.044uF respectively. The safe barrier and excitation should be installed in safe area, and intrinsically safe version transmitter and connection box should be put in dangerous area, besides the transmitter connected to the earth safely. see fig 6

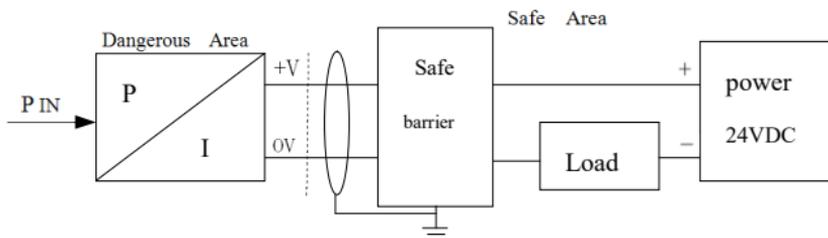


Fig 6

Transmitter ex-proof parameter : Safe barrier ex-proof parameter:

$U_i=28\text{VDC}$ $I_i=93\text{mA}$ $U_o=28\text{VDC}$ $I_o=93\text{mA}$

$L_i=0\text{mH}$ $C_i=0.01\mu\text{F}$ $P_o=0.65\text{W}$

$P_i=0.65\text{W}$

The maximum diffused capacities of cable between the transmitter and safe barrier is $C_p = C_o - C_i$, and diffused inductance is $L_c = L_o - L_i$.

4.1.5 The electrical connection method of transmitter with junction box

There is terminal block inside of the junction box. Terminals' definition are shown as fig 7.

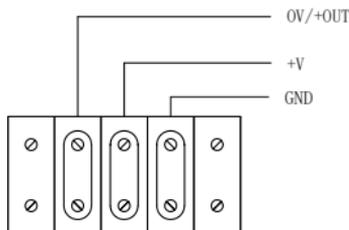


Fig 7

5 unpacking、enclosed and storage

5.1 unpacking

- a) Check the package completed or not firstly, and the box should be put as the sign “up”.
- b) 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

When out-factory, the transmitter includes:

MPM426W level transmitter	1
Transmitter special cable	the ordered length
Connection box (connected to cable)	due to the order
Indicator (installed inside connection box)	due to the order
Product Operation Manual	1
Product Quality Certificate	1

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. The material cost and the shuttle transportation fees should be borne by users.

www.microsensorcorp.com



MICRO SENSOR CO.,LTD.

ADD:No. 18 Ying Da Road, Baoji City, Shaanxi Province

Tel: +86-(0)917-3600739/909 400 860 0606

Fax:0917-3600755

E-mail:sales@microsensor.cn