

# MTM

## Operation Manual

V1.0



MICROSENSOR



The company reserves the right to modify this manual due to product technology and process updates. This manual is subject to change without notice.

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

Thank you very much for choosing the products of Micro Sensor CO., LTD. Please take some time to read this operation manual very carefully before using the product.

## 1 Introduction

MTM Series Temperature Transmitter can directly measure the temperature of various liquid, gas medium as well as solid surface. It uses special temperature module to make a linearity correction on temperature sensing element, outputting a standard analog signal and digital signal. This transmitter is easy to be used with adjusters, recording instruments or PC to form a temperature measurement system in many different fields including petroleum, chemical industry, metallurgy, power station and light industry, etc.

## 2 Specifications

- a) Power Supply: 10V~30V DC  
15V~30V DC (with indicator)
- b) Output: 4mA~20mADC, 4mA~20mADC+RS485, RS485,HART,
- c) Accuracy:  $\pm 1.0\%$ FS
- d) Insulation Resistance:  $\geq 20\text{M}\Omega @ 500\text{V DC}$
- e) Circuit Operation Temperature:  $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$
- f) Medium Temperature:  $-200^{\circ}\text{C} \sim 500^{\circ}\text{C}$
- g) Indicator Temperature:  $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$
- h) Protection: IP65

### 3 Outline Structure

#### 3.1 Construction Material

Housing: Aluminum Alloy

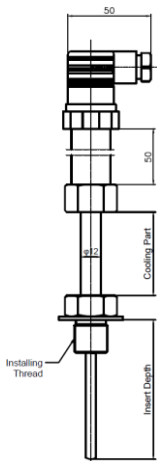
Wetted Part: Stainless Steel 304/316 or others

Sensing Element: PT100

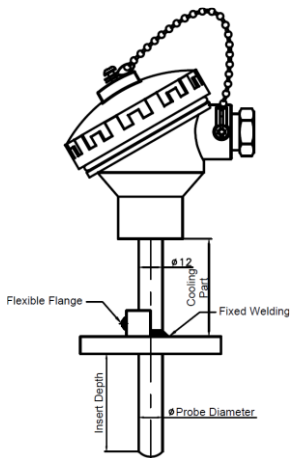
Display: Glass

#### 3.2 Outline Dimension(See Fig. 1)

Unit: mm



Hirschmann Plug Type



Water-proof Connection Box  
With Flange

Fig.1

## 4 Installation

### 4.1 Inspection before installation

- a) Please check the name plate of the transmitter. The measuring range in site should be suitable with the measuring range of transmitter ;
- b) Please check if the installation and thread are suitable with the condition in site.

### 4.2 Installation

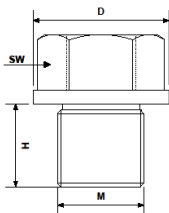
There are two ways of the temperature transmitter installation.

#### 4.2.1 Fixed Thread Installation.

The dimension of the fixed thread is as shown in Table.1; the product is fixed by the thread at the wetted part. There are three types of thread for option. The drawing of the thread for fixing thread installation is as Fig.2.

M	H	SW	D
M20×1.5	18	27	Φ32
M27×2	32	32	Φ38
G1/2	20	27	Φ32

**Table.1**



**Fig. 2**

#### 4.2.2 Fixed Sleeve Installation

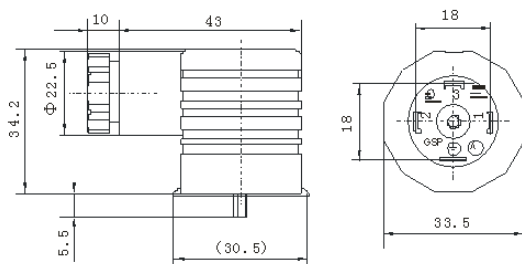
A sleeve is needed to be installed at the wetted part, one side should be connected to the thread of product, the other side is with an internal hexagon for fixed installation. The fixed sleeve installation also strengthens the solidity of the wetted part.

**Note 1:** The installation direction of the temperature transmitter should be any direction, and the temperature measuring end of the temperature transmitter must be fully in contact with the measuring medium to ensure the insertion depth of the outer protection tube. When measuring the pressure of the pipeline, please pay attention to the sealing part of the installation connection.

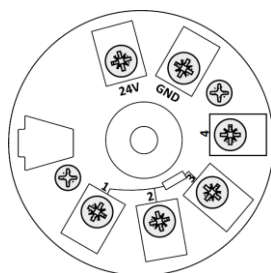
**Note 2:** When installing, please use a wrench or other tools to tighten the nuts. Do not twist the junction box and meter head by hand to prevent the internal wiring of the transmitter from being broken.

### 4.3 Electrical Connection

PIN	Electrical Definition
1	+V
2	+OUT
3	Null



**Hirschmann Plug Type**



**Water-proof Connection Box**

## 5 Unpacking, Enclosed Shipment

### 5.1 Unpacking

a) Check whether the package box is in good condition and set it down according to the “Upward” sign.

b) Do not unpack it by force to avoid damaging products.

### 5.2 Enclosed Shipment

Shipment includes:

MTM Series Temperature Transmitter	1pc
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Operation Manual	1pc
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Certificate of Compliance	1pc
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## 6 Operation, Maintaining and Storage

### 6.1 Operation

Before the operation, users do not need to adjust the transmitter, but please make sure that the installation, electrical connection should be double-checked. Power up the transmitter and the product will be ready for operation, but the output signal will be more stable and reliable after 30mins' warm-up.

### 6.2 Maintaining



It is normally not allowed for user to adjust the temperature transmitter in site, the transmitter is maintenance-free. If there is any problem, please check the installation and the electrical connection first. If the problem is not solved, please contact our technical service center.

### 6.3 Storage

The product should be stored in dry and airy room, ambient temperature at  $-40^{\circ}\text{C}\sim 80^{\circ}\text{C}$  and the relative humidity $\leq 80\%$ , no corrosive substance in the air.

## 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 will repair the products. The material cost and the freight should be borne by users.



[www.microsensorcorp.com](http://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](mailto:sales@microsensor.cn)