



# Operation Manual

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Shannzhi NO. :03000112

## MDM491 PIEZORESISTIVE DIFFERENTIAL PRESSURE TRANSMITTER



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**MICRO SENSOR CO.,LTD.**

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Our company keeps the product technology and craftwork's modification rights. If the information were changed, no more notice will be edited. Please pay attention to the latest introduction.

Version:V15.1.1

## 1 Brief Introduction

MDM491 Piezoresistive Differential Pressure Transmitter is a differential pressure measurement device with a compact size and full-welded pressure ports. The transmitter uses a differential pressure sensor and special amplified circuit, tested by stability and reliability experiments. And with zero and span compensation in the wide temperature range, it could output standard 2-wire 4~20mA DC and 3-wire 0V/1V~5/10VDC signal. The part contacting with the media uses stainless steel material. This product could be used for differential pressure measurement of various gases and liquids in pipeline in fields including petroleum, chemical engineer, electric power and hydrology, etc.

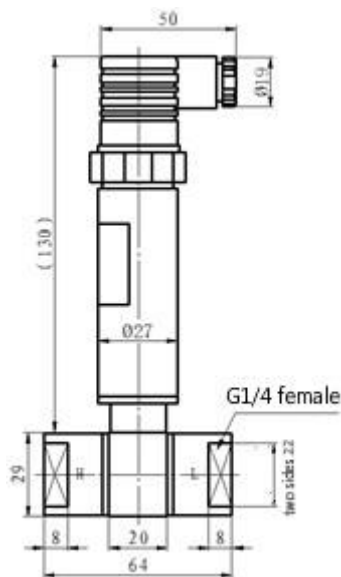
The protection is IP65.

The product is manufactured in conformity to License for Manufacturing Measurement Instrument Shaanzhi No. 03000112 of P. R. China.

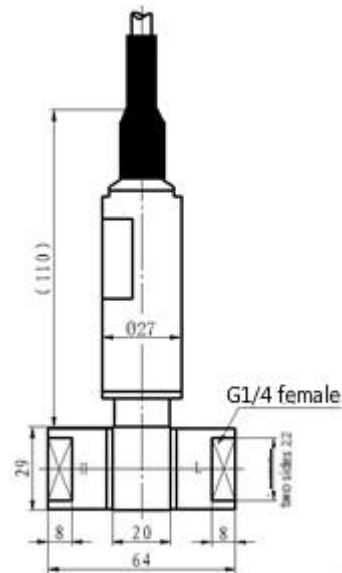
## 2 Outline Construction

The construction and dimensions is showed below:

unit:mm



Plug Connection



Cable Connection

## 3 Specification

Power Supply: 15V~28V DC

Output Signal: 4mA~20mA DC (2-wire)

0V/1V~5V/10 V DC, 0mA~10mA/20 mA DC(3-wire)

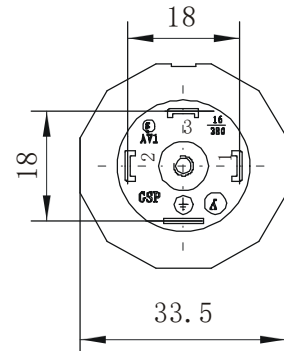
Operation Temp.: -10°C~80°C

Accuracy:  $\leq \pm 0.5\%FS$  (Typ.)  $\pm 1\%FS$ (Max.)

### 4 Electric Connection

Plug Connection:

Pin	2-wire	3-wire
1	+V	+V
2	0V/+OUT	GND
3	Null	+OUT

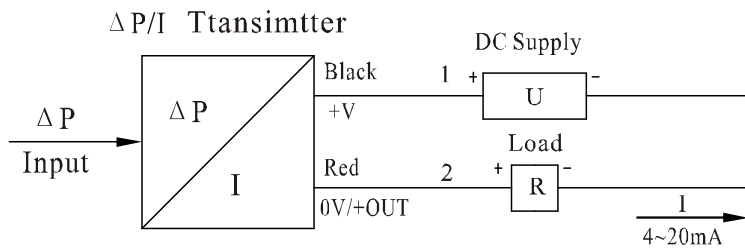


Cable Connection:

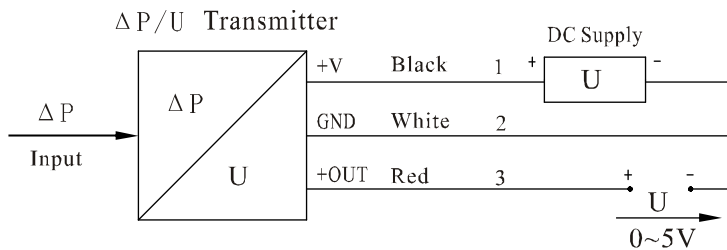
Wire Color	2-wire	3-wire
Black	+V	+V
Red	0V/+OUT	+OUT
White	Null	GND

Electrical connection is showed below:

2-wire 4mA~20mA DC output:



3-wire 0V/1V~5V/10V DC output:



### 5 Enclosed

When out-factory, the transmitter should include:

MDM491 Differential Transmitter	1
Electrical connection plug (insert supplied)	1(based on order)
Cable (cable supplied)	1.5 meter or based on order
Product operation manual	1
Product quality certificate	1

## 6 Operation Attentions

Attentions before installation:

a. The pressure of measured media should not higher than the static pressure of transmitter;

b. The differential pressure of measured media should not exceed the upper limit of pressure.

c. To reach a balance between positive and negative pressure and easy for repair, we recommend to use tri-valve to connect the pressure-leading tube in case that one-side overpressure destroys the transmitter. Or you can buy a matching pressure-leading tube and tri-valve from our factory. The installation method could refer to the right chart.

d. To avoid the affect on the zero output of the transmitter caused by the installation position, you can install the transmitter horizontally on the pipeline and the plug could be in vertical direction.

e. Attention that the measured media should be compatible with the construction materials.

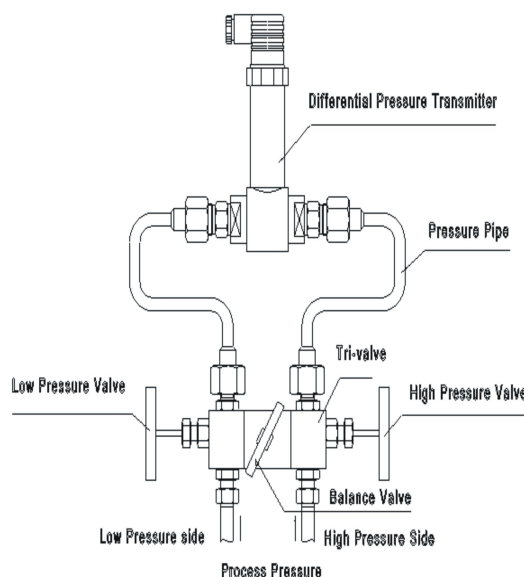
f. Notice that the positive(“ + ”) and negative (“ - ”) sign on the transmitter should be in accordance with the actual measured pressure.

g. The transmitter should be installed in a low temperature gradient and low temperature fluctuation environment; to avoid impact and shock.

h. The protection of transmitter is IP65.

i. To prevent the measurement error caused by leaking, friction and temperature difference; to prevent dregs settling on the tube to affect the diaphragm.

j. The transmitter has been calibrated when out of the factory. You can operate the transmitter directly without calibration. But please check whether the installation and electrical connection are correct when in use. The transmitter can work when powered on, but the signal output is more reliable after 30 minutes.



k. Strictly prohibit to drag the cable violently or poke the pressure-leading hole with hard substances in case that the diaphragm is broken or out of shape to damage the transmitter.

MDM491 differential pressure transmitter allows users to adjust the zero and span output signals with a standard pressure source. While adjusting (plug connection version), remove the socket on the top of housing (take care not to break the wire), then trim “Zero” and “Span” buttons to adjust. For cable connection version, use a wrench to screw the cap slightly and two potentiometers-zero and span are showed on the circuit board. Restore them after adjustment.

MDM491 differential pressure transmitter has no movable mechanical parts and almost has no need of repair. The transmitter should not be repaired in field when breaking up. The users should identify and record the causes of damage and contact with the seller, returning it to our factory for repair or exchange.

## 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 born by users.



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