

# Highly Precise Digital Output Intelligent Pressure Transmitter

## MPM4730



### Applications

- Hydrological water resources
- Petroleum and petrochemical industry
- Electricity industry
- Mechanical engineering
- Hydraulic and pneumatic control

### Features

- Digital temperature compensation and non-linearity correction
- RS485 interface (customized protocol) or HART® protocol
- Support network application
- Intrinsic safety type, Ex ia IIB T6 Ga
- CE, RoHS and CCS approved

### Introduction

MPM4730 pressure transmitter is the highly accurate and stable intelligent pressure transmitter. It uses digital temperature compensation, non-linearity correction technics and the most advanced transmitter production technique, the whole product has compact size, high accuracy, light weight and wider pressure range, can be used for flow pressure precise measurement. The product will instead the 2-wire working 4mA~20mA DC output analogous signal.

### Specifications

Range	-1bar...0mbar ~ 100mbar...1000bar
Overpressure	≤ 2 times FS or 110MPa (minimum value is valid)
Pressure Type	gauge, absolute, sealed gauge
Accuracy	see Accuracy on page 2
Long-term Stability	±0.2%FS/year
Compersated	-10°C ~ 70°C
Application Temperature	-30°C ~ 80°C (B1 type, B3 type)
	-20°C ~ 70°C (B2 type, cable material: PE, PVC)
	-20°C ~ 80°C (B2 type, cable material: PUR)
Storage Temperature	-20°C ~ 60°C (intrinsic safety type)
	-40°C ~ 85°C
	-20°C ~ 85°C (B2 type)
Vibration	20g, 20Hz ~ 5000Hz
Shock	20g, 11ms
Protection Rating	IP65
Weight	≤230g

## Accuracy

Pressure Type	Range	Accuracy
Gauge (G)	0mbar ~ 100mbar < X < 200mbar	±0.5%FS
	200mbar ≤ X ≤ 700mbar	±0.25%FS
	700mbar < X ≤ 35bar	±0.25%FS
	-1bar ~ -350mbar < X ≤ 2bar	±0.1%FS
	-1bar ~ -350mbar < X < 2bar ~ 35bar	±0.5%FS
Absolute (A)	0mbar ~ 700mbar < X ≤ 1bar	±0.5%FS
	1bar < X ≤ 10bar	±0.25%FS
	10bar < X ≤ 1000bar	±0.25%FS ±0.1%FS
Sealed gauge (S)	35bar < X ≤ 1000bar	±0.25%FS
		±0.1%FS

Note: the accuracy is between compensated temperature range (-10°C ~ 70°C), HART output products can not reach 0.1% accuracy;  
 Test standard: GB/T 17614.1-2015/IEC60770-1:2010

## Output Signals

Output Signal	Power Supply	Output Format	Load Resistance
4mA~20mA DC (E)	10V~28V DC	2-wire	≤(U-10)/0.02 (Ω)
RS485, ASCII protocol (R4) RS485, MODBUS_RTU protocol (R8)		4-wire	RS485 bus can load 99 transmitters
HART® protocol (H, non-explosion-proof type)	12V~30V DC	2-wire	≤(U-12)/0.02 (Ω)



Note: Intrinsic safety type product is powered by safety barriers, power supply is 10V~12V DC.

## Outline Dimensions

unit: mm

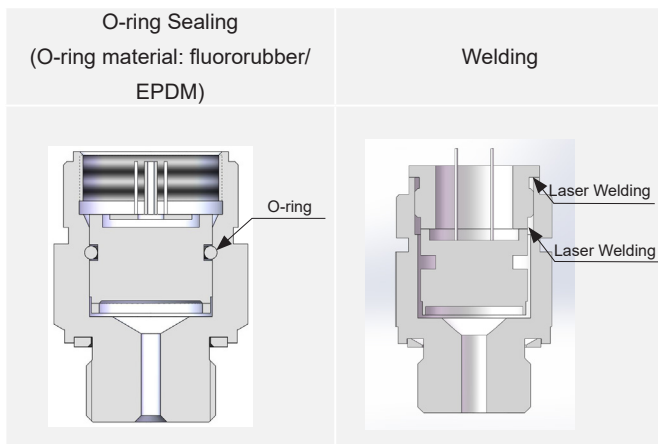
Hirschmann 4-pin Plug Connector(B1)	Cable Type (B2)	7-pin Plug Connector (B3)

## Electrical Connection

Definition	Hirschmann 4-pin Plug Connector (B1)		Cable (B2)		7-pin Plug Connector (B3)	
	current 2-wire	RS485 4-wire	current 2-wire	RS485 4-wire	current 2-wire	RS485 4-wire
+V	1	1	red	red	1	1
+OUT	2	2	black	black	2	2
EARTH (explosion-proof)		-	blue	blue	7	7
RS485A	-	3	-	yellow/green	-	4
RS485B	-		-	white	-	5

Note: current output is available only for explosion-proof products with B1 electrical connection

## Sensor Sealing



## Materials

### Wetted Parts

Isolated Diaphragm: SS 316L/Tantalum  
 Pressure Port: SS 304/SS 316L/Hastelloy C

### Non-wetted Parts

Housing: SS 304/SS 316L  
 Cable: PE/PUR/PVC

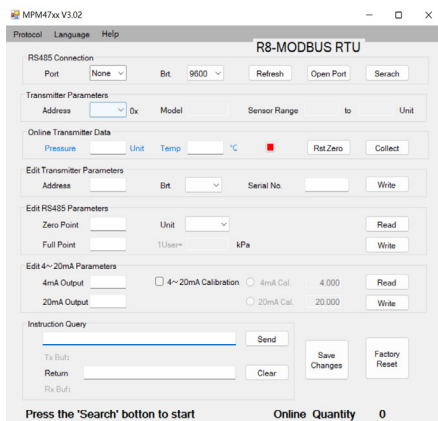
## Software

RS485 transmitter software

47xx software

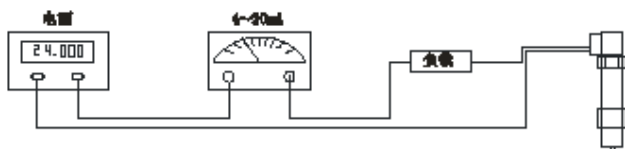
Through RS232/485 transfer module, basic information about RS485 interface transmitter can be read including level range, temperature compensation range, version etc. Display actual level value, setting new zero, analog output, address.

Note: 47xx software can be downloaded from our company website [www.microsensorcorp.com](http://www.microsensorcorp.com)

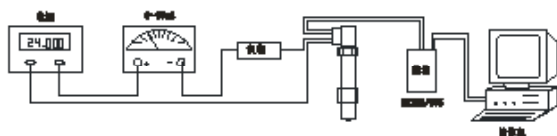


## Application Examples

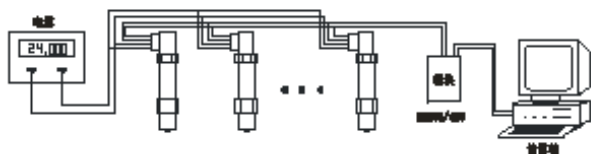
diagram of 2-wire transmitter pressure measurement



wiring diagram of computer field tuning



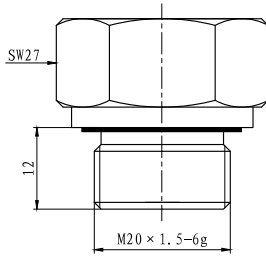
wiring diagram of RS485 interface network application



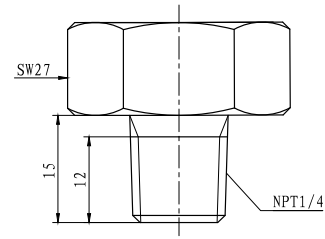
Process Connection

unit: mm

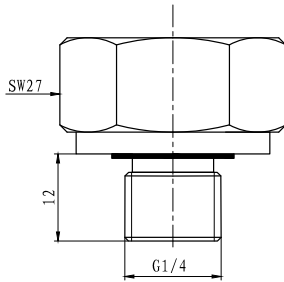
M20×1.5 male, end face seal (C1)



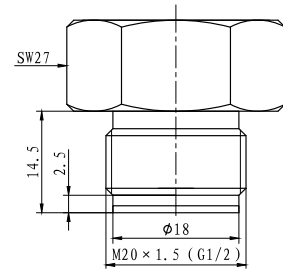
NPT1/4 male(C6)



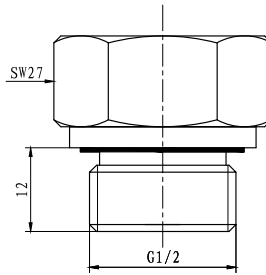
G1/4 male, end face seal (C2)



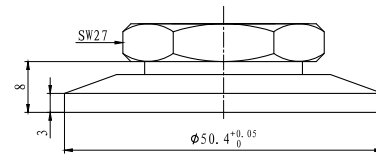
M20×1.5 or G1/2 Flush Structure (PC1/PC3)



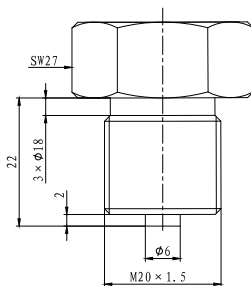
G1/2 male, end face seal (C3)



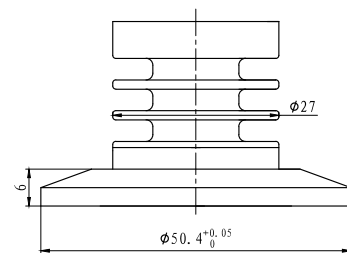
DN25 clamp(PD1)



M20×1.5 male, waterline seal (C5)



DN25 clamp with heat sink (PD1s)



## Ordering Guide

### MPM4730 Intelligent Pressure Transmitter

Range	Measurement Range -1bar...0mbar ~ 100mbar...1000bar		
[0 ~ X]mbar or barL	X: actual measured range, L means cable length when electrical connection is B2		
Code	Output Signal		
E	4mA~20mA DC		
R4	RS485 communication interface, customized ASCII protocol		
R8	RS485 communication interface, MODBUS_RTU protocol		
H	HART® protocol (for non-explosion-proof type)		
	Material		
Code	Isolated Diaphragm	Pressure Port	Housing
22	SS 316L	SS 304	SS 304
24	SS 316L	SS 316L	SS 316L
25	Tantalum	SS 304	SS 304
35	Tantalum	Hastelloy C	SS 304
Code	Electrical Connection <sup>①</sup>		
B1	4-pin Plug Connector		
B2	Cable Connection		
B3	7-pin Plug Connector		
Code	Process Connection		
C1	M20×1.5 male, end face seal		
C2	G1/4 male, end face seal		
C3	G1/2 male, end face seal		
C5	M20×1.5 male, waterling seal		
C6	NPT1/4 male		
PC1	M20×1.5 flush structure	0mbar ~ 200mbar...350bar	
PC3	G1/2 flush structure		
PD1	DN25 clamp	0mbar ~ 350mbar...350bar	
PD1s	DN25 clamp with heat sink		
Code	Accessory		
null	no Accessory		
M6	4 digits LED digital indicator (4mA ~ 20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)		
M7	4 digits LCD digital indicator (4mA ~ 20mA DC output non-explosion proof or non-ship-use products with B1 electrical connection)		
Code	Certification Requirement <sup>②</sup>		
null	no certification requirement		
i	intrinsic safe Ex ia IIC T6 Ga		
T	ship-use		
Code	Pressure Type		
G	gauge		
A	absolute		
S	sealed gauge		

MPM4730 [0 ~ 16]bar E 22 B1 C2 M6 i G Complete Type Specification

## Ordering Guide

1. "①", when electrical connection is B1 or B3, please specify us if cable is needed.
2. "②", refers to certification requirements. For the intrinsically safety type, current output is available only. The product can be intrinsically safe and suitable for ship-use simultaneously or can be flameproof and suitable for ship-use simultaneously.
3. The application temperature range of fluororubber O-ring sealing is  $-20^{\circ}\text{C} \sim 250^{\circ}\text{C}$ , when application temperature  $< -20^{\circ}\text{C}$ , EPDM O-ring is needed.
4. The cable length is 1.5m by default, cable material is available for 3 types: PE cable is provided as default; if other material is needed, please specify in the order.
5. When ordering the transmitter with M6 or M7 indicator, power supply should  $\geq 20\text{V DC}$ .
6. Environmental temperature should be  $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$  when ordering the transmitter with M6 indicator, environmental temperature should be  $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$  when ordering the transmitter with M7 indicator, indicator setting can refer to our indicator lectotype, which can be found on our company's website.
7. If metrology verification certificate is needed or there are other requirements, please contact us and specify it in the order.