WTP01 Pressure Sensor

Features

- With constant current and constant voltage excitation options
- Imported highly reliable pressure die
- Wide temperature compensation
- Compensation board filled with glue for protection against moisture
- A variety of pressure port options available
- High performance, all solid, high reliability
- 18 months warranty period

Applications

- Process control systems
- Pressure calibration instruments
- Refrigeration equipment and HVAC control
- Hydraulic systems and valves
- Level measurement
- Biomedical instruments
- Ships and navigation
- Aircraft and avionics systems
- Weaponry

Notes:

1 Do not touch the diaphragm with hard objects, which may cause damage to the diaphragm.

2 Please read the Instruction Manual of the product carefully before installation and check the relevant information of the product.

3 Strictly follow the wiring method for wiring; otherwise it may cause product damage or other potential faults.

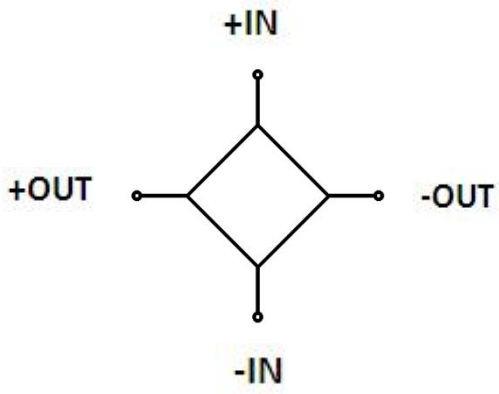
4 Misuse of the product may cause danger or personal injury.

Product overview

WTP01 pressure sensor packages a PC10 pressure sensor in a workpiece with a standard pressure port. It is widely used in the process control and measurement of petroleum, chemical, metallurgy, aviation, aerospace, marine, medical equipment, vehicles, refrigerators, compressors and other industries.

Equivalent circuit

4 wire



Notes:

1 Do not misuse documentation.

2 The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.

3 Complete installation, operation, and maintenance information is provided in the instructions of the product.

4 Misuse of the product may cause danger or personal injury.

Electrical performance parameters	
Pressure range	0～10kPa…100MPa
Pressure reference	Gauge pressure, Absolute pressure, Sealed gauge pressure
Excitation	1.5mA recommended for constant current 10V recommended for constant voltage
Input impedance	Constant current: 2kΩ～5kΩ Constant voltage: 3kΩ～18kΩ
Electrical connection	silicon soft wire
Compensation temp.	0℃～60℃（Range＜70kPa）; -10℃～70℃（other ranges）
Operating temp.	-40℃～120℃
Storage temp.	-40℃～120℃
Insulation resistance	≥200MΩ/250VDC
Response time	≤1ms (up to 90%FS)
Measured medium	All the liquids and gases compatible with 304.
Mechanical vibration	20g（20～5000HZ）
Shock	100g（10ms）
Service life	1.0×10^6(cycles)

Structural performance parameters	
Diaphragm material	316L
Housing material	304
Oil filling	Silicon oil

Basic parameters						
Item	**Condition**	**Min**	**Typical**	**Max**	**Unit**	**Note**
Nonlinearity	Other ranges	-0.3	±0.2	0.3	%FS	Note(1)
	100MPa	-0.55		0.55	%FS	Note(1)
Hysteresis		-0.05	±0.03	0.05	%FS	
Repeatability		-0.05	±0.03	0.05	%FS	
Zero output		-2	±1	2	mV	
Full scale span output	1.5mA, 10kPa 1.5mA, other ranges 5V, 10kPa 5V, other ranges	30 60 60 98	90 100	150 102	mV	
Zero temp. coefficient	10kPa other ranges	-2.5 -1.5	±1.5 ±0.75	2.5 1.5	%FS	Note(2)
Sensitivity temp. coefficient		-1.5	±0.75	1.5	%FS	Note(2)
Thermal hysteresis		-0.075	±0.05	0.075	%FS	Note(3)
Long term stability		-0.3	±0.2	0.3	%FS/ Year	

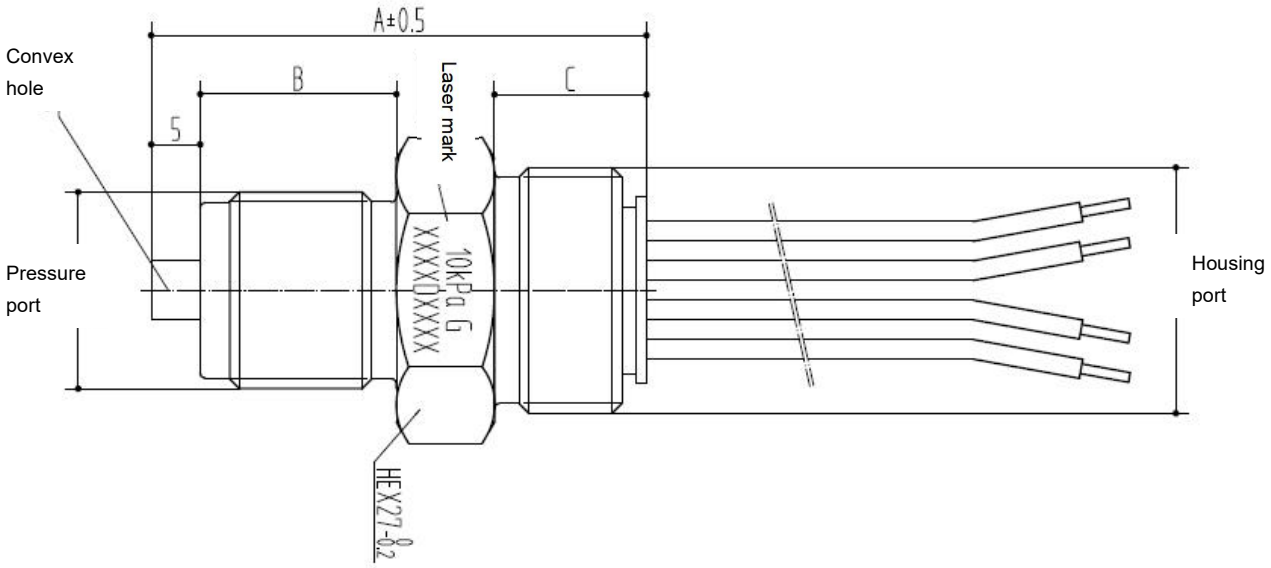
Note: (1) Calculate according to BFSL least square method.

(2) In the compensation temperature range, refer to 30 ℃ for 0 ℃ ~ 60 and -10 ℃ ~ 70 ℃

(3) After passing high and low temperature, return to the reference temperature.

Structure and dimensions

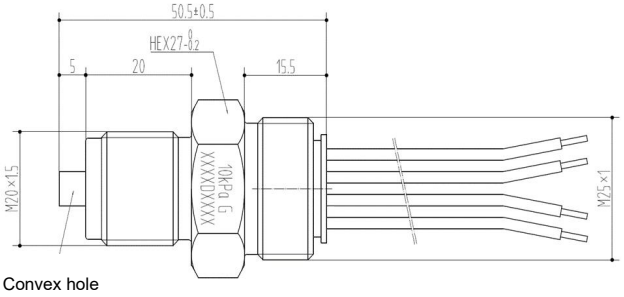
Unit mm



Pressure port	Housing port	A	B	C	D
M20×1.5	M24×1.5	43.5	20	13.5	Without
M20×1.5	M25×1	43.5	20	13.5	Without
G1/2	M24×1.5	43.5	20	13.5	Without
G1/2	M25×1	43.5	20	13.5	Without
G1/2	M24×1	33	15	8	Without
1/4NPT	M25×1	32.4	14.4	8	Without
G1/4	M22×1	35.5	12.5	13	Without
M20×1.5	M24×1.5	48.5	20	13.5	With
M20×1.5	M25×1	48.5	20	13.5	With
M20×1.5	M24×1	48.5	20	13.5	With
G1/4	M22×1	38	12.5	15.5	Without
M20×1.5	M24×1.5	50.5	20	15.5	With
M20×1.5	M25×1	50.5	20	15.5	With
M20×1.5	M24×1	50.5	20	15.5	With

Electrical connection (in mm)

4 wire



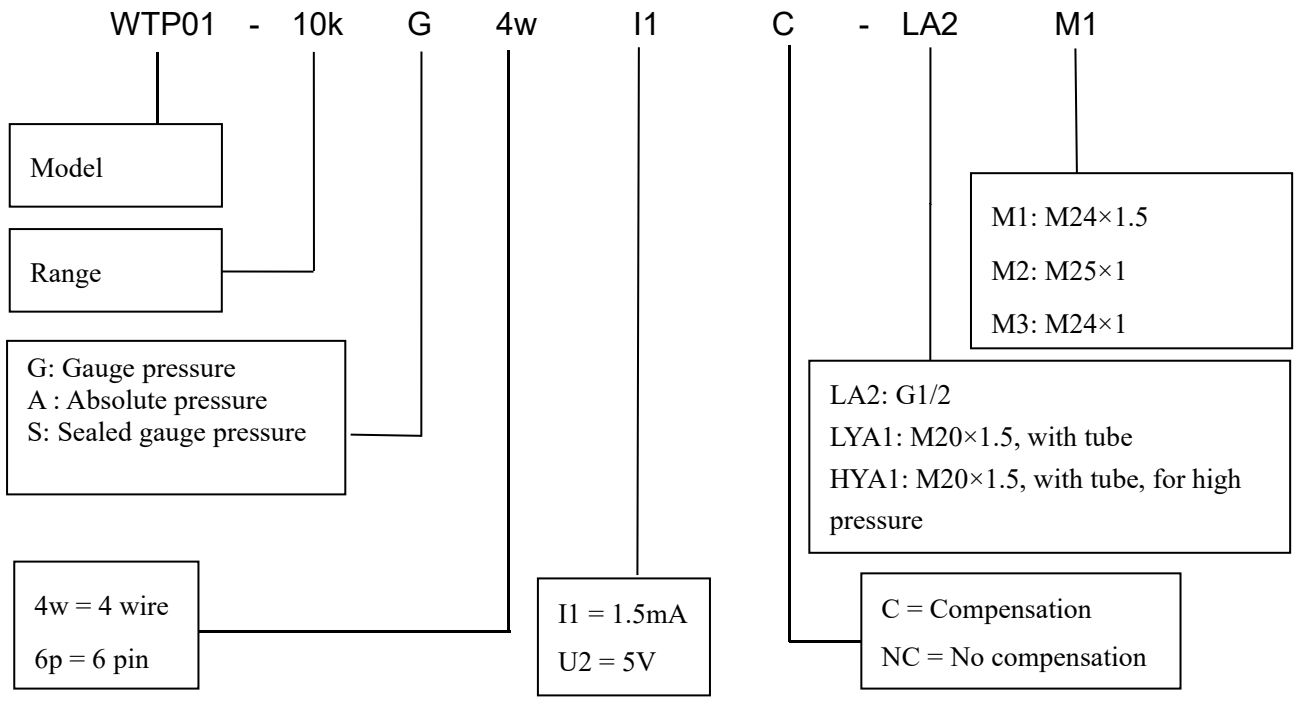
Wire color	Definition
Red	Excitation+(IN+)
Blue	Excitation-(IN-)
Yellow	Output+(OUT+)
White	Output-(OUT-)

Pressure range selection

Code	Pressure reference	Pressure range	Overpressure	Burst pressure
10k	G	0～10kPa	300%FS	600%FS
20k	G	0～20kPa	300%FS	600%FS
35k	G、A	0～35kPa	300%FS	600%FS
70k	G、A	0～70kPa	300%FS	600%FS
100k	G、A	0～100kPa	200%FS	500%FS
160k	G、A	0～160kPa	200%FS	500%FS
250k	G、A	0～250kPa	200%FS	500%FS
400k	G、A	0～400kPa	200%FS	500%FS
600k	G、A	0～600kPa	200%FS	500%FS
1M	G、A、S	0～1MPa	200%FS	500%FS
1.6M	G、A、S	0～1.6MPa	200%FS	500%FS
2.5M	G、A、S	0～2.5MPa	200%FS	500%FS
4M	G、S	0～4MPa	200%FS	400%FS
6M	S	0～6MPa	200%FS	400%FS
10M	S	0～10MPa	200%FS	400%FS
16M	S	0～16MPa	200%FS	400%FS
25M	S	0～25MPa	150%FS	400%FS
40M	S	0～40MPa	150%FS	300%FS
60M	S	0～60MPa	150%FS	300%FS
100M	S	0～100MPa	150%FS	300%FS

Note: G: Gauge pressure, A: Absolute pressure, S: Sealed gauge pressure

How to order



Example: WTP01-10kG4wI1C1-LA2M1

WTP01 pressure sensor, pressure range: 10kPa, gauge pressure, 4 wire, 1.5mA excitation, with temperature compensation, pressure port G1/2, housing port M24×1.5.

Ordering tips:

1 Pressure range can be selected higher or lower than actual conditions but should be within ±30%FS.

2 Pressure reference consists of gauge pressure, absolute pressure and sealed gauge pressure.

(1) Gauge pressure is based on the current atmospheric pressure. Generally, it refers to the measurement of pressure which is greater than the current atmospheric pressure. Negative pressure is a special case of gauge pressure. It refers that there is such working condition that the pressure of work site is lower than the current atmospheric pressure.

(2) Absolute pressure is based on vacuum.

(3) As for sealed gauge pressure, PC11 uses absolute pressure die for gauge pressure product based on the atmospheric pressure of production site. For pressure range above 6MPa, gauge pressure cannot be selected, but only sealed gauge pressure.

3 Confirm the maximum overload of the applied system, which should be less than the overload protection limit of the sensor, otherwise it will affect the product life or even damage the product.

4 The commonly used compensation of the product is 1.5mA constant current compensation. Suggest selecting this option with priority.

5 The material and process for manufacturing negative pressure sensors are different from those of positive pressure sensors. So gauge pressure sensors cannot be used as substitute of negative pressure sensors.

6 For special requirements on performance parameters and functions of the product, please contact us.

Wotian reserves the right to make any change in this publication without notice. The information provided is believed to be accurate and reliable as of this product sheet.

Контакт:

Nanjing Wotian Technology Co., Ltd.

Веб-сайт: ru.wtsensor.com

Адрес: 5 Wenying Road, Binjiang Development Zone, Nanjing, 211161, China

Электронная почта: wtsensor@wtsensor.com

Телефон: +86-18640205486

Менеджер по продажам: Эмма