



Measurement & Calibration Catalog



Cal in lab and on site

Pressure calibration

Process control

Shaanxi Creat Wit Technology Co., Ltd

陕西创威科技有限公司

www.creatwit.com



Company Brief Introduction

History

Shaanxi Creat Wit Technology Co., Ltd. (CW) is high-tech enterprise in Shaanxi province, in July, 2006. It is mainly engaged in developing, manufacturing and selling the calibration equipment, such as dead weight tester, pressure gauges, calibrators, sensors and transmitters.

Quality Assurance

"Creat Wit" is a well-known brand in the field of pressure and temperature measurement and calibration in China. It is the first manufacturing enterprise in this field to be certified by the new version ISO9001/2008.

Achievement

Since establishment, we have been committed to the development of wide range, various accuracy level of the pressure, thermal testing equipment.

At present, our pressure test equipment can be applied to test quality, Metrology testing for all kinds of products (below 1000 MPa, 10000bar), including pressure gauge, pressure sensor, pressure transmitter, pressure controller and gas pressure reducer accurately.

Applications

Measurement and calibration manufacturing factories such as metallurgy, petroleum, chemical, electric power, railway, military industries and calibration laboratories.

Services

1. Supply various instruments: measuring, analytical instruments, electronic measuring instruments, laboratory equipment, etc. Such as dead weight tester, pressure gauges, calibrators sensors and transmitters.
2. Supply authoritative national, provincial verification and calibration services.
3. Supply lab services for Colleges & Universities and institutions.

Customer-focused, reliability and superior service are our standard.

Look forward to be your partner.



Products

Products of CREAT WIT cover following series

Mechanical dead weight testers

CW series: Dead weight tester (0.04-160) MPa

CW2500T: Ultra-high pressure dead weight testers (5-250)MPa



Digital pressure gauges

CWY50: Precision digital pressure gauge (-0.1~70) MPa; accuracy: 0.5; 0.2

CWY100: Digital pressure gauge (-0.1~250) MPa, accuracy: 0.1, 0.2, 0.5, RS485, RS232

CWY122: Stable digital pressure gauge (-0.1~250) MPa, accuracy: 0.1, 0.05, and 0.02



CWY50



CWY100



CWY122



Pressure Calibrators

CWY300-Digital pressure calibrator

CWY1060-Automatic pressure calibrator

CWY1060F-Portable automatic pressure calibrator



CWY300



CWY1060



CWY1060F

Pressure sensors

SMP6160

SMP6080

SMP6100



Pressure transmitters

SMP8009

SMP8001

SMP8603





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Hydraulic Dead Weight Tester - CW series:



Products description:

Working Principle:

Mechanical dead-weight testers or primary standards are the most accurate reference instruments for pressure. Their functional principle is based on the physical principle of $\text{pressure} = \text{force}/\text{area}$. Mass pieces placed on the top of a piston-cylinder system are the source of a precisely defined force. By producing a certain (counter) pressure inside the pressure balance an equilibrium is achieved: the mass pieces, including the free-running piston of the piston-cylinder system, are floating, which will lead to a very accurate pressure at the test port.

Applications:

1. Primary standard for defining the pressure scale in a range of up to 160MPa
2. Pressure reference for factory and calibration lab for the testing, adjustment and calibration of pressure measuring instruments.



Specification:

Model (optional): CW-6T CW-60T CW-250T CW-600T CW-1000T CW-1600T

Measuring range (MPa): (0.04-0.6), (0.1-6), (0.5-25), (1-60), (2-100), (2-160)

Accuracy: 0.005%; 0.01%; 0.02%; 0.05%

Materials:

Piston (the rod and cylinder): tungsten carbide

Weight: Non-magnetic stainless steel (0.005, 0.01, 0.02); Carbon steel (0.05)

Base: Stainless steel

Working medium:

<25MPa: Mixed oil (transformer oil and kerosene oil)

≥25MPa: sebacate oil

Features:

1. Able to test two gauges synchronously; Applied the fast pressure plug; no oil leakage;
2. Abrasive resistance is improved because of the high-tensile and high-hardness wolfram carbide material;
3. The piston rod is anti-breakage structure.
4. The piston system configures Eddy current displacement sensor, adopts integrated double row LCD digital cursor display (which is firstly invented in China), therefore piston position can be observed clearly at any time.
5. With pre-pressure pump, it can fill oil to large capacity gauge, several gauges or long distance calibration pipeline system.
6. The tester junction with stop valve and piston stop valve, so it can be used as independent pressure source, when piston stop valve is closed.



Ultra-High Pressure Dead Weight Tester-CW-2500T



Applications:

1. Primary standard for defining the pressure scale in a range of up to 250MPa
2. Pressure reference for factory and calibration lab for the testing, adjustment and calibration of pressure measuring instruments.

Working Principle:

Mechanical dead-weight testers or primary standards are the most accurate reference instruments for pressure. Their functional principle is based on the physical principle of $\text{pressure} = \text{force}/\text{area}$. Mass pieces placed on the top of a piston-cylinder system are the source of a precisely defined force. By producing a certain (counter) pressure inside the pressure balance an equilibrium is achieved: the mass pieces, including the free-running piston of the piston-cylinder system, are floating, which will lead to a very accurate pressure at the test port.



Features:

Weights can be driven to 250MPa with engine at once.

Dirty medium oil can be drained out from sewage outlet when it gets dirty.

The piston rod is anti-breakage structure and adopts spacing ring structure to reduce friction, so it is strong and rotates steadily.

The gauge adopts military grade sealed structure to completely avoid oil leakage.

The base is stainless steel material and is assembled 3.5" TFT LCD display which can display piston working location, temperature and humidity, etc.

Specifications:

Model: CW-2500T

Measuring range: (50~2500) bar

Accuracy: 0.005% 0.01% 0.02% 0.05%

Medium: Sebacate oil

Material: Piston rod, cylinder: tungsten carbide.

Weight set: Non-magnetic stainless steel
According to the user's requirement, it can be customized and the pressure deformation coefficient will be adjusted.

Weight adjustment: Masses can be adjusted to specific location gravity.

Pressure test method: gauge pressure

Test ports: M20×1.5 or NPT , user defined quick connector



CWY digital pressure gauge is mainly composed of the pressure sensor and the circuitry of the signal processing. Pressure sensor adopted the imported sensor which is superior performance, such as high accuracy, corrosion resistance, impact resistance, anti-vibration, high stability and so on; signal processing circuitry adopted the latest ultra-low-power processors, signal processing chip and power management chips; using large-capacity and high-performance lithium battery power supply. This small-size instrument looks nice and quite easy to operate.

According to the pressure performance, CWY digital pressure gauge can be divided into three, which are vacuum, positive pressure and hydraulic.

According to the pressure range, it can be divided into: micro-pressure, low-pressure and high pressure. It is mainly applied in a variety of metrology departments for calibrating various differential pressure transmitter, pressure transmitter, pressure meters and some other pressure calibration equipment.



Precision digital pressure gauge-CWY50



Description:

The model CWY50 digital pressure gauge is low power consumption, adopts international advanced measuring circuit, precise and reliable temperature compensation. It is also upgrading product of traditional pointer type pressure gauges.

Applications:

Precisely measure pressure value, analyze pressure changes, calibration pressure.
Calibration in laboratory and on site directly.

Specification:

Pressure range: -1000bar~1000bar (or user defined)

IP grade: IP65

Accuracy: $\pm 0.5\%$ $\pm 0.2\%$

Operating temperature: (0~50) °C

Relative humidity: <95%

Pressure transmission medium: Liquid (gas) compatible with 316L stainless steel

Dimensions: $\phi 80\text{mm} \times 34\text{mm}$

Weight: 0.5kg

Connection: M20 \times 1.5 , or user defined e.g. NPT.

Additional function: Max value record



Features:

- 1 low power consumption, high resolution with 4 digits display, bright backlight for using easily in poor light conditions;
- 2 With small size, easy operation features, it is easy to be used on site calibration and precision pressure measurement;
- 3 Intelligent calibration, linear repair, two-second induction zero with magnetic pen;
- 4 LCD screen visually displays pressure percentage based on its dynamic pressure value display;
- 5 Unit: mmH₂O mmHg KPa MPa mbar bar Psi or other options.
- 6 Power supply: The two built-in lithium batteries can be used for 3-5years. (The battery is replaceable.)



CWY100 Precision digital pressure gauge

Description

The model CWY100 precision digital pressure gauge takes world leading micro-processing technology and analog-digital conversion algorithm to make it high accuracy and low-power consumption.



Applications:

Precisely measure pressure value, analyze pressure changes, calibration pressure.

Calibration in laboratory and on site directly.

Specification:

- | |
|--|
| 1. Measure range: $(-0.01 \sim 250)$ MPa. |
| 2. Signal output: 4-20mA, 0-5V, RS485, RS232 |
| 3. Accuracy level: 0.1, 0.2, 0.5. |
| 4. Display: 5 digits dynamic display + percentage indicator |
| 5. Unit: Pa, kPa, MPa, psi, bar, mbar, mmH ₂ O, mmHg, inH ₂ O, inHg, kg · f/cm ² . (According to the full range to judge which unit can be converted to display, because the display is not more than 5-digit). |



6. Overload pressure: 150%
7. Power supply: 3.7V large-capacity Li battery
8. Media temperature: -45℃~120℃.
9. Operating environment:
Temperature: -10℃~50℃;
Humidity: ≤85%RH;
Reference environment correction: 20℃±2℃.
10. Temperature compensation range: 0℃~50℃
11. Explosion protection grade: Exia II CT4.
12. Protection grade: IP65.

Dimension

1. Process connection: M20 × 1.5 (male thread); please specify if ordering other size.
2. Size: 170mm (H) x 110mm (W) x 50mm (T)
3. Weight: 600g



Digital precision pressure gauge-CWY122



Description:

The model CWY122 digital pressure gauge is energy-saving, adopts international advanced measuring circuit, precise and reliable temperature compensation. It is also upgrading product of traditional pointer type pressure gauges.

Applications:

Calibrate general pressure gauges, precision pressure gauges, other pressure gauges;
Precisely measure pressure value, analyze pressure changes, control pressure.
Use in laboratory and directly use on site.

Features:

5 digits display, it can be used in poor light conditions with backlight.

The gauge was tested temperature compensation; aging, and MAX/MIN values can be saved automatically.

High stability: low temperature drift, low time drift, strong anti-interference ability.

11 pressure units: psi, bar, kPa, Pa, MPa, mmH₂O, etc.

Specification:

Measuring range: -100kPa~1000bar (or user defined)

Accuracy:	0.1%	0.05%
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Sampling rate:

The measuring rate can be user-defined to match the type of measurement required.

If rate is 1 operation per second, the battery life is 2,000 hours;

If rate is 1 operation per 10 seconds, the battery life is 8,000 hours;

If rate is 8 operations per second, the battery life is 500 hours.

Ambient conditions:

Operating temperature: $(-10 \sim 50) ^\circ\text{C}$

Relative humidity: $< 95\%$

Atmospheric pressure: $(86 \sim 106) \text{ kPa}$

Storage temperature: $(-20 \sim 70) ^\circ\text{C}$

Working medium: Non-corrosive gas or liquid compatible with 316L SS

IP grade: IP65

Overload capacity: 120%

Communication: RS232



Intelligent digital pressure calibrator-CWY300



Description:

CWY300-the intelligent digital pressure calibrator is developed and manufactured by with independent intellectual property right, it is mainly used for calibrate pressure transmitters, pressure switches (controllers), the general pressure gauges, precise pressure gauges, blood pressures, or other pressure instruments, and can also be widely used in the precise measurement of pressure.

It can be used with CWY automatic pressure calibration station as its external pressure module, communicate with TMMS2000 and automatically print calibration report.

Specification:

Model: CWY300

Pressure measuring range: -100kPa~60MPa,

Accuracy: 0.02%F.S, 0.05%F.S, 0.1%F.S, 0.2%F.S

Current measuring range: (0~22)mA accuracy: 0.02, 0.05

Voltage measuring range: (0~5.5)V, accuracy: 0.05

Resistance measuring range: (0~20)Ω, accuracy: 1

The built-in power supply DC24V

Calibration results memory: 28/56 files, 40pcs record/file. 20 pcs before and after adjustment

Clock function



Ambient conditions:

- | |
|--|
| a. Temperature: (-5~50) °C; |
| b. RH (relative humidity): <95%; |
| c. Atmospheric pressure: (86~105) kPa |
| d: Compensation temperature: (-5~50)°C |
| e: Storage temperature: (-30~80)°C |

Features:

Pressure unit: kPa, psi, inHg, inH₂O, mmHg, mmH₂O, MPa, bar, mbar, atm, kgf/cm², Pa,

Pressure overload: It will display overload and warn when pressure measurements are over 110% F S.

Display: LCD screen with white backlight, 5 digits display

Power supply mode: 3.7V/3500mAH Lithium battery

Auto power-off: Auto power-off after 20 minutes if there is no operation and the pressure change is less than 1% of the range within 1 minute.

Communication serial port configuration:

Baud rate: 57600; check bit: no, data bits: 8 bits; stop bits: 1 bit;

Size:

External dimension: gauge head: $\phi 108\text{mm} \times 43\text{mm}$, overall length: 170mm

Weight: approx 0.6kg;

Pressure connection: M20×1.5 (user defined eg. NPT);

$\Phi 6\text{mm}$ quick socket (differential pressure model);

Power connection: $\phi 6$ standard banana plug;

Additional function:

Temperature test with resolution $\pm 0.1^\circ\text{C}$



CWY1060 series hydraulic automatic pressure calibrator

CWY1060 series hydraulic fully automatic pressure calibrator has three

Categories:

- Internal pressure module hydraulic automatic pressure calibrator
- External pressure module hydraulic automatic pressure calibrator
- Bench pressure module hydraulic automatic pressure calibrator



Specification

Medium: transformer oil or purified water. For verification, no external pressure source is required, no air exhaust is required.

Standard evaluated point: 0%, 25%, 50%, 75%, 100%, automatic return. It can be arbitrarily set connected with computer.

Customized verification point: any point.

Verification point automatic stabilization time: 20s, adjustable within (10 ~ 240)s

Overall time of the transmitter automatic verification (steady after 9 points): about 5 minutes

Internal pressure module measuring range: (3~60) MPa

Customized verification range: intervals within (3~60) MPa

Units: MPa

Display precision: 5 digits

Pressure accuracy: 0.02% F.S or 0.05% F.S

Current accuracy: 0.02% or 0.05%

Pressure control accuracy: ± 5

Standard evaluated point: 0%, 25%, 50%, 75%, 100%, automatic return. It can be arbitrarily set connected with computer.

Customized verification point: any point.

Verification point automatic stabilization time: 20s, adjustable within (10 ~ 240)s

Overall time of the transmitter automatic verification (steady after 9 points): about 5 minutes

Pressure switch verification time: about 2 minutes.



HART function
Security protection: overpressure, overcurrent, sensor failure, etc.
Current input: (1 ~ 2) input, (0 ~ 22) mA Switch input: dry contact, it can detect contact resistances.
Loop power supply: DC24V/30mA, which does not damage the standard gauge if it is incorrectly connected.
Pressure interface: M20*1.5 female thread quick connector
Current/voltage interface: Φ 4 standard banana plug
Sewage outlet: inner diameter : Φ 6 mm
Power supply: 220V/50Hz
Weight: 19kg
Dimension: 530 (L) *300 (W) *300 (H) mm
Automatic verification software: optional
external standard gauge connection



Portable automatic pressure calibrator-CWY1060F



Description

This product won four patents (ZL201220302065.8, ZL201220302062.4, ZL201420689202.7, 201530021958.4), CWY1060F (portable automatic pressure calibration stand) contains pressure generating, pressure measurement, electrical signal measurement and HART communication function, and is suitable for testing pressure transmitters, pressure switches, pressure controllers, pressure indicators.

HART function: It has built-in HART function to replace HART manual operator. It can set or calibrate HART transmitter range and make the current output a fixed value (eg. 20mA, 12mA, 4mA), has linear or root square function and reset transmitter of the pressure sensor can be HART, etc.

Specification

Measuring range and accuracy:

Pressure range: -0.95~600 bar

Accuracy: 0.02% or 0.05%.

Display resolution: 5 digits.

Pressure units: Pa, kPa, MPa, psi, bar, mbar, inH₂O, mmH₂O, inHg, mmHg, kgf/cm², atm,

Current measuring range: (0~22) mA; Accuracy: 0.02% or 0.05%.

Voltage measuring range: (0~5.5) V; Accuracy: 0.05%.

Resistance measuring range: (0~22) Ω;



Other parameters:

Pressure interface: M20*1.5 female screw quick connector.

Current/voltage interface: $\Phi 4$ standard banana plug.

Power supply: 24V lithium battery, working time: 1 day.

Temperature: water(5-50) $^{\circ}\text{C}$, other medium(-5-50) $^{\circ}\text{C}$.

7"color LCD touch screen, operating interface is beautiful.

Weight: 10Kg.

Dimensions: 215(H)*280(D)*320(W) mm.

Control features:

Pressure control stability: $<0.025\%\text{F.S}$

Deviation: $<0.1\%\text{F.S}$

Responding time: $<120\text{s}$.

Well-designed interface to displays graph.

User guide can be shown in the touch screen.

Automatic leak hunting with leak alarm function.

AC adapters can be used when the battery is low.

Features:

1. Automatically verify pressure transmitters, pressure switches, pressure gauges.
2. pressure transmitters verification:
3. Standard checking point: 0%, 25%,50%,75%,100% of full range.
4. Verification point default stabilization time: 20 seconds, set at any value within 10-240s.
5. Whole time of automatic verification (9 points): about 5 minutes, quick pressure generating.
6. Intrinsic HART protocols, it can be a HART operator for smart transducer.
7. Pressure switches verification: automatically test pressure switches operation value and resetting value, and test pressure switches contact resistance.
8. Result can be exported from USB.
9. Security protection: overpressure, sensors failure etc.
10. 10. Loop power: DC24V/30mA, reference gauge will not be damaged if it is connected incorrectly.



SS316L pressure sensor- SMP6160

●Overview

SMP6160 series pressure sensor uses high stability diffusion silicon chip, the measured medium pressure can be transferred to silicon chips through the diaphragm and silicone oil transfer to the diffusion of silicon chips, the use of diffusion silicon piezo-resistive effect principle, to achieve the purpose of measuring the size of liquid, gas pressure.

●Features

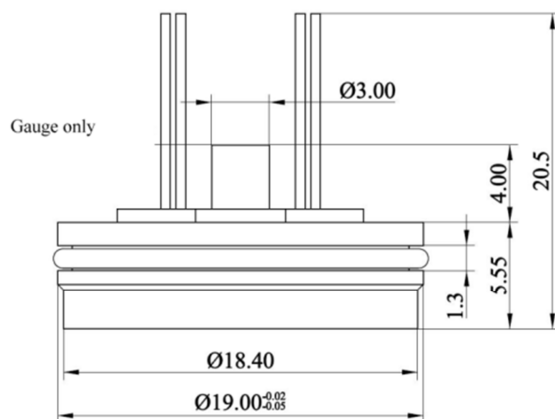
- Range: -100kPa...0kPa~20kPa...3.5MPa
- SS 316L
- $\phi 19\text{mm} \times 5.55\text{mm}$
- high precision, high stability

●Application

- Industrial process control
- Gas, liquid and vapor pressure detection
- Level measurement



●Outline structure: (unit: mm)



**●Specification**

Structural Condition	
Diaphragm material	SS 316L
Housing material	SS 316L
Pin Wire	Gold-plated kovar /100mm silicone rubber wire
Back pressure tube	SS 316L (gauge and negative pressure only)
Seal ring	NBR rubber
Electrical Condition	
Power supply	$\leq 2.0\text{mA DC}$
Impedance input	$2.5\sim 5\text{k}\Omega$
Impedance output	$2.5\text{k}\Omega\sim 5\text{k}\Omega$
Response	$(10\%\sim 90\%):<1\text{ms}$
Insulation resistance	$100\text{M}\Omega, 100\text{V DC}$
Overpressure	2times FS, (0C/0B/0A/02 5times FS)
Environmental Condition	
Media applicability	Fluid which has no corrosion on SS316L and NBR rubber
Shock	No change at 10g RMS , $(20\sim 2000)\text{Hz}$
Impact	100g , 11ms
Position effects	Deviate 90° from any direction, zero change $\leq \pm 0.05\%\text{FS}$
Basic Condition	
Environment temperature	$(25\pm 1)^\circ\text{C}$
Humidity	$(50\%\pm 10\%) \text{RH}$
Atmospheric pressure	$(86\sim 106) \text{KPa}$
Power supply	$(1.5\pm 0.0015) \text{mA DC}$
All tests are in accordance with relevant national standards, including GB / T2423-2008, GB / T8170-2008, GJB150.17A-2009, etc., and also comply with the Company's "Pressure Sensor Enterprise Standards" provisions of the relevant content.	

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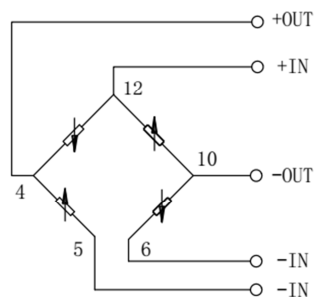
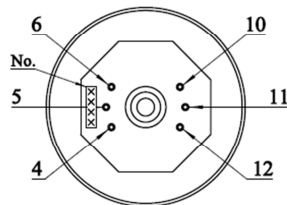


●Parameter

Item	Min.	Typ.	Max.	Units
Linearity		± 0.15	± 0.25	%FS,BFSL
Repeatability		± 0.05	± 0.075	%FS
Hysteresis		± 0.05	± 0.075	%FS
Zero output			± 2.0	mV DC
FS output	45	100		mV DC
Compensated	0~70			°C
Working temp.	-40~125			°C
Storage temp.	-55~150			°C (no Sealing ring)
Zero temp.		± 0.75	± 1.0	%FS,@ 25°C
Full temp. error		± 0.75	± 1.0	%FS,@ 25°C
Long term		± 0.2		%FS/year

Note: 1. The above performance indicators are tested under the benchmark conditions.
2. The temperature range for temperature drift test is the compensation temperature range.

●Electrical connection



Pin	Electric connection	Wire color
4	+OUT	Red
10	-OUT	Blue
11	-IN	Yellow
12	+IN	Black



●Order information

SMP6160		SS316L pressure sensor						
	Range code	Measurement range	Pressure type	Range code	Measurement range	Pressure type		
	0B	0~20kPa	G	08	0~350kPa	G/A		
	0A	0~35kPa	G	09	0~700kPa	G/A		
	02	0~70kPa	G	10	0~1MPa	G/A		
	03	0~100kPa	G/A	12	0~2MPa	G/A		
	07	0~200kPa	G/A	13	0~3.5MPa	G/A		
		Code	Pressure Type					
		G	Gauge pressure					
		A	Absolute pressure					
			Code	Electrical connection				
			1	Gold-plated kovar pin				
			2	100mm Silicone rubber leads				
				Code	Special measurement			
				Y	Gauge pressure type can be used to measure negative pressure Note ^①			
SMP6160-0B-G-1-Y the whole spec [®]								

Order notes:

- 1 To avoid sensor instability, please pay attention to the installation size and installation, to avoid pressing the sensor front and rear surface.
- 2 When using a gold-plated cotter pin on a wire, please use a soldering iron below 25W under low temperature soldering within 3 seconds to avoid heat transfer to the sensor.
- 3 Because the sensor will be irreparably damaged when welded by improper welding method, if you need the secondary welding of the sensor, please contact us, we can provide good welding components directly.



OEM Stainless steel insulation film pressure sensor - SMP6080 series

• Introduction

SMP6080 series of OEM standard Stainless steel insulation film pressure sensor core has the same shape, assembly size and sealing methods with foreign mainstream similar products, which can be directly replaced. Each product's production has adopted a strict aging, screening and testing processes, to ensure excellent quality and high reliability.

This series of products can be reliably used in hydraulic systems, industrial process control and other application.

• Features

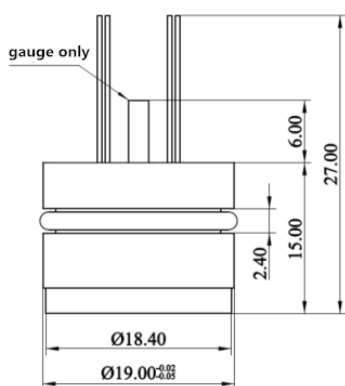
- Measuring Range: -100kPa...0kPa~20kPa...70MPa
- Imported chip, Laser trimming
- SS 316L, Hastelloy C, titanium, tantalum and other materials for special applications.
- $\phi 19\text{mm} \times 15\text{mm}$ standard OEM pressure sensor



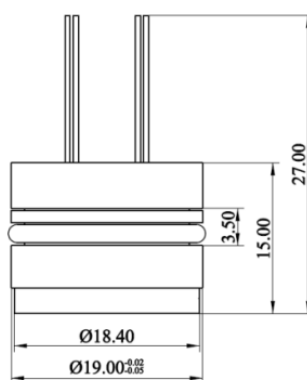
• Application

- Industrial process control
- Gas, liquid and vapor pressure detection
- Level measurement

• Outline construction (unit: mm)



Range<20MPa



Range≥20MPa

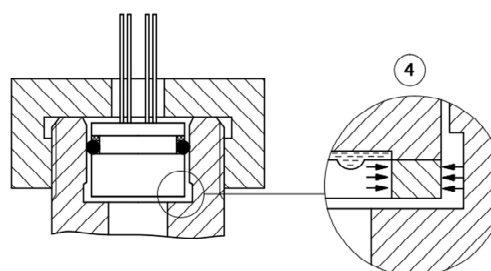
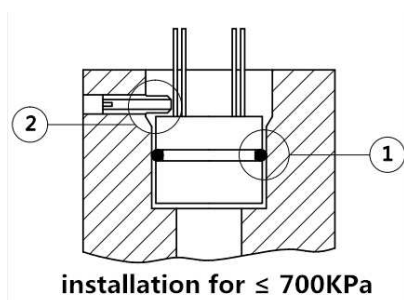
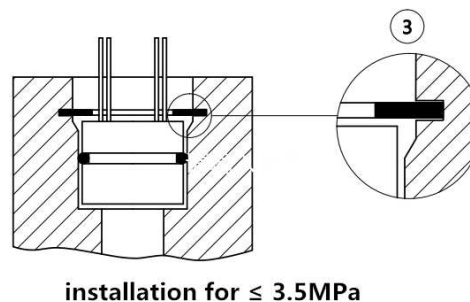
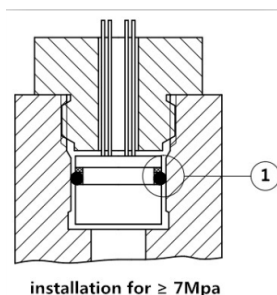
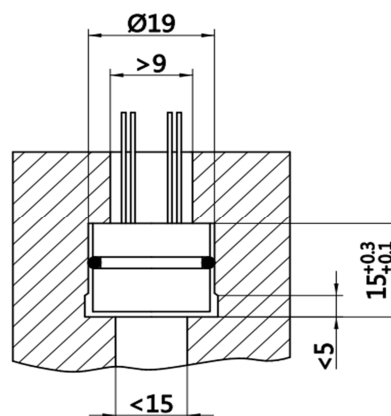
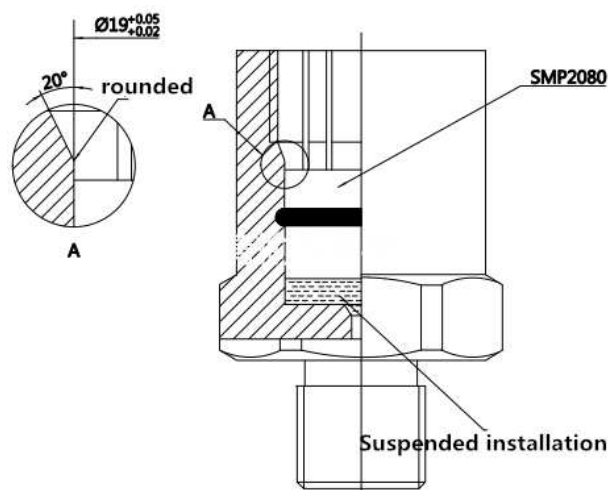


●Specification

Construction condition	
Diaphragm material	SS 316L
Housing material	SS 316L
Pin Wire	Kovar/100mm silicone rubber wire
Back pressure tube	SS 316L (gauge and negative pressure only)
Seal ring	nitrile rubber
Electrical Condition	
Power supply	≤ 2.0 mA DC
Impedance input	$2.5k\Omega \sim 5 k\Omega$
Impedance output	$2.5k\Omega \sim 5 k\Omega$
Response	(10%~90%): <1 ms
Insulation resistance	100M Ω , 100V DC
Overpressure	2times FS, (0C/0B/0A/02 5times FS)
Environment Condition	
Media applicability	fluid which has no corrosion on stainless steel and nitrile rubber
Shock	No change at 10gRMS, (20~2000)Hz
Impact	100g, 11ms
Position	Deviate 90° from any direction, zero change $\leq \pm 0.05\%$ FS
Basic Condition	
Environment temperature	(25 \pm 1) °C
Humidity	(50% \pm 10%) RH
Atmospheric pressure	(86~106) kPa
Power supply	(1.5 \pm 0.0015) mA DC



Recommended installation structure (unit: mm)



Description:

- : When installing O-ring or PTFE ring, keep PTFE ring installed in the side without pressure;
- : Screw can't be lifted to the sensor housing;
- : The figure shows the installation of elastic ring with holes;
- : The picture shows the pressure transmitter suspension installation, to make sure there is a gap between the radial



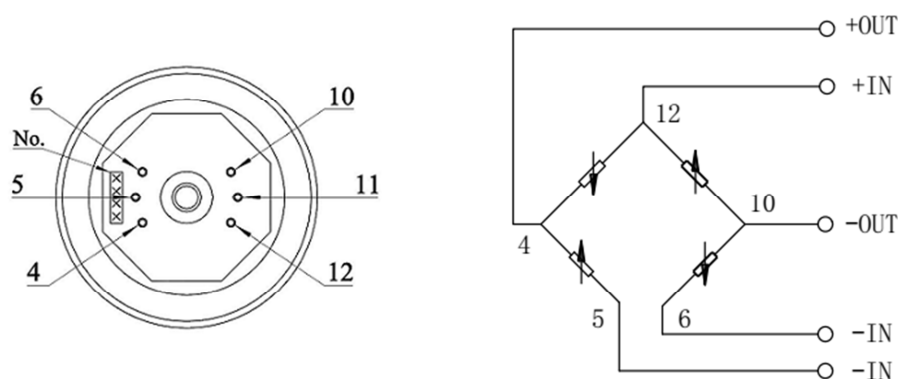
and axial of the sensor ring and the base, to avoid pressure is transmitted to the sensor diaphragm.

●Parameter (@1.5 Ma DC)

Item	Min.	Typ.	Max.	Units
Linearity		±0.1	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output			±2.0	mV DC
FS output	45	100		mV DC
Compensated temp.	0~70			°C
Working temp. range	-40~125			°C
Storage temp. range	-55~150			°C
Zero temp. error		±0.75	±1.0	%FS @ 25°C
Full temp. error		±0.75	±1.0	%FS @ 25°C
Long term stability		±0.2		%FS/year

Note: 1. The above performance indicators are tested under the benchmark conditions
2. The temperature range for temperature drift test is the compensation temperature range

●Electrical connection



4	+OUT	Red
10	-OUT	Blue
11	-IN	Yellow
12	+IN	Black



●Order information

SMP6080		OEM metal film isolation pressure sensor				
	Range Code	Measurement range	Pressure Type	Range Code	Measurement range	Pressure Type
	0B	0～20kPa	G	12	0～2MPa	G/A
	0A	0～35kPa	G	13	0～3.5MPa	G/A
	02	0～70kPa	G	14	0～7MPa	A/S
	03	0～100kPa	G/A	15	0～15MPa	A/S
	07	0～200kPa	G/A	17	0～20MPa	A/S
	08	0～350kPa	G/A	18	0～35MPa	A/S
	09	0～700kPa	G/A	19	0～70MPa	A/S
	10	0～1MPa	G/A			
		Code	Pressure Type			
		G	Gauge pressure			
		A	Absolute pressure			
		S	Sealed gauge pressure			
			Code	Electrical connection		
			1	Gold-plated kovar pin		
			2	100mm Silicone rubber leads		
				Code	Special measurement	
				Y	Gauge pressure type can be used to measure negative pressure Note ^①	
	SMP6080-0B-G-1-Y the whole spec Note ^②					

Note^①: When the gauge pressure is measured, it will affect the zero and full value of the sensor. At this time, it is different from the value specified in the parameter table, and the customer will be fine-tuned on the follow-up circuit.

Note^②: We can provide assembly or welding products once we confirmed the sketches customer offer.

Order notes:



- 1: To avoid sensor instability, please pay attention to the installation size and installation, to avoid pressing the sensor front and rear surface.
- 2: When using a gold-plated cotter pin on a wire, please use a soldering iron below 25W under low temperature soldering within 3 seconds to avoid heat transfer to the sensor.
- 3: Because the sensor will be irreparably damaged when welded by improper welding method, if you need the secondary welding of the sensor, please contact us, we can provide good welding components directly.



High Stable Piezo-Resistive Pressure Sensor -SMP6100 Series

●Introduction

SMP 6100 high stable OEM sensor is the piezo-resistive pressure sensor with isolated construction and precise compensation. It uses MEMS silicon die, combined with our company's unique design and production process. Each product's production has adopted a strict aging, screening and testing processes, to ensure excellent quality and high reliability, and to provide high-quality products for the long-term use of customers. This series of products can be reliably used in hydraulic systems, industrial process control and other application.

●Features

Patent product: ZL 2016 2 0881761.7

Measuring range: -100kPa...0kPa~10kPa...100MPa

Wide temperature compensation: -10℃~+80℃

SS 316L

φ19mm*11.5mm standard OEM pressure sensor

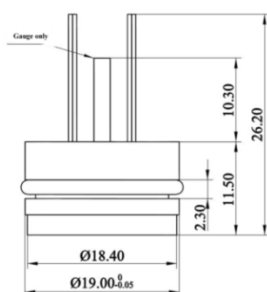


●Application

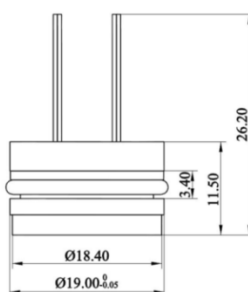
Process control

Hydraulic system

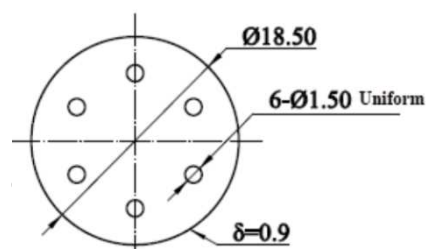
●Outline Construction (Unit: mm)



<20MPa



≥20MPa



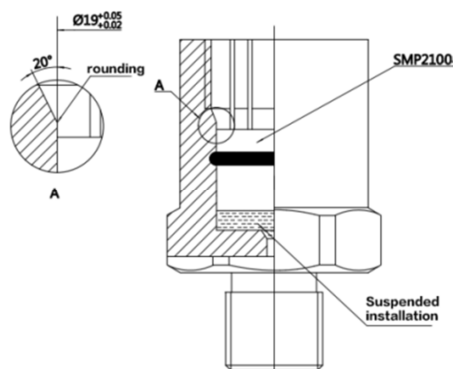
Options: pressure cushion



●Specification

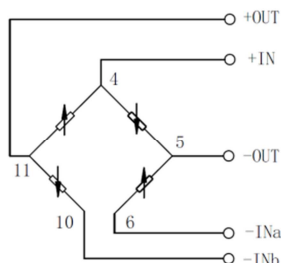
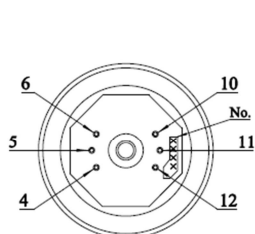
Construction condition	
Diaphragm material	SS 316L
Housing material	SS 316L
Pin Wire	Gold-plated karaf /100mm silicone rubber wire
Back pressure tube	SS 316L (gauge and negative pressure only)
Seal ring	Nitrile rubber
Electrical Condition	
Power supply	≤ 2.0 mA
Impedance input	3k Ω -6 k Ω
Impedance output	3k Ω -6 k Ω
Response	(10%~90%): <1ms
Insulation resistance	100M Ω , 100V DC
Overpressure	2times FS, (0C/0B/0A/02 5times FS)
Environmental Condition	
Media applicability	Fluid which has no corrosion on stainless steel and nitrile rubber
Shock	No change at 10gRMS, (20~2000)Hz
Impact	100g, 11ms
Position effects	Deviat 90° from any direction, zero change $\leq \pm 0.05\%$ FS
Basic Condition	
Environment temperature	(25 ± 1) °C
Humidity	(50% $\pm 10\%$) RH
Atmospheric pressure	(86~106) kPa
Power supply	(1.5 ± 0.0015) mA DC
All tests are in accordance with relevant national standards, including GB / T2423-2008, GB / T8170-2008, GJB150.17A-2009, etc., and also comply with the Company's "Pressure Sensor Enterprise Standards" provisions of the relevant content.	

●Recommended installation structure (unit: mm)

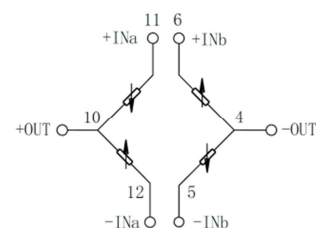
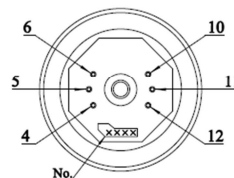




●Electrical connection



≥20Kpa



≤10Kpa

Range	Pin	Electrical definition	Wire color
≥20Kpa	4	+IN	Black
	5	-OUT	Blue
	11	+OUT	Red
	12	-IN	Yellow
≤10Kpa	4	-OUT	Blue
	5	-IN	Yellow
	6	+IN	Black
	10	+OUT	Red

Parameter

Item	Min.	Typ.	Max.	Units
Linearity		±0.1	±0.2	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output			±2.0	mV DC
FS output	45	130		mV DC
Compensated temp. range	-10~80 (0A/0B/0C 0~70)			°C
Working temp. range	-40~125			°C
Storage temp. range	-55~150			°C
Zero temp. error		±0.75	±1.0	%FS, @25°C



Full temp. error		±0.75	±1.0	%FS, @ 25°C
Long term stability error		±0.1		%FS/year
Note: 1. The above performance indicators are tested under the benchmark conditions 2. The temperature range for temperature drift test is the compensation temperature range				

●Order information

SMP6100		High stable piezo-resistive OEM sensor						
	Range code	Measurement range	Pressure type	Range code	Measurement range	Pressure type		
	0C	0~10kPa	G	12	0~2MPa	G/A		
	0B	0~20kPa	G	13	0~3.5MPa	G/A		
	0A	0~35kPa	G	14	0~7MPa	A/S		
	02	0~70kPa	G	15	0~15MPa	A/S		
	03	0~100kPa	G/A	17	0~20MPa	A/S		
	07	0~200kPa	G/A	18	0~35MPa	A/S		
	08	0~350kPa	G/A	19	0~70MPa	A/S		
	09	0~700kPa	G/A	20	0~100MPa	A/S		
	10	0~1MPa	G/A					
		Code	Pressure Type					
		G	Gauge pressure					
		A	Absolute pressure					
		S	Sealed gauge pressure					
			Code	Electrical connection				
			1	Gold-plated kovar pin				
			2	100mm Silicone rubber leads				
				Code	Special measurement			
				Y	Gauge pressure type can be used to measure negative pressure Note ^①			

SMP6100-0B-G-1-Y the whole spec



Order notes:

- 1 To avoid sensor instability, please pay attention to the installation size and installation, to avoid pressing the sensor front and rear surface.
- 2 When using a gold-plated cotter pin on a wire, please use a soldering iron below 25W under low temperature soldering within 3 seconds to avoid heat transfer to the sensor.
- 3 Because the sensor will be irreparably damaged when welded by improper welding method, if you need the secondary welding of the sensor, please contact us, we can provide good welding components directly.



SMP8009 Piezo-resistive Pressure Transmitter

●Overview

SMP8009 series of general piezo-resistive pressure transmitter is developed and produced by our company; it is a kind of piezo-resistive pressure transmitter which can be adjusted on zero and full-scale output.

It uses high stability, high reliability piezo-resistive pressure sensor and high-performance transmitter dedicated circuit, and the performance is stable and reliable. This pressure transmitter can be widely used in petroleum, chemical, power, hydrology, geology and other industries for fluid pressure detection and control.



●Features

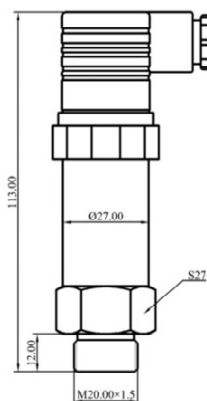
- Reliable, safe and easy to use
- Short circuit protection and reverse polarity protection
- measurable gauge pressure, absolute pressure and seal reference pressure

●Applications

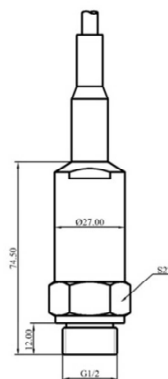
- Petroleum, chemical industry, electric power
- Urban water supply, hydrologic exploration
- Hydraulic industry



●Outline structure: (Unit: mm)



Hirschman



Cable

●Specification

Pressure parameter		
Range	-0.1MPa...0MPa~0.01 M...100MPa	
Over load	2 times@ FS 110MPa(take the small value)	
Pressure type	gauge, absolute or sealed gauge	
Electric parameter		
Output type	Current type	Voltage type
Power supply	9~30V DC	12~30V DC
Output signal	4mA~20mA DC（2 wire）	0/1V~5/10V DC（3 wire）
Load resistance	≤（U-9）/0.02	≥10k
Insulation resistance	100MΩ,100V DC	
Construction parameter		
Housing	SS	
Sensor	SS 316L	
Seal ring	Viton	
Cable	ø7.5mm special cable for Polyethylene	
Protection class	IP65（plug）	IP68（cable）
Ambient parameter		
Media applicability	Fluid which has no corrosion to SS 316L and Viton	
Compensation temperature	-10℃~+80℃	



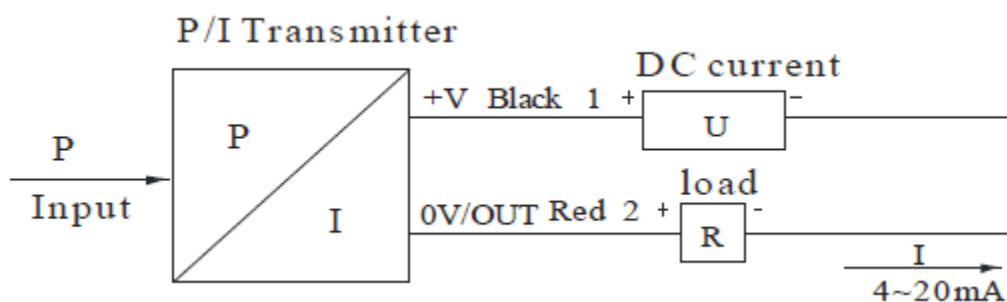
Operating temperature	-30℃～+80℃	
Storage temperature	-40℃～125℃	
Performance parameter		
Accuracy	±0.25%FS(Typical)	±0.5%FS(Max.)
Zero temperature coefficient	0.03%FS/℃（≤100kPa）；0.02%FS/℃（＞100kPa）	
Full temperature coefficient	0.03%FS/℃（≤100kPa）；0.02%FS/℃（＞100kPa）	
Long term stability	±0.3%FS/ year(Max.)	

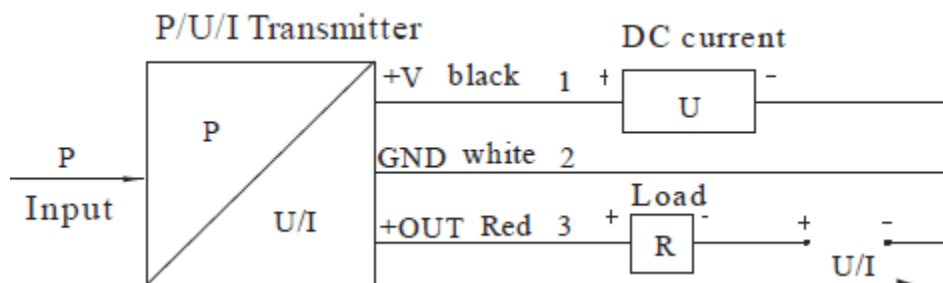
●Electrical Connection

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

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

Electric Connection for transmitter output 2-wire 4 ~ 20mA



**Electric Connection for transmitter 3-wire 0/1 ~ 5VDC****Order information**

SMP8009	Universal piezo-resistive pressure transmitter						
	Range		Pressure range: -0.1MPa...0MPa~0.01 MPa... 100MPa				
	[0~X] KPa or MPa		X: Actual pressure range				
		Code		Signal output			
		E		4mA~20mA DC			
		F		1V~5V DC			
		J		0V~5V DC			
		V		0V~10V DC			
			Construction material				
			Code	Diaphragm	Pressure port	Housing	
			22	SS 316L	SS	SS	
			24	SS 316L	SS 316L	SS 316L	
				Code	Other		
				B ₁	Plug connection		
				B ₂	Cable connection		
				PC ₃	Flush diaphragm, G1/2 male		
PC ₅				Flush diaphragm, M20×1.5 male			
C ₃	G1/2 male						



				C ₅	M20×1.5 male
				G	Gauge
				A	Absolute
				S	Sealed gauge
SMP8009 - [0~100] kPa – E – 22 - B ₁ C ₅ G the whole spec					

Order note:

- 1: Please try to fully understand the pressure detection point of the media status, pressure range and other working conditions. To avoid the unnecessary losses caused by unreasonable use of the product.
- 2: Although the product has designed a variety of protection measures, but for extreme applications, such as the scene with strong lightning applications, should ensure that the power supply grounding, and install anti-lightning protection device to minimize the probability of product failure.



SMP 8001 series general digital pressure transmitter

●Overview

SMP8001 series general digital pressure transmitters use a SS insulation film silicon pressure sensor as a signal measurement components, and do zero and temperature performance of wide temperature range by using the dedicated IC circuit on the transmitter.

The product can be used in petroleum, chemical, metallurgical, power, hydrological and other industrial processes on-site pressure measurement.



●Features

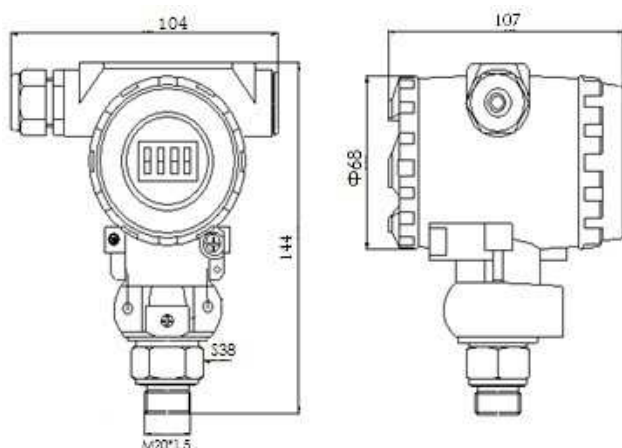
- Range: -0.1MPa---0MPa~0.01MPa---100MPa
- Display real-time pressure value with display screen,
- Easy to debug the zero and full scale.
- Reverse polarity protection and current limiting protection
- Anti-lightning, anti-pressure impact
- high precision, high stability, high reliability

●Application

- Industrial process control
- Hydraulic measurement
- Pressure measurement of various harsh environments



●Outline construction (unit: mm)



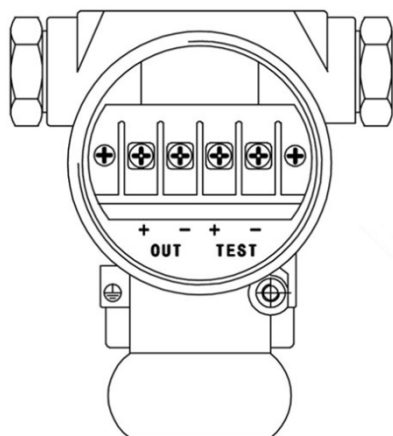
●Specification

Pressure parameter	
Range	-0.1MPa---0MPa~0.01 MPa---100MPa
Overload	2 times FS or 110MPa (take the min.)
Pressure type	Gauge pressure, absolute pressure, sealed gauge pressure
Electrical parameter	
Power Supply	12~32V DC
Output signal	4mA~20mA DC (2-wire)
load voltage	$\leq (U-12) / 0.02\Omega$
Construction parameter	
Housing	Explosion-proof cast aluminum housing
Sensor	Stainless steel 316L
Sealed-ring	Viton
Protection class	IP65
Environmental parameter	
Media applicability	Fluid which has no corrosion to Stainless steel 316L and viton
Compensation temperature	-10℃~80℃
medium temperature	-30℃~80℃ (LCD display: -20℃~80℃)



Storage temperature	-40℃～125℃（LCD display: -20℃～80℃）		
Performance index			
Accuracy	≤±0.1％FS(Min.)	≤±0.25％FS(Typical)	≤±0.5％FS(Max.)
Zero temperature coefficient	±0.03％FS/℃（≤100kPa）		±0.02％FS/℃（＞100kPa）
Full temperature coefficient	±0.03％FS/℃（≤100kPa）		±0.02％FS/℃（＞100kPa）
Long term stability	±0.2％FS/year (Max.)		

●Electrical connection



Terminal definition :

terminal	definition
OUT+	positive input /+V
OUT-	positive output/+OUT

●Order information

SMP8001	Series universal digital pressure transmitter			
	Range		Measurement range: -0.1MPa---0MPa~0.01 MPa---100MPa	
	[0~X] kPa or MPa		X: Actual measurement range	
		Code	Signal output	
		E	4mA~20mA DC	
			Code	Other functions
			N	no display
			M ₃	3½ bit LCD digital display instrumentation cone
			M ₄	3½bit LED digital display instrumentation cone
			C ₃	pressure port G1/2 G1 / 2
			C ₅	pressure port M20×1.5 G1 / 2



			G	Gauge pressure
			A	Absolute pressure
			S	Sealed gauge pressure
SMP8001 - [0~100] kPa – E - M ₃ C ₅ G				the whole Spec.

Order note:

- 1: Please try to fully understand the pressure detection point of the media status, pressure range and other working conditions. To avoid the unnecessary losses caused by unreasonable use of the product.
- 2: This product can be up to 20KHz at high frequency response applications, but still needs to communicate with our company to install its application to meet the normal needs.
- 3: Although the product has designed a variety of protection measures, but for extreme applications, such as the scene with strong lightning applications, should ensure that the power supply grounding, and install anti-lightning protection device to minimize the probability of product failure.



General input level transmitter-SMP8603 series

●Overview

SMP8603 series of general-purpose input level transmitter uses high-performance diffusion of silicon pressure sensor as a measurement element, it measures the hydrostatic pressure which is proportional to the depth of the liquid and Convert to standard current or voltage by signal processing circuit.

The product is suitable for petrochemical, metallurgical, power, pharmaceutical, water supply and drainage systems and other industries of various media level measurement.



●Features

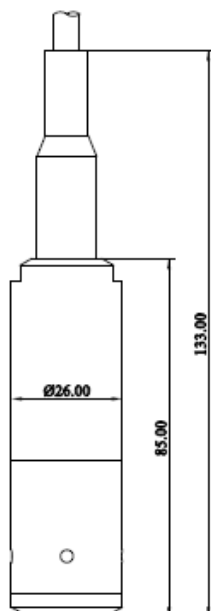
SS 316L , IP68

More than 2 times overpressure, when range is less than 5 meter, it can up to 5 times overpressure.

Anti-interference, anti-lightning design

High precision, high stability, high reliability.

●Outline construction: (Unit: mm)





●Specification:

Pressure parameter		
Range	0 mH ₂ O~1 mH ₂ O...200 mH ₂ O	
Overload	2 times FS,5 times FS when less than 5 mmH ₂ O	
Electrical parameter		
Output type	Current type	Voltage type
Power supply	9~30V DC	12~30V DC
Output Signal	4mA~20mA DC（2 wire）	0/1V~5/10V DC（3 wire）
Load resistance	≤（U-9）/0.02Ω（2 wire）	≥10k（3 wire）
Structural parameter		
Housing	SS	
Sensor	SS 316L	
Sealed-ring	Viton	
Cable	Ø7.5mm Polyethylene special cable	
Protection class	IP68	
Ambient parameter		
Media applicability	Fluid which has no corrosion to Stainless steel 316L and viton	
Compensation temperature	0℃~70℃	
medium temperature	-20℃~75℃	
Storage temperature	-40℃~125℃	
Performance index		
Accuracy	±0.25 %FS(Standard)	±0.5 %FS(Max.)
Zero temperature coefficient	±0.05 %FS/℃（≤5 mH ₂ O）	±0.02 %FS/℃（>5 mH ₂ O）
Full temperature coefficient	±0.05 %FS/℃（≤5 mH ₂ O）	±0.05 %FS/℃（>5 mH ₂ O）
Long term stability	±0.3%FS/year (Max.)	

●Electrical connection

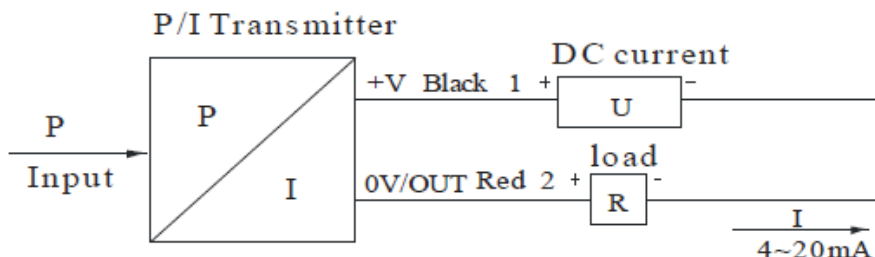
Definition of terminal :

Wire	2 wire	3 wire
Black	+V	+V
Red	+OUT	+OUT
White	N/A	Common port: GND

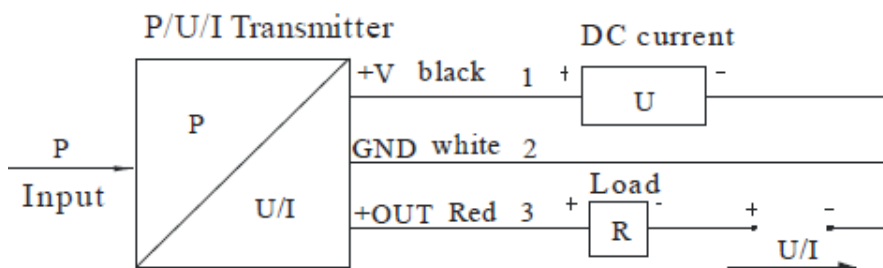


Electrical

Connection for transmitter output 2-wire 4 ~ 20mA DC



Electrical Connection for transmitter 3-wire 0/1 ~ 5VDC



●Order information

SMP8603		series general input level transmitter				
	Range	Measurement range 0 mH2O ~ 1 mH2O---200 mH2O				
	[0-X mH2O] L	X : measuring level , L : length of cable. Suggestions: L-X= (1 ~ 2) m				
		Code		Signal output		
		E		Output 4mA ~ 20mA DC		
		F		1V ~ 5V DC		
		J		0V ~ 10V DC		
		V		0V ~ 10V DC		
			Code	Material of construction		
				Isolation diaphragm	Port	Housing



			22	SS 316L	SS	SS
			24	SS 316L	SS 316L	SS 316L
				Code	Functions	
				Y	Terminal box	

SMP8603 - [0 ~ 5mH₂O] 6 – E – 22 –Y the whole Spec.

Order note:

- 1: Please note that the measured medium should be in contact with the product part of the contact medium.
- 2: The basic range of the absolute pressure product is a minimum of 100 kPa.
- 3: In order to ensure product reliability, we recommend users to install anti-lightning protection devices in the field and ensure reliable grounding of products and power supply.
- 4: We can provide special design and manufacturing for special application, welcome to consult the customer negotiations. Tel: 029-86690023 E-mail: sales@creatwit.com (Sales support). We will provide you with detailed technical support until you are satisfied.