

Instrument Changes the World

Technology Leads the Future



- Pressure
- Sensor
- Flow
- Analytical

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PRESSURE



PRODUCT OVERVIEW

1 AP1001 Differential Pressure Transmitter

- Accuracy: $\pm 0.1\%$
- Range: 0~1-6 kPa / 0~4-40 kPa / 0~25-250 kPa / 0~250-3MPa
- Output: 4-20mADC/HART
- Isolate Diaphragm: 316LStainless steel/Hastelloy C



2 AP1002 Pressure Transmitter

- Accuracy: $\pm 0.1\%$
- Range: 4~40 kPa / 25~250 kPa/ 0.25~3 MPa/ 1~10 MPa/ 2~21 MPa/ 4~40 MPa
10~40 kPa abs/ 25~250 kPa abs/ 0.25~3MPa abs
- Output: 4-20mADC/HART
- Working Pressure: 16MPa/40MPa



3 AP2001 Differential Pressure Transmitter

- Accuracy: $\pm 0.1\%$
- Range: 0 ~ 1-6kPa/0 ~ 4-40kPa/0 ~ 25-250kPa/0~250-3000kPa
- Output: 4mA-20mADC/485 communication
- Working Pressure: 16MPa/40MPa
- Isolate Diaphragm: 316LStainless steel/Hastelloy C
- Filling Fluid: Silicon Oil/Fluorine Oil



4 AP2002 Pressure Transmitter

- Accuracy: $\pm 0.1\%$
- Range: 0 ~ 3-6kPa/0 ~ 4-40kPa/0 ~ 25-250kPa/0 ~ 250-3000kPa/0 ~ 1000-10000kPa/0 ~ 2000-21000kPa/0 ~ 4000-40000kPa/0 ~ 10-40 abs/0 ~ 25-250 abs/0~250-3000 abs
- Output: 4mA-20mADC/485 communication
- The supply voltage is 24V
- Isolate Diaphragm: 316LStainless steel/Hastelloy C
- Filling Fluid: Silicon Oil/Fluorine Oil



5 AP201 Diffused Silicon Pressure Sensor

- Accuracy: 0.5%FS
- Range: 40-10bar/ 0-16bar/ 0-25bar/
0-40bar/ 0-60bar/ 0-100bar/ 0-160bar/
0-250bar/ 0-400bar
- Longterm: 0.2%FS/year
- Working Temperature: $-25^{\circ}\text{C} \sim +120^{\circ}\text{C}$



6 AP202 Diffused Silicon Absolute Pressure Sensor

- Accuracy: $\pm 0.5\%$ FS (MIN) / $\pm 0.2\%$ FS (Typical)
/ $\pm 0.3\%$ FS (MAX)
- Range: -0.1Mpa-0MPa~ 0.01MPa-100MPa
- Longterm Stability: $\pm 0.3\%$ FS/year
- Output signal : 4mA~20mADC (2 wire) , 0 /
1V~5VDC (3 wire) , 485 Modulus



8 ASM295 HART Modem

- Built-in HART modem with built-in 250 ohm resistor
- Support 24V output, built-in DC-DC converter
- The modem can power the transmitter without an external power supply
- With power status indication, open status and communication status
- Support any HART instrument computer / APP



AP1001 Differential Pressure Transmitter

The AP1001 differential pressure transmitter is used to measure the differential pressure of different pressure points of a liquid or gas, and then convert it into a 4-20mA DC output with HART communication protocol

Standard Specification

(The adjustment of range is based on the standard zero, The diaphragm is stainless steel 316L and the filling fluid is silicon oil)

1. Performance Specification

Reference Accuracy of Adjusted Range:

$\pm 0.1\%$ (Including nonlinearity, hysteresis and repeatability)

Ambient Temperature Influence

The total amount of influence from -25°C to 65°C is:

$$\pm(0.15 \times \text{TD} + 0.1) \% \times \text{Span}$$

The total influences at -40°C to -25°C and 65°C to 85°C are:

$$\pm(0.2 \times \text{TD} + 0.1) \% \times \text{Span}$$

TD = maximum range / adjustment range

Over range Influence

$$\pm 0.075 \% \times \text{Span}$$

Stability

$$\pm 0.1 \% \times \text{Span} / \text{year}$$

Power supply Influence

$\pm 0.001\%$ / 10V (14~45V DC), (it can be almost ignored)



2. Function Specification

Span and Range

Span Code	Span kPa	Range kPa
B	1~6	-6~6
C	4~40	-40~40
D	25~250	-100~250
F	250~3000	-100~3000

Zero Setting

Zero and span can be adjusted to any value within the measurement range in the table, as long as: calibrated range \geq minimum range

Installation Location Influence

Transmitter mounting position deviation will produce a correctable zero offset. After zero adjustment, there is no range effect.

Output

2 wires type, 4 ~ 20mA DC output, with HART communication protocol

Output Signal Limit:

I_{min} = 3.9mA, I_{max} = 20.5mA

Alert Current

Under-report mode (minimum): 3.6mA

High-report mode (maximum): 21 mA

Responding Time

The damping constant of amplifier component is 0.1s and the time constant of the sensor is 0.2

to 2s, which depend on the sensor's range, turndown ratio, and fill fluid characteristics. The additional adjustable time constant is 0.1 to 60s.

Preheat Time:

< 15s

Ambient Temperature :

-40~85℃

-20~65℃ (with LCD backlit display)

Storage temperature / Transport temperature

-50~85℃

-25~85℃ (with LCD backlit display)

Medium Temperature

-30~125℃;

Pressure Limit

From vacuum to maximum working pressure.

3. Installation**Power and Load Conditions**

The power supply voltage

is 24V, $R \leq (U_s - 12V) / I_{max}$ kΩ

Where $I_{max} = 23$ mA

Maximum supply voltage: 45VDC

Minimum supply voltage: 14VDC

Electrical Connections

M20X1.5 cable sealing buckle, terminal block is suitable for 0.5~2.5mm² wire.

Process Connection:

1/4 NPT.

4. Physical Specifications**Material**

Diaphragm: stainless steel 316L, Hastelloy C

Process connection: stainless steel 304

Filling liquid: silicone oil

Transmitter housing: aluminum alloy, epoxy coated on the outside.

Nameplate: Stainless steel 304

Weight: about 3.0kg

Housing Protect Level

IP67

5. Model and Specification Selection

AP1001 -	AP1001 pressure transmitter
Code1	Accuracy
C	±0.1%
Code2	Range (when no migration) (kPa)
B	0~1-6
C	0~4-40
D	0~25-250
F	0~250-3000
Code3	Output
1	4mA-20mVdc/HART communication protocol
Code4	Isolate Diaphragm
S	316L Stainless Steel
H	Hastelloy C
Code5	Filling Fluid
1	Silicon Oil
2	Fluorine Oil
Code6	Rated Working Pressure
A	16MPa
B	40MPa
Code7	Process Flange
1	1/4NPT and M10 threaded holes, no relief
2	1/4NPT and M10 threaded holes, rear end relief valve
Code8	Wet sealing material
A	Nitrile rubber (NBR)
B	Fluororubber (FKM)
C	PTFE
Code9	Electrical Interface
1	M20×1.5 Female (with cable sealing head)
2	NPT1/2 Female
Code10	Mounting Bracket and Material
A	None
B	Carbon steel mounting bracket
C	Stainless steel mounting bracket
Code11	The bit number Location
1	None
2	Hanging stainless steel standard
Code12	Manual
A	Chinese
B	English

How to determine the order number:

Part 1

AP1001 - code 1 / code 2... code 12

Note: The actual code does not contain the symbol "/".

Part 2

XXX~XXX kPa (or other engineering units)
(factory calibration measurement range)

Part 3

Bit number (up to 16 characters) (when code 11
is selected 2)

AP1002 Pressure transmitter

The AP1002 pressure transmitter is used to measure the on-site pressure of a liquid or gas and then convert it to a 4-20 mA DC output with HART communication protocol.



Standard Specification

(The adjustment of range is based on the standard zero, The diaphragm is stainless steel 316L and the filling fluid is silicon oil)

1 Performance Specification

Reference Accuracy of Adjusted Range:

±0.1% (Including nonlinearity, hysteresis and repeatability)

Ambient Temperature Influence

The total amount of influence from -25℃ to 65℃ is:

$$\pm(0.15 \times TD + 0.1) \% \times \text{Span}$$

The total influences at -40℃ to -25℃ and 65℃ to 85℃ are:

$$\pm(0.2 \times TD + 0.1) \% \times \text{Span}$$

TD = maximum range/adjustment range

Over range Influence

$$\pm 0.075 \% \times \text{Span}$$

Stability

$$\pm 0.1 \% \times \text{Span} / \text{year}$$

Power Supply Influence

±0.001% /10V(14 ~ 45V DC), (it can be almost ignored)

2 Function Specification

Span and Range

Span Code	Span	Range
B	3~6 kPa	-6~6 kPa
C	4~40 kPa	-40~40 kPa
D	25~250 kPa	-100~250 kPa
F	0.25~3 MPa	-0.1~3 MPa
G	1~10 MPa	-0.1~10 MPa
H	2~21 MPa	-0.1~21 MPa
I	4~40 MPa	-0.1~40 MPa
L	10~40 kPa abs	0~40 kPa abs
M	25~250 kPa abs	0~250 kPa abs
O	0.25~3 MPa abs	0~3 MPa abs

Zero Setting

Zero and span can be adjusted to any value within the measurement range in the table, as long as: calibrated range ≥ minimum range

Installation Location Influence

Transmitter mounting position deviation will produce a correctable zero offset. After zero adjustment, there is no range effect.

Output

2-wire type, 4 to 20mA DC output, with HART communication protocol.

Output signal limit: I_{min}=3.9mA, I_{max}=20.5mA

Alert Current

Underreport mode (Min): 3.6mA

High-report mode (Max): 21 mA

Responding Time

The damping constant of amplifier component is 0.1s and the time constant of the sensor is 0.2 to 2s, which depend on the sensor's range, turndown ratio, and fill fluid characteristics. The additional adjustable time constant is 0.1 to 60s.

Preheat Time

< 15s

Ambient Temperature:

-40~85℃

-20~65℃ (with LCD backlit display)

Storage temperature / transport temperature

-50~85℃

-25~85℃ (with LCD backlit display)

Medium Temperature

-30~125℃;

Overload Limit

Span Code	B	C/L	D/M	F/O
Overload Limit MPa	0.2	1	4	15
Span Code	G	H	I	
Overload Limit MPa	20	50	50	

3. Installation**Power and Load Conditions**

Power supply voltage is 24V,

$R \leq (U_s - 12V) / I_{max}$ kΩ

Where $I_{max} = 23$ mA

Maximum supply voltage: 45VDC

Minimum supply voltage: 14VDC

Electrical Connections

M20X1.5 cable sealing buckle, terminal block is suitable for 0.5~2.5mm² wire.

Process Connections

1/2 NPT Female thread or M20 x 1.5 Male thread is optional.

4. Physical Specifications**Material**

Diaphragm: stainless steel 316L or Hastelloy C

Process connection: stainless steel 304

Filling liquid: silicone oil

Transmitter housing: aluminum alloy, epoxy coated on the outside.

Nameplate: Stainless steel 304

Weight: about 1.2kg

Housing Protect Level

IP67

5 Model and Specification Selection

AP1002-	AP1002 Pressure Transmitter
Code1	Accuracy
C	±0.1%
Code2	Range (when no migration) (kPa)
B	0~3-6
C	0~4-40
D	0~25-250
F	0~250-3000
G	0~1000-10000
H	0~2000-21000
I	0~4000-40000
L	0~10-40 abs
M	0~25-250 abs
N	0~250-3000 abs
Code3	Output
1	4mA-20mA DC/HART Communication
Code4	Isolate Diaphragm
S	316L Stainless Steel
H	Hastelloy C
Code5	Filling Fluid
1	Silicon Oil
2	Fluorine oil
Code6	Process Connection
A	1/2NPT Female Thread
B	M20×1.5 Male Thread
X	Customized
Code7	Electrical Interface
1	M20×1.5 Female thread (with cable sealing head)
2	NPT1/2 Female Thread
Code8	Mounting Bracket and Material
A	None
B	Carbon steel mounting bracket
C	Stainless steel mounting bracket
Code9	The Bit Number Location

1	None
2	Hanging stainless steel standard
Code10	Manual
A	Chinese
B	English

How to determine the order number:

part 1

AP1002- -code 1 / code 2... code 10

Note: The actual code does not contain the symbol "/".

part 2

XXX~XXX kPa (or other engineering units)
(factory calibration measurement range)

Part 3

Bit number (up to 16 characters) (when code 11
is selected 2)

AP2001 Differential Pressure Transmitter

AP2001 differential pressure transmitter is used to measure the differential pressure of different pressure points of a liquid or gas, and then convert it into a 4-20mA DC output with an optional 485 communication protocol.

Standard Specification

(The adjustment of range is based on the standard zero, The diaphragm is stainless steel 316L and the filling fluid is silicon oil)

1 Performance Specification

Reference Accuracy of Adjusted Range:

$\pm 0.1\%$ (Including nonlinearity, hysteresis and repeatability)

Ambient Temperature Influence

The total amount of influence from -25°C to 65°C is:

$$\pm(0.15 \times \text{TD} + 0.1)\% \times \text{Span}$$

The total influences at -40°C to -25°C and 65°C to 85°C are:

$$\pm(0.2 \times \text{TD} + 0.1)\% \times \text{Span}$$

TD = maximum range/adjustment range

Over range Influence

$$\pm 0.075\% \times \text{Span}$$

Stability

$$\pm 0.1\% \times \text{Span/year}$$

Power Supply Influence

$\pm 0.001\% / 10\text{V}$ ($14 \sim 45\text{V DC}$), (it can be almost ignored)



2 Function Specification

Span and Range

Span Code	Span kPa	Range kPa
B	1~6	-6~6
C	4~40	-40~40
D	25~250	-100~250
F	250~3000	-100~3000

Zero Setting

Zero and span can be adjusted to any value within the measurement range in the table, as long as: calibrated range \geq minimum range

Install Location Influence

Transmitter mounting location deviation will cause a correctable zero offset. After zero adjustment, there won't be a range influence.

Output

2 wires type, 4~20mA DC output, 485 communication is available.

Output Signal Limit:

I_{min}=3.9mA, I_{max}=20.5mA

Alert Current

Low-report mode (Min): 3.6mA

High-report mode (Max): 21 mA

Responding Time

The damping constant of amplifier component is 0.1s and the time constant of the sensor is 0.2

to 2s, which depend on the sensor's range, turndown ratio, and fill fluid characteristics. The additional adjustable time constant is 0.1 to 60s.

Preheat Time:

< 15s

Ambient Temperature

-40~85℃

-20~65℃ (with LCD backlit display)

Storage temperature / Transport temperature

-50~85℃

-25~85℃ (with LCD backlit display)

Medium Temperature

-30~125℃;

Pressure Limit

From vacuum to maximum working pressure.

3 Installation

Power and Load Conditions

The power supply voltage

is 24V, $R \leq (U_s - 12V) / I_{max}$ kΩ

Where $I_{max} = 23$ mA

Maximum supply voltage: 45VDC

Minimum supply voltage: 14VDC

Electrical Connections

M20X1.5 cable sealing buckle, terminal block is suitable for 0.5~2.5mm² wire.

Process Connection

1/4 NPT.

4 Physical Specifications

Material

Diaphragm: stainless steel 316L, Hastelloy C

Process connection: stainless steel 304

Filling liquid: silicone oil

Transmitter housing: aluminum alloy, epoxy coated on the outside.

Nameplate: Stainless steel 304

Weight: about 3.0kg

Housing Protect Level

IP67

5 Model and Specification Selection

AP2001-	AP2001 Differential Pressure Transmitter
Code 1	Accuracy
C	±0.1%
Code 2	Range (when no migration) (kPa)
B	0~1-6
C	0~4-40
D	0~25-250
F	0~250-3000
Code 3	Output
1	4mA-20mADC
2	485 Communication
3	4mA-20mADC/485 Communication
Code 4	Isolate Diaphragm
S	316L Stainless Steel
H	Hastelloy C
Code 5	Filling Fluid
1	Silicon Oil
2	Fluorine Oil
Code 6	Rated Working Pressure
A	16MPa
B	40MPa
Code 7	Process Flange
1	1/4NPT and M10 threaded holes, no relief
2	1/4NPT and M10 threaded holes, rear end relief valve
Code 8	Wet sealing material
A	Nitrile rubber (NBR)
B	Fluorine rubber (FKM)
C	PTFE
Code 9	Electrical Interface
1	M20×1.5 Female thread (with cable sealing head)
2	NPT1/2 Female
Code 10	Mounting Bracket and Material
A	None
B	Carbon steel mounting bracket
C	Stainless steel mounting bracket
Code 11	The bit number Location
1	None
2	Hanging stainless steel standard
Code 12	Manual
A	Chinese
B	English

How to determine the order number:

Part 1

AP2001 - code 1 / code 2... code 12

Note: The actual code does not contain the symbol "/".

Part 2

XXX~XXX kPa (or other engineering units)

(factory calibration measurement range)

Part 3

Bit number (up to 16 characters) (when code 11 is selected 2)

AP2002 Pressure Transmitter

The AP2002 pressure transmitter is used to measure the on-site pressure of a liquid or gas and then convert it to a 4-20 mADC output with an optional 485 communication protocol.



Standard Specification

(The adjustment of range is based on the standard zero, The diaphragm is stainless steel 316L and the filling fluid is silicon oil)

1. Performance Specification

Reference Accuracy of Adjusted Range:

$\pm 0.1\%$ (Including nonlinearity, hysteresis and repeatability)

Ambient Temperature Influence

The total amount of influence from -25°C to 65°C is:

$$\pm(0.15 \times \text{TD} + 0.1)\% \times \text{Span}$$

The total influences at -40°C to -25°C and 65°C to 85°C are:

$$\pm(0.2 \times \text{TD} + 0.1)\% \times \text{Span}$$

TD = maximum range/adjustment range

Over range Influence

$$\pm 0.075\% \times \text{Span}$$

Stability

$$\pm 0.1\% \times \text{Span}/\text{year}$$

Power supply Influence

$\pm 0.001\%$ /10V(14 ~ 45V DC), (it can be almost ignored)

2. Function Specification

Span and Range

Span Code	Span	Range
B	3~6 kPa	-6~6 kPa
C	4~40 kPa	-40~40 kPa
D	25~250 kPa	-100~250 kPa
F	0.25~3 MPa	-0.1~3 MPa
G	1~10 MPa	-0.1~10 MPa
H	2~21 MPa	-0.1~21 MPa
I	4~40 MPa	-0.1~40 MPa
L	10~40 kPa abs	0~40 kPa abs
M	25~250 kPa abs	0~250 kPa abs
O	0.25~3 MPa abs	0~3 MPa abs

Zero Setting

Zero and span can be adjusted to any value within the measurement range in the table, as long as: calibrated range \geq minimum range

Installation Location Influence

Transmitter mounting position deviation will produce a correctable zero offset. After zero adjustment, there is no range effect.

Output

2-wire type, 4 to 20mADC output, 485 communication is available.

Output signal limit: $I_{\min} = 3.9\text{mA}$, $I_{\max} = 20.5\text{mA}$

Alert Current

Underreport mode (minimum): 3.6mA

High-report mode (maximum): 21mA

Responding Time

The damping constant of amplifier component is 0.1s and the time constant of the sensor is 0.2 to 2s, which depend on the sensor's range, turndown ratio, and fill fluid characteristics. The additional adjustable time constant is 0.1 to 60s.

Preheat Time

< 15s

Ambient Temperature

-40~85℃

-20~65℃(with LCD display)

Storage temperature / Transport temperature

-50~85℃

-25~85℃(with LCD display)

Medium Temperature

-30~125℃;

Overload Limit

Span Code	B	C/L	D/M	F/O
Overload Limit MPa	0.2	1	4	15
Span Code	G	H	I	
Overload Limit MPa	20	50	50	

3.Installation**Power and Load Conditions**

The supply voltage is 24V,

$R \leq (U_s - 12V) / I_{max}$ kΩ

Where $I_{max} = 23$ mA

Maximum supply voltage: 45VDC

Minimum supply voltage: 14VDC

Electrical Connections

M20X1.5 cable sealing buckle, terminal block is suitable for 0.5~2.5mm 2 wire.

Process Connection

1/2 NPT female thread or M20 x 1.5 male thread is optional.

4.Physical Specifications**Material**

Diaphragm: stainless steel 316L, Hastelloy C

Process connection: stainless steel 304

Filling liquid: silicone oil

Transmitter housing: aluminum alloy, epoxy coated on the outside.

Nameplate: Stainless steel 304

Weight: about 1.2kg

Housing Protect Level

IP67

5.Model and Specification Selection

AP2002-	AP2002 Pressure Transmitter
Code1	Accuracy
C	±0.1%
Code2	Range (when no migration) (kPa)
B	0~3-6
C	0~4-40
D	0~25-250
F	0~250-3000
G	0~1000-10000
H	0~2000-21000
I	0~4000-40000
L	0~10-40 abs
M	0~25-250 abs
N	0~250-3000 abs
Code3	Output
1	4mA-20mADC
2	485 Communication
3	4mA-20mADC/485 Communication
Code4	Isolate Diaphragm
S	316L Stainless Steel
H	Hastelloy C
Code5	Filling Fluid
1	Silicon Oil
2	Fluorine oil
Code6	Process Connection
A	1/2NPT Female Thread
B	M20×1.5 Male Thread
X	Customized
Code7	Electrical Interface
1	M20×1.5 Female thread (with cable sealing head)
2	NPT1/2 Female Thread
Code 8	Mounting Bracket and Material
A	None

B	Carbon steel mounting bracket
C	Stainless steel mounting bracket
Code9	The bit number Location
1	None
2	Hanging stainless steel standard
Code10	Manual
A	Chinese
B	English

How to determine the order number:

Part 1

AP2002 - code 1 / code 2... code 10

Note: The actual code does not contain the symbol "/".

Part 2

XXX~XXX kPa (or other engineering units)
(factory calibration measurement range)

Part 3

Bit number (up to 16 characters) (when code 11
is selected 2)

AP201 Diffused Silicon Pressure Sensor

The AP201 diffused silicon pressure sensor is a small size and high-stability pressure transmitter. It uses high stability and high reliability piezoresistive pressure sensor and high performance transmitter dedicated electrical circuit. The overall performance is stable and reliable. AP201 has multiple pressure ranges and signal outputs, multiple connectors and pressure connectors.

1. Product Features

1. The sensor is all stainless steel design, small size, light weight and easy to install;
2. The sensor is a diffused silicon pressure sensor with stainless steel 316L isolated diaphragm;
3. After temperature compensation and aging screening, the sensor performance is stable and reliable
4. The circuit has multiple protections and high reliability to meet EMC requirements;
5. The Sensor is high precision and high stability.

2. Applications Field

1. Oil, Chemical Industry, Electrical Power;
2. Urban water supplying, Geology, Hydrological exploration;
3. Fluid pressure detection and control industries

3. Performance Specifications

Accuracy

$\pm 0.5\%FS$ (Max) $\pm 0.25\%FS$ (Min)

Zero Temperature Modulus

$0.03\%FS/^{\circ}C$ ($\leq 100kPa$) $0.02\%FS/^{\circ}C$ ($100kPa$)



Full Temperature Modulus

$0.03\%FS/^{\circ}C$ ($\leq 100kPa$) $0.02\%FS/^{\circ}C$ ($100kPa$)

Longterm Stability

$\pm 0.3\%FS$ year(Max)

4. Ambient Conditions

Medium Suitability

Various medium that are non-corrosive to stainless steel

Compensated Temperature

$-10^{\circ}C \sim 80^{\circ}C$

Working Temperature

$-30^{\circ}C \sim +80^{\circ}C$

Storage Temperature

$-40^{\circ}C \sim 125^{\circ}C$

5. Pressure Specifications

Range

$0MPa \sim 10MPa$ $0 \sim 40MPa$

Overload

Double full range

Pressure Type

Gauge pressure, Absolute pressure, Sealed gauge pressure

6. Electrical Specifications

Output Type

Current Type

Power supply: $5 \sim 32V$ DC,

Output signal: $4mA \sim 20mA$ DC (two-wire system),

Load resistance: $\leq (U-9)/0.0$

Voltage type

Power supply: 5V DC,

Output Signal: 0.5V~4.5V/0~5V DC (three-wire system), Load resistance: $\geq 10k$

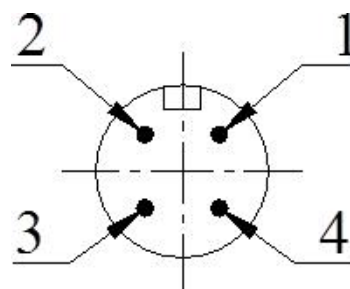
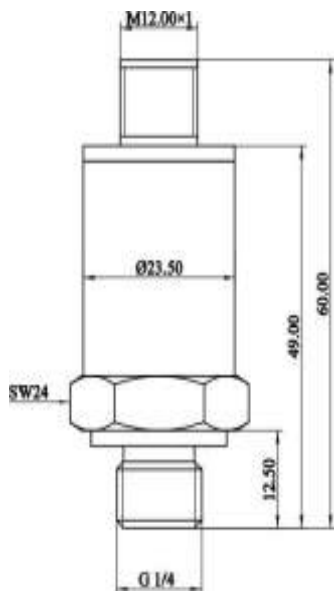
Insulation resistance: 100M Ω , 100V DC

7. Structural parameters

Housing: stainless steel

Protection level : IP 65

8.External Structure (Unit:mm)



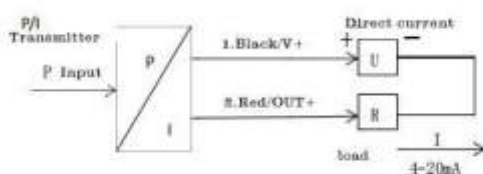
Electrical Connection M12*1

9.Electrical Connections

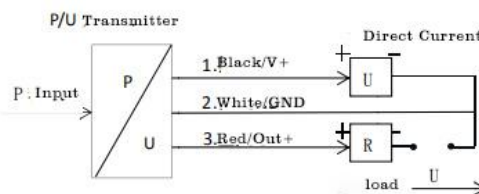
Pin	2 Wires Type	3 Wires Type
1	Power + :+V	Power + :+V
2	Signal: +OUT	Public side:GND
3	Empty	Signal: +OUT
4	Ground	Ground

Cable Color	2 Wires Type	3 Wires Type
Black	Power + :+V	Power + :+V
Red	Signal: +OUT	Public side:GND
White	Empty	Signal: +OUT
Yellow	Ground	Ground

The two-wire 4-20mA DC output electrical connection method is shown as below:



Three-wire system 0.5V~4.5V/0~5V DC output electrical connection method as below:



10. Model and Specification Selection

AP201-	AP201 Diffused Silicon Pressure Sensor
Code1	Range
[0~X] bar	Measuring range: 0MPa~10 Pa---40Mpa X: Actual measurement range
Code2	Output
E	4mA-20mADC
J	0V~5V DC
K	0.5V~4.5V DC
Code3	Structural Materials
22	Interface: Stainless steel 316L Housing: Stainless steel
24	Interface: Stainless steel 316L Housing: Stainless steel 316L
Code4	Additional Functions
B2	Connector output
B4	Cable connection output
C1	M20*1.5 internal/external thread
C2	G1/4 Female/Male Thread
C3	G1/2 Female/Male Thread

Selection of complete code (Example):

AP201 - [0~40] MPa - E - 22 - B2 C2 G

AP202 Diffused Silicon Absolute Pressure Sensor

AP202 diffused silicon absolute pressure sensor is a piezoresistive pressure transmitter that can be calibrated for zero and full-range output. It uses high-stability, high-reliability piezoresistive pressure sensors and high-performance specific circuits for the transmitter. Its overall performance is stable and reliable.

The products can be widely used in the detection and control of fluid pressure in petroleum, chemical industry, electric power, hydrology, geology and other industries.

1.Product Features

- 1.The sensor had reliable performance and easy to be used safely.
- 2.The sensor has short circuit protection and reverse polarity protection.
- 3.The sensor can be used to measure gauge pressure, absolute pressure and sealed referring pressure.
- 4.The sensor fits the design requirement of National GB3836.4 standard for Exia II CT6

2.Application Fields

- 1.Oil, Chemical Industry, Electrical Power;
- 2.Urban water supplying, Geology, Hydrological exploration;
3. Equipment matching, hydraulic and other industries

3.Performance Specifications

Accuracy

$\pm 0.5\%FS(\text{Max}) \pm 0.25\%FS(\text{Typical})$



Zero Temperature Modulus

$0.03\%FS/^{\circ}C(\leq 100kPa) 0.02\%FS/^{\circ}C(>100kPa)$

Full Temperature Modulus

$0.03\%FS/^{\circ}C(\leq 100kPa) 0.02\%FS/^{\circ}C(>100kPa)$

Longterm Stability

$\pm 0.3\%FS \text{ year}(\text{Max})$

4.Ambient Conditions

Medium Measuring

Various fluids that are non-corrosive to 316L stainless steel and fluorine rubber

Compensated Temperature

$-10^{\circ}C \sim 80^{\circ}C$

Working Temperature

$-30^{\circ}C \sim +80^{\circ}C$

Storage Temperature

$-40^{\circ}C \sim 125^{\circ}C$

5.Pressure Specifications

Range

$-0.1MPa \sim 0MPa \sim 0.01 MPa \sim 100MPa$

Overload

Double full range pressure or 110MPa
(Choose the smaller one)

Pressure Type

Gauge Pressure, Absolute Pressure and Sealed gauge pressure

6. Electrical Modulus

Output Type

Current Type

Power supply: 9~30V DC,

Output signal: 4mA~20mA DC (2 wires type),

Load resistance: $\leq (U-9)/0.02$

Voltage type

Power supply: 12~30V DC,

Output signal: 0/1V~5/10V DC (3 wires type),

Load resistance: $\geq 10k$

Insulation resistance: 100M Ω , 100V DC

7. Structural Parameters

Housing: Stainless steel

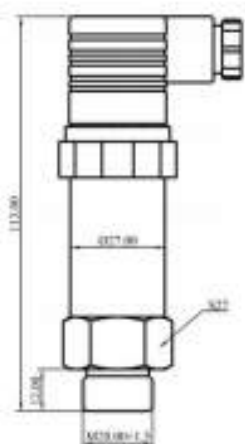
Sensor: 316L stainless steel

Seal: Fluorine Rubber

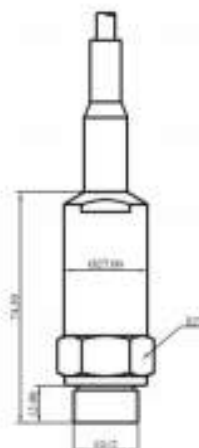
Cable: \varnothing 7.5mm polyethylene special cable

Protection level : IP 65(plug-in type) IP68 (cable type)

8. External Structure (Unit:mm)



Hirschmann Type



Cable Type

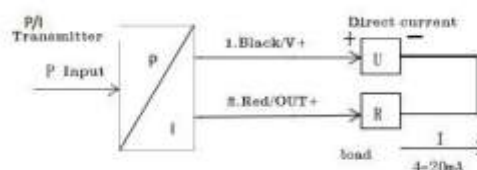
9. Electrical Connection

Plug-in pin definitions and cable colors are defined as follows:

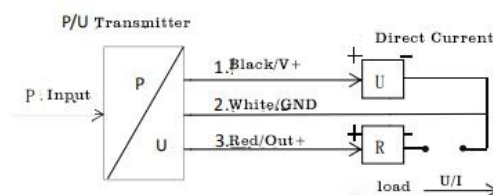
Pin	2 Wires Type	3 Wires Type
1	Power + :+V	Power + :+V
2	Signal: +OUT	Public side:GND
3	Empty	Signal: +OUT

Cable Color	2 Wires Type	3 Wires Type
Black	Power + :+V	Power + :+V
Red	Signal: +OUT	Public side:GND
White	Empty	Signal: +OUT

2 wires type 4-20mADC output electrical connection method is shown as below:



3 wires type 0.5V~4.5/0~5V DC output electrical connection



10. Model and Specification Selection

AP202-	AP202 Diffused Silicon Absolute Pressure Sensor
Code1	Range
[0~X] kPa or MPa	Measuring range: -0.1MPa---0MPa ~ 0.01 MPa---100MPa X: Actual measurement range
Code2	Output
E	4mA-20mADC
F	1V~5V DC
J	0V~5V DC
V	0V~10V DC
Code3	Structure Material
22	Isolated diaphragm: stainless steel 316L Connector: stainless steel 316L housing: stainless steel
24	Isolation diaphragm: stainless steel 316L connector: stainless steel 316L housing: stainless steel 316L
Code4	Additional Functions
B1	Hirschmann Connect Output
B2	Cable Connect Output
PC3	G1/2 Male thread pressure connector with flush film type
PC5	M20x1.5 Male thread pressure connector with flush film type
C3	G1/2 Female/Male thread
C5	M20×1.5 Male thread pressure connector
G	Gauge Pressure Type
A	Absolute Pressure Type
S	Sealed Gauge Pressure

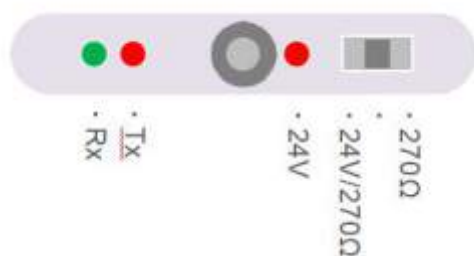
Selection of complete code (Example):

AP202- [0~100] kPa - E - 22 - B₁ C₅ G

RSM295 HART Modem

1.Panel

Top



Rx LED

Flash: Receiving data from transmitter
Solid: Abnormal, refer to "FAQ"

Tx LED

Flash: Sending data to transmitter
Solid: Abnormal, refer to "FAQ"

24V LED

Solid: Outputting 24V DC

Switch

Left: Enable 24V DC output and built-in resistor
Middle: Disable 24V and built-in resistor
Right: Disable 24V, enable built-in resistor

Bottom



2.Connection

Type I, Use the built-in power supply.

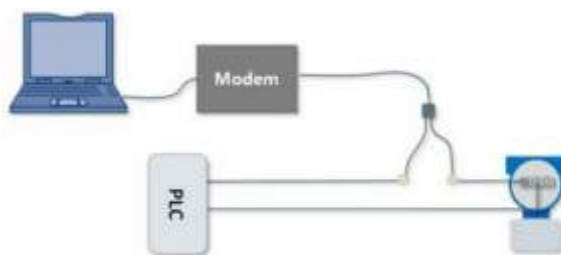


Toggle switch to "24V/270Ω" position.

Pay attention to the positive and negative pole hooks.

Please do not use Modem to the power supply 4-Wire transmitter.

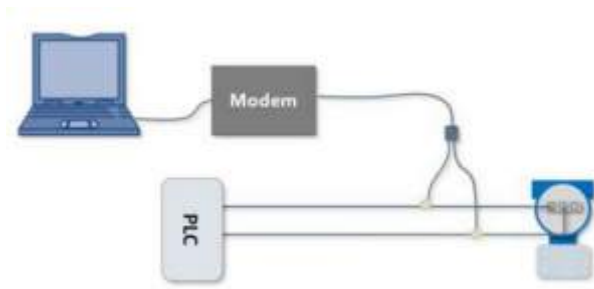
Type II, wire resistance < 250Ω



Connect in loop in series, Polarity insensitive

Toggle switch to right (270Ω) position

Type III, Field power supply, Wire resistance > 250Ω.



Connect modem to transmitter power terminals,
Polarity insensitive

Toggle switch to middle position

3. Check COM No. of the Modem Install Driver

Check your system type firstly as below:

"Start" -> Right-click "Computer" ->

Click "Properties" -> "System"

Find USB HART Modem driver in the CD,

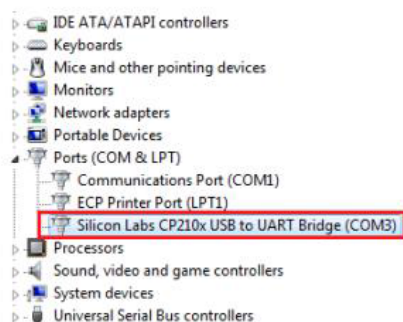
if your system is X64 Edition,

install CP210xVCPInstaller_x64.exe,

otherwise install CP210xVCPInstaller_x86.exe.

Check COM No.

Click "Start" -> Right-click "Computer" ->
Right-click "Manage" -> Click "Device Manager" ->
Double-click "Ports (COM & LPT)", The driver
which is labeled begin with "Silicon Labs" is the
USB HART Modem driver, Port No. is COM3 in
this example.



4. Android App (RSM295 Only)

Step1: Scan QR code or input URL on the product shell to download app.

Step2: Use USB OTG line to connect android phone and modem.

Step3: Click "Download License" button on App to download license.



5. FAQ

24V LED off when start

- For security, modem will not keep 24V DC outputting after reset even though the toggle switch is at "24V/270Ω" position.
- Please reset toggle switch.

Scan no transmitter

- If the transmitter LCD does not light up, Please check the connections.
 - Misuse built-in resistor, Please check resistor toggle switch.
 - Restart computer after driver installation.
- HART software choose the right COM port.
Contact us.

Instrument Changes the World

Technology Leads the Future



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