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SENSOR

All-instruments International Trading(Shanghai) Co.,Ltd

PRODUCT OVERVIEW

1 AC1001 Digital Differential Pressure Sensor

- Nonlinear Error: ±0.1FS
- Zero Temperature Modulus: ±0.1FS / 10K
- Span Temperature Modulus: ±0.1FS / 10K
- Static pressure effect: ±0.1%FS / 10MPa ±0.1FS / 1MPa (When the static pressure level is 1)

2 AC1002 Digital Pressure Sensor

- Pressure lag: Typical Value: ±0.03%FS, Maximum Value: ±0.05%FS
- Longterm Drift: ±0.1%FS /year
- Voltage Supply: 3.3V / 5V
- Medium Temperature: -40℃ ~ + 100℃
- Ambient Temperature: -40℃ ~ + 85℃

3 RC1001 High Accuracy Differential Pressure Sensor

- Voltage Supply: Constant voltage / constant current
- Working Temperature: -40℃ ~ + 85℃
- Medium Temperature: -50℃ ~ + 125℃
- Output voltage: 60~140mV
- Zero Temperature Influence: ±0.05%F.S./℃
- Full Span Temperature Influence: -0.2℃ ±0.03%F.S./℃
- Longterm Drift: <±0.05%F.S/year

4 RC1002/RC1003 High Accuracy Gauge Pressure Absolute Pressure Sensor

- Voltage Supply: Constant voltage / constant current
- Diaphragm Materia: 316L/Hastelloy C
- Working Temperature: -40℃ ~ + 85℃
- Medium Temperature: -50℃ ~ + 125℃
- Output Voltage: 60~140mV
- Longterm Drift: <±0.05%F.S/year
- Connection Thread: M56×1.5/M45×1.5/Customized

5 AC1003 General Diffused Silicon Pressure Sensor

- Measure Range: -100kPa…0kPa～20kPa…70MPa
- Imported chips、 laser trimming
- All stainless steel 316L material， Hastelloy C, titanium, tantal and other materials for special applications.
- Working Temperature： -25℃～＋120℃

6 AC1004 High Stability Diffused Silicon Pressure Sensor

- Measure Range: -100kPa…0kPa～10kPa…100MPa
- Wide Temperature Area Compensation:-10℃～+80℃
- Imported chips、 laser trimming
- All stainless steel 316L material， universal mounting size: ϕ 19mm*11.5mm

7 AC1005 Capacitive Pressure Sensor

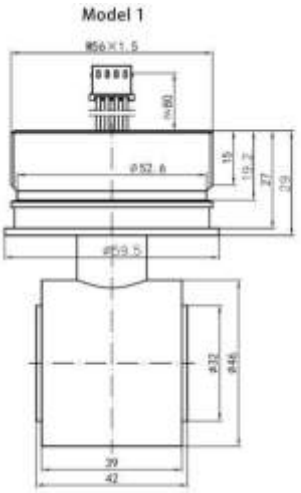
- Measure Range : Differential Pressure： 200Pa~10MPa
  Gauge Pressure : 200Pa~10MPa
  Absolute Pressure : kPa~10MPa
- Output Signal： 4~20mA,4~20mA+HART
- Accuracy： 0.2%F.S.
- Application Fields: oil chemistry,chemcials,electrical power,steel and cement fields.

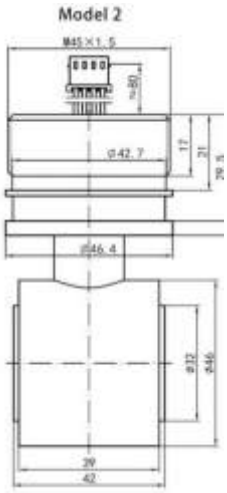
8 AC1006 Capacitive pressure sensor

- Measure Range : Gauge Pressure : 200Pa~10MPa
  Absolute Pressure : 6kPa~10MPa
- Output Signal： 4~20mA,4~20mA+HART
- Accuracy： 0.2%F.S.
- Application Fields: oil chemistry,chemcials,electrical power,steel and cement fields.

AC1001 Digital Differential Pressure Sensor

1.Connector Size





2.Model Selection

Items	Options	Selection code AC1001-
Measure Range	-6kPa～6kPa	B
	-40kPa～40kPa	C
	-250kPa～250kPa	D
	-3MPa～3MPa	F
Internal Absolute Pressure Sensor	None	0
Rated Working Pressure	0.2MPa	0
	16MPa	1
	40MPa	3
Diaphragm Material	316L	S
	HASC	H
	Customized	X
Filling Fluid	Silicon Oil	S
	Fluorine Oil	F
Electronic cavity interface type	M56x1.5（Model1）	A
	M45x1.5（Model2）	B

Note: If a code is a non-standard item, the bit code can be represented by X or Y and gives a description of X or Y.

3.Technical Specifications

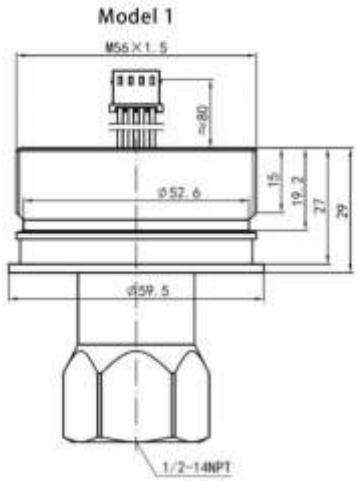
Items	Minimum Value	Typical Value	Maximum Value	Note
Nonlinear Error	±0.05%FS	±0.075%FS	±0.1%FS	
Zero Temperature Modulus	±0.05%FS/10K	±0.075%FS/10K	±0.1%FS/10K	-20℃-+70℃
Span Temperature Modulus	±0.05%FS/10K	±0.075%FS/10K	±0.1%FS/10K	-20℃-+70℃
Temperature Lag	±0.05%FS	±0.075%FS	±0.1%FS	
Temperature Influence Amount	±0.075%FS	±0.1%FS	±0.15%FS	-20℃-+70℃
Pressure Lag		±0.03%FS	±0.05%FS	
Longterm Drift		±0.1%FS/year		
Voltage Supply		3.3V/5V		
Medium Temperature		-40℃-+100℃		
Ambient Temperature		-40℃-+85℃		
Standard Output Signal	3byte(s), the highest sign bit, 2's complement (digital) digital signal			

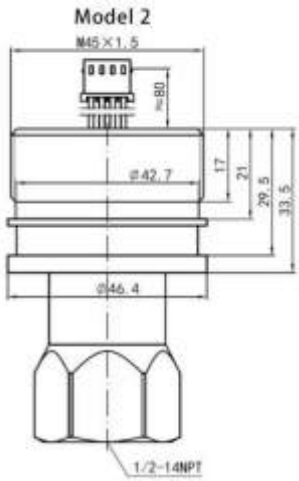
4.Signal Line Definition

Color	Definition	Description
Red	$+V_{Supply}$	Power +
Black	$-V_{Supply}$	Power -
Yellow	SDA	I2C/SPI Data Line
Blue	CS	I2C/SPI Mode Select： SPI mode when it is low level； I2C mode when it is high level
Brown	SCLK	I2C/SPI Clock Signal
Green	SOUT	SPI Mode Data Output
White	None	

AC1002 Digital Pressure Sensor

1.Connector Size





2.Model Selection

Item	Options	Selection code AC1002-
Measure Range	-6kPa～6kPa	B
	-40kPa～40kPa	C
	-100kPa～250kPa	D
	-0.1MPa～3MPa	F
	-0.1MPa～10MPa	G
	-0.1MPa～21MPa	H
	-0.1MPa～40MPa	I
	-0.1MPa～60MPa	J
	0kPa～40kPa abs	L
	0kPa～250kPa abs	M
	0kPa～3MPa abs	O
Process Connection	1/2-14NPT	1
	M20×1.5 M	3
	Customized	X
Isolate Diaphragm	316L	1
	HASC	2
	Customized	9
Filling Fluid	Silicon Oil	S
	Fluorine Oil	F
Electronic cavity interface type	M56x1.5（Model1）	A
	M45x1.5（Model2）	B

3.Technical Specifications

Items	Minimum Value	Typical Value	Maximum Value	Note
Zero Temperature Modulus	±0.05%FS	±0.075%FS	±0.1%FS	
Span Temperature Modulus	±0.05%FS/10K	±0.075%FS/10K	±0.1%FS/10K	-20℃-+70℃
Temperature Lag	±0.05%FS/10K	±0.075%FS/10K	±0.1%FS/10K	-20℃-+70℃
Temperature Influence Amount	±0.05%FS	±0.075%FS	±0.1%FS	
Pressure Lag	±0.075%FS	±0.1%FS	±0.15%FS	-20℃-+70℃
Longterm Drift		±0.03%FS	±0.05%FS	
Voltage Supply		±0.1%FS/year		
Medium Temperature		3.3V/5V		
Ambient Temperature		-40℃-+100℃		
Standard Output Signal		-40℃-+85℃		
Zero Temperature Modulus	3byte(s), the highest sign bit, 2's complement (digital) digital signal			

Overload Ability:

Span Code	B	C/L	D/M	F/O	G	H	I	J
Overload Ability MPa	0.3	1	4	15	20	60	60	70

Signal Line Definition

Color	Definition	Description
Red	$+V_{Supply}$	Power +
Black	$-V_{Supply}$	Power -
Yellow	SDA	I2C/SPI Data Line
Blue	CS	I2C/SPI Mode Select: SPI mode when it is low level; I2C mode when it is high level
Brown	SCLK	I2C/SPI Clock Signal
Green	SOUT	SPI Mode Data Output
White	None	

RC1001 High Accuracy Differential Pressure Sensor

1.Technical Advantage

·World-advanced high accuracy silicon technology in the core.

·Patented Double overload protection diaphragm design,

One-way highest overpressure up to 40MPa.

·Outstanding static pressure performance, error≤±0.1%/10MPa.

·The highest Accuracy can be ±0.05% Platinum level.

·The static pressure sensor and temperature sensor can be selected.

·The sensor is weld-sealed structure stainless steel 316L and silicon oil filled.

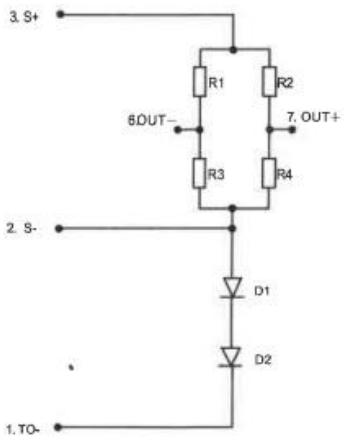
2.Applications

The core components of differential pressure sensor.

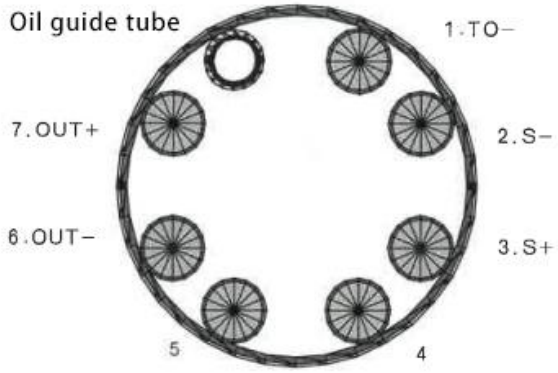
3.Technical Specifications

Power Supply	Constant Current/Constant Voltage
Working Temperature	-40℃-＋85℃
Medium Temperature	-50℃-＋125℃
Voltage Supply	60-140mV
Zero Temperature Influence	±0.05% F.S,/℃
Full Span Temperature Influence	-0,2±0.03%F.S./℃
Temperature Lag	< ±0.05% F.S.
Pressure Lag	< ±0.025% F.S.
Longterm Drift	< ±0.05% F.S./year
Nonlinear Error	< ±0.1% F.S.(Typical)
Static Pressure Influence	< ±0.1% /10MPa
Diaphragm Material	316L/Hastelloy C /316L Gold Plated /Tantal/316L FEP Plated
Connector Thread	M56X1.5/ M45X1.5/ Customized

4.Electrical Connection



Electrical Principle



Pin Definition

5.Model Selection

RC1001-	RC1001 High Accuracy Differential Pressure Sensor
Code1	**Span**
A	0-100Pa ∽1kPa
B	0-200Pa ∽6kPa
C	0-400Pa ∽40kPa
D	0-2.5kPa ∽250kPa
E	0—20kPa ∽2MPa
Code2	**Static Pressure Sensor**
0	None
1	40MPa
2	10MPa, If rated working pressure is 7MPa,7MPa static pressure sensor
3	250kPa,when static pressure sensor choose 0
Code3	**Rated Working Pressure**
0	0.2MPa Only Support Span A
1	16MPa
2	25MPa
3	40MPa
Code5	**Diaphragm Material**
S	Stainless Steel 316L
H	Hastelloy C
G	Stainless Steel 316L Gold Plated
F	Stainless Steel 316L Plating FEP
T	Tantal

RC1002/3 High Accuracy Gauge Pressure/Absolute Pressure Sensor

1. Technical Advantage

·World advanced high accuracy silicon technology in the core.

·The highest Accuracy can be ±0.05% Platinum level.

·Patented double overload protection diaphragm design,one-way overpressure up to 1166 times full span.

·Sealed temperature sensor can be selected

·RC1002 Gauge Pressure Sensor supports measuring negative pressure.

·Weld-sealed structure stainless steel 316L and silicon oil filled.

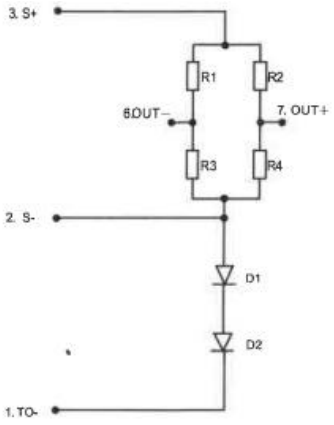
2. Applications

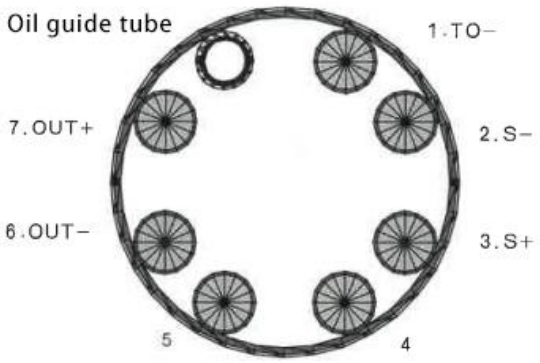
The core components for gauge/absolute pressure sensor.

3. Technical Specifications

Power Supply	Constant Current/Constant Voltage
Working Temperature	-40℃-＋85℃
Medium Temperature	-50℃-＋125℃
Output Voltage	60-140mV
Zero Temperature Influence	±0.05% F.S,/℃
Full Span Temperature Influence	-0,2±0.03%F.S./℃
Temperature Lag	< ±0.05% F.S.
Pressure Lag	< ±0.025% F.S.
Longterm Drift	< ±0.05% F.S./year
Nonlinear error	< ±0.05% F.S.
Diaphragm Material	316L/Hastelloy C
Connection Thread	M56X1.5/ M45X1.5/Customized

4.Electrical Connection





5.Model Selection

RC1002/ 3-	**RC1002/3 High Accuracy Gauge/Absolute**
Code1	**Span**
Gauge Pressure	RC1002
B	0-0.6Pa ∽6kPa
C	0-400Pa ∽40kPa
D	0-2.5kPa ∽250kPa
F	0—30kPa ∽3MPa
G	0-0.1MPa∽10MPa
H	0-0.21MPa∽21MPa
I	0-0.4MPa∽40MPa
J	0-0.6MPa∽60MPa
R	0-0.6kPa∽6kPa(Overload Protect to
S	0-400Pa∽40kPa(Overload Protect to
Absolute Pressure	RC1003
L	0-2kPa∽40kPa
M	0-2.5kPa ∽250kPa
O	0—30kPa ∽3MPa
T	0-2KPa∽40kPa(Overload Protect to
Code2	**Process Connection**
1	1/2-14NPT Female Thread
2	1/2-14NPT Male Thread
3	M20×1.5 Male Thread
4	G1/2 Male Thread
5	KF16 Vacuum Connector
6	DN25 Sanitary Connector
7	DN40 Sanitary Connector
Code5	**Diaphragm Material**
S	Stainless Steel 316L
H	Hastelloy C

AC1003 General Diffused Silicon Pressure Sensor

The shape, assembly size and sealing method of AC1003 universal metal membrane isolation pressure sensor core are consistent with similar foreign mainstream products and can be directly replaced. Each product is manufactured with strict aging, screening and testing procedures,which ensures ensure the superior quality and reliability of each product.

1.Product Feature

(1)Measure Range: -100kPa…0kPa ～ 20kPa…70MPa
(2)The sensor is with imported chips, laser trimming
(3)The sensor diaphragm material includes all stainless steel 316L material, Hastelloy C, titanium, tantal and other materials for special applications.
(4)The general size of the sensor is φ19mm×15mm

2.Application

(1)Industrial Process Control
(2)Gas, liquid and vapor pressure detection
(3)Level Measuring

3.Structure Feature

Diaphragm Material
316L Stainless Steel

Housing Material
316L Stainless Steel

Pin Lead
Gold-plated Kovar/100mm silicone rubber lead

Back Pressure Tube
316L Stainless Steel(Only Gauge Pressure and Absolute Pressure)

Sealing Ring
NBR

4.Electrical Feature

Supply Power
≤2.0mADC

Input Resistance
2.8kΩ~5 kΩ

Output Resistance
2.8kΩ~5 kΩ

Responding Time
(10%～90%)：<1ms

Insulation Resistance
100MΩ, 100V DC

Allowed Overpressure
Double full scale or 110MPa (min),
of which 0B/0A/02 is over 5 times.

5.Ambient Conditions

Medium suitability
The sensor is available for various fluids that are non-corrosive to 316L stainless steel and nitrile rubber.

Vibration

No change at 10gRMS, (20~2000)Hz

Impact

100g, 11ms

Location impact

Deviation from 90° in any direction, zero change ≤±0.05% FS

6.Basic Conditions

Ambient Temperature

(25±1)℃

Moisture

(50%±10%)RH

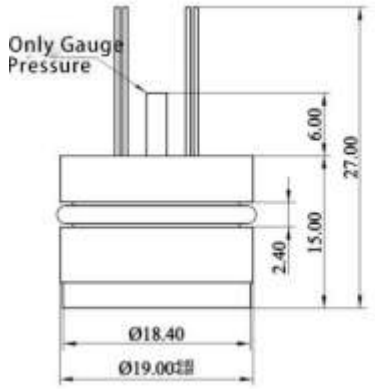
Atmospheric Pressure

(86~106) kPa

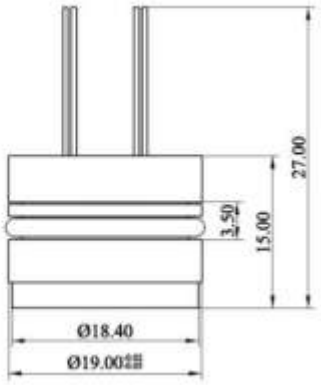
Power

(1.5±0.0015) mADC

7.External Structure（Unit:mm）

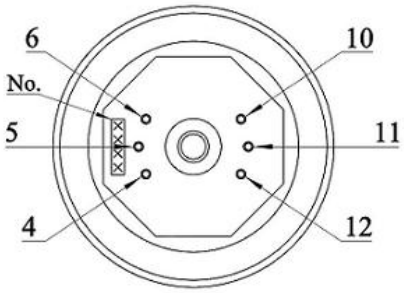


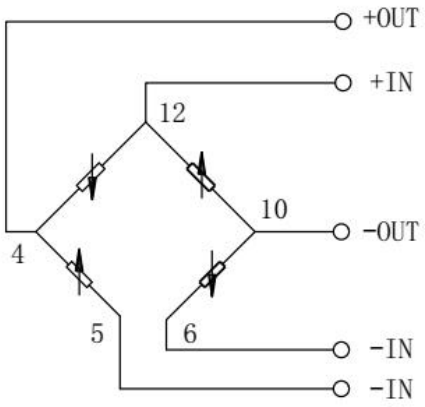
Span<20MPa



Span＜20

8.Electrical Connections





Pin	Electrical Definition	Cable Color
4	Output+(+OUT)	Red
10	Output-(-OUT)	Blue
11	Input-(-IN)	Yellow
12	Input+(+IN)	Black

9.Model Selection

AC1003-	AC1003 General Diffused Silicon Pressure Sensor
Code1	**Span and Pressure Type**
A-G	0～20kPa Gauge Pressure
B-G	0～35kPa Gauge Pressure
C-G	0～70kPa Gauge Pressure
D-G/A	0～100kPa Gauge Pressure/ Absolute Pressure
E-G/A	0～200kPa Gauge Pressure/ Absolute Pressure
F-G/A	0～350kPa Gauge Pressure/ Absolute Pressure
G-G/A	0～700kPa Gauge Pressure/ Absolute Pressure
H-G/A	0～1MPa Gauge Pressure/ Absolute Pressure
I-G/A	0～2MPa Gauge Pressure/ Absolute Pressure
J-G/A	0～3.5MPa Gauge Pressure/ Absolute Pressure
K-A/S	0～7Mpa Absolute Pressure/ Sealed Gauge Pressure
M-A/S	0～15MPa Absolute Pressure/ Sealed Gauge Pressure
N-A/S	0～20MPa Absolute Pressure/ Sealed Gauge Pressure
O-A/S	0～35MPa Absolute Pressure/ Sealed Gauge Pressure
P-A/S	0～70MPa Absolute Pressure/ Sealed Gauge Pressure
Code2	**Electrical Connection**
1	Gold-plated Kovar pin
F	100mm silicone rubber soft wire

Selection of complete code (example):

AC1003-B/A – F

AC1004 High Stability Diffused Silicon Pressure Sensor

The chip of AC1004 high stability metal membrane isolate pressure sensor applies world-advanced-technology MEMS silicon diaphragm and combines it with our unique design and production process. Each product is manufactured in a strict aging, screening and testing process to ensure the high quality and reliability.We provide high quality long-term stable products.

1.Products Features

(1)Product patent:ZL 2016 2 0881761.7
(2)Measuring Range: -100kPa…0kPa～10kPa…100Mpa
(3)Wide Temperature Area Compensation:-10℃~+80℃
(4)The sensors is with imported chips, laser trimming
(5)The sensor is complete stainless 316L structure.

2.Application Field

(1)Process Control
(2)Hydraulic System

3.Structure Features

Diaphragm Material
316L Stainless Steel

Housing Material
316L Stainless Steel

Pin Lead
Gold-plated Kovar/100mm silicone rubber lead

Back pressure tube
316L Stainless Steel(Only Support Gauge Pressure type and Absolute Pressure Type)

Seal Ring
NBR

4.Electrical Features

Voltage Supply
≤2.0mADC

Input Resistance
3kΩ~6 kΩ

Output Resistance
3kΩ~6 kΩ

Responding Time
(10%～90%)：<1ms

Insulation Resistance
100MΩ, 100V DC

Allowed Overpressure
Double Full Span,0C/0B/0A/02 overvoltage 5 times

5.Ambient Condition

Medium Suitability
Various fluids that are non-corrosive to 316L stainless steel and nitrile rubber
Vibration
There is no change at 10gRMS, (20~2000)Hz
Impact
100g，11ms

Location Influence

There will be a deviation from 90° in any direction,and the zero change ≤±0.05% FS

6.Basic Condition

Ambient Temperature

(25±1)℃

Humidity

(50%±10%)RH

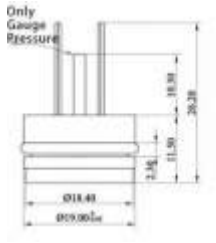
Atmospheric Pressure

(86~106) kPa

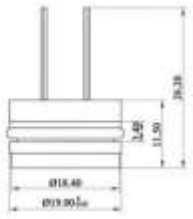
Power

(1.5±0.0015) mADC

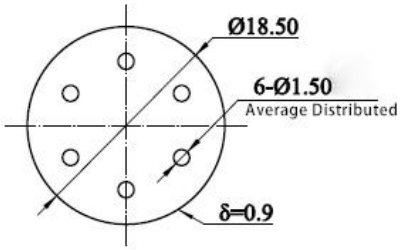
7.External Structure(Unit:mm)



<20MPa

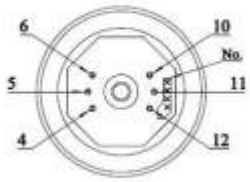


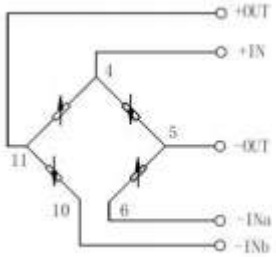
≥20MPa



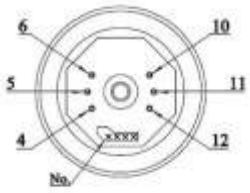
Optional accessories:
Pressure cushion

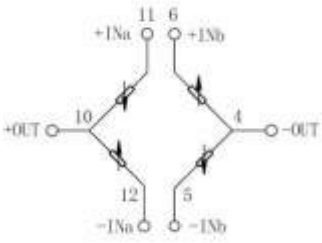
8.Electrical Connection





20kPa and upper Range





10kPa and below Range

Span	Pin	Electrical Definition	Wire Color
20KPa and upper range	4	Input +（+IN）	Black
	5	Output -（—OUT）	Blue
	11	Output +（+OUT）	Red
	12	Input -（—IN）	Yellow
10KPa and below range	4	Output -（—OUT）	Blue
	5	Input -（—IN）	Yellow
	6	Input +（+IN）	Black
	10	Output +（+OUT）	Red

9.Model Selection

AC1004-	AC1004 High Stability Diffused Silicon
Code1	**Span and Pressure Type**
A-G	0～10kPa Gauge Pressure
B-G	0～20kPa Gauge Pressure
C-G	0～35kPa Gauge Pressure
D-G	0～70kPa Gauge Pressure
E-G/A	0～100kPa Gauge Pressure/
F-G/A	0～200kPa Gauge Pressure/
G-G/A	0～350kPa Gauge Pressure/
H-G/A	0～700kPa Gauge Pressure/
I-G/A	0～1MPa Gauge Pressure/
J-G/A	0～2MPa Gauge Pressure/
K-G/A	0～3.5MPa Gauge Pressure/
L-A/S	0～7Mpa Absolute Pressure/
M-A/S	0～15MPa Absolute Pressure/
N-A/S	0～20MPa Absolute Pressure/
O-A/S	0～35MPa Absolute Pressure/
P-A/S	0～70MPa Absolute Pressure/
Q-A/S	0～100MPa Absolute Pressure/
Code2	**Electrical Connection**
1	Gold-plated Kovar pin
F	100mm silicone rubber soft wire

Selection of complete code

(example):AC1004-C/G – 1

AC1005 Capacitive Pressure Sensor

1.Application

·The core components of capacitive pressure transmitters.

·The sensor is widely used in oil chemistry,chemcials,electrical power,steel and cement fields.

2.Technical Specifications

Span	Differential Pressure:200Pa-10MPa Gauge Pressure:200Pa-40MPa Absolute Pressure:6KPa-10MPa
Output Signal	4-20mA,4-20mA +HART
Accuracy	0.2%F.S.

AC1006 Capacitive pressure sensor

1.Application

·The core components for capacitive pressure transmitters

·The sensor is widely used in oil chemistry,chemcials,electrical power,steel and cement fields.

2.Technical Specifications

Span	Gauge Pressure:200Pa-10MPa Absolute Pressure:6KPa-10MPa
Output Signal	4-20mA,4-20mA +HART
Accuracy	0.2%F.S.

Instrument Changes the World

Technology Leads the Future

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