

Introduction :

A31 series are based on A11 pressure sensor embeded a PT100 temperature sensor, which detect both precise pressure and temperature signals.

Pressure: A silicon pressure sensors packaged in a 316L stainless steel housing. The sensing package utilizes silicon oil to transfer pressure from the 316L diaphragm to the sensing element.

Temperature: A standard PT100 sensor was embeded in the pressure capsule which used the thermal conductive silicon grease to minimize the hysteresis of temperature signal.

It is designed for o-ring mounting for the applications where compatibility with corrosive media is required.

There are two options of excitation power -- current and voltage

Features:

- Low cost OEM
- Pressure range:0-20kPa...7MPa
- Wide operable temperature range -40-125°C
- Compatible with corrosive media
- Standard mounting size
- Typical output: 0-100mV

Applications:

- Process control
- Medical instruments
- Pressure/Temperature transmitters



Specifications of current excitation(1.5mA, 25°C)

Parameters		Min.	Typical	Max.
Accuracy (%FS)				
Non-Linearity ¹			±0.10	±0.20
Hysteresis			±0.05	±0.1
Repeatability			±0.05	±0.1
Output (mV)				
Zero ²		-2	±1	2
Span (FS)	20kPa, 40kPa	60	75	90
	≥100kPa	90	120	160
Temp. characters				
Operation Temp. (°C) ³		-40		125
Compensation Temp (°C)		-10		70
Zero Temp. error (%FS) ⁴			±0.75	±1.0
Span Temp. error (%FS) ⁴			±0.75	±1.0
Thermal hysteresis (%FS)			0.1	
Long term Stability				
Zero (±%FS annual)			0.2	
Span (±%FS annual)			0.1	
Supply Current		0.5mA	1.5mA	2mA
Input Resistance		2kΩ		4kΩ
Output Resistance		2.5kΩ		5.5kΩ
Load Resistance⁵		5MΩ		
Insulation Resistance (100V)⁶		100MΩ		

Specifications of voltage excitation (10VDC 25°C)

Parameters	Min.	Typical	Max.
Accuracy (%FS)			
Non-Linearity ¹		±0.10	±0.20
Hysteresis		±0.05	±0.1
Repeatability		±0.05	±0.1
Output (mV)			
Zero ²	-2	±1	2
Span (FS)	20kPa...4MPa	100±1	102
	7MPa	150±1.5	153
Temp. characters			
Operation Temp. (°C) ³	-40		125
Compensation Temp (°C)	-10		70
Zero Temp.error (%FS) ⁴		±0.75	±1.0
Span Temp.error (%FS) ⁴		±1	±1.2
Thermal hysteresis (%FS)		0.1	
Long term Stability			
Zero (±%FS annual)		0.2	
Span (±%FS annual)		0.1	
Supply Voltage		10VDC	14VDC
Input Resistance	4.5kΩ		10kΩ
Output Resistance	2.5kΩ		5.5kΩ
Load Resistance⁵	5MΩ		
Insulation Resistance(100V)⁶	100MΩ		

Pressure Range	0-20kPa...7MPa
Pressure	20kPa 10 X Rated pressure range
Overload	≥40kPa 2.5 X Rated pressure range or 10MPa whichever is less
Pressure Media	Liquids and Gases compatible with 316L Stainless Steel

※Remark:

1. Best fit straight line.
2. Measured at vacuum for absolute (A), ambient for gage (G).
3. Maximum temperature for product with ribbon cable and NBR O-ring is 105° C.
4. Over the compensated temperature range with respect to 25° C.
5. Load resistance to reduce measurement errors due to output loading.
6. Between case and sensing element.

PT100 Temperature vs Resistance

Temp. (°C)	Resistance (Ω)
-50	80.31
0	100
50	119.4
100	138.51
150	157.33

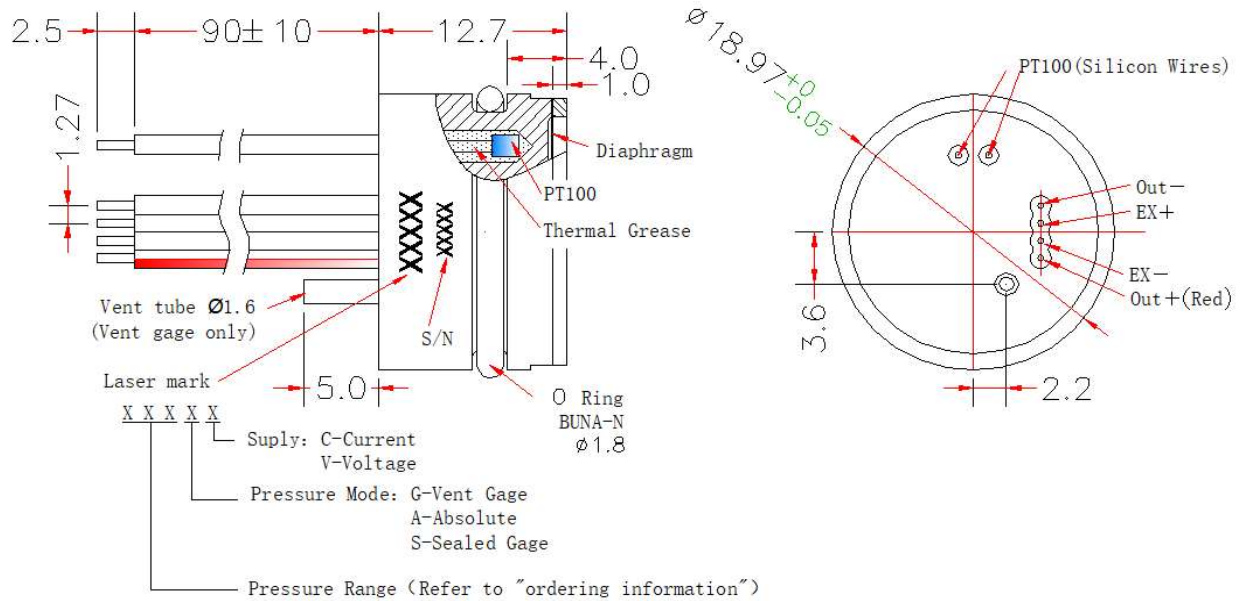
PT100 error

Grade	Resistance error at 0°C (%)	Temp error (°C)	TCR Error (ohm/ohm/°C)
B	±0.12	±(0.30+0.005 T)	0.003851±0.000012

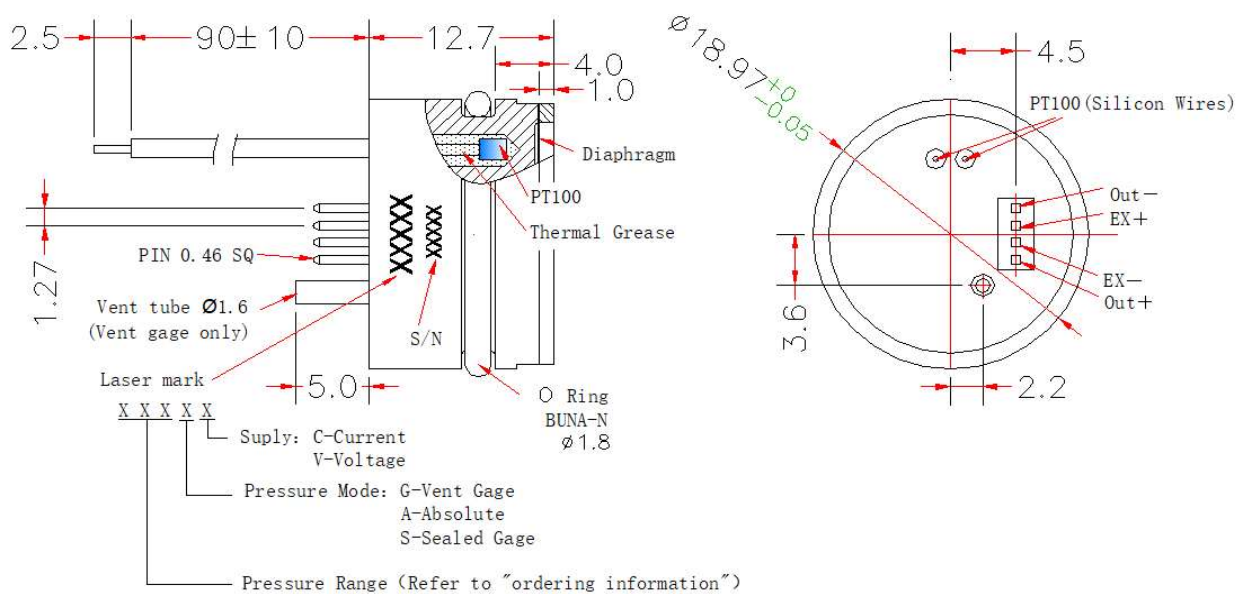
Dimensions (mm) :

Remark: Ribbon Cable or Connect Pins are optional for all models

Ribbon Cable



Connect Pins



Ordering Information					
Model	Description				
A31	Diameter 19mm O Ring mounting; Pressure combined temp. sensor				
	Code	Power Supply			
	C	Constant Current			
	V	Constant Voltage			
	Code	Pressure Range	Gauge	Absolute	
	20k	0-20kPa	*		
	40k	0-40kPa	*		
	100k	0-100kPa	*	*	
	160k	0-160kPa	*	*	
	400k	0-400kPa	*	*	
	600k	0-600kPa	*	*	
	1M	0-1MPa	*	*	
	1.6M	0-1.6MPa	*	*	
	2.5M	0-2.5MPa	*	*	
	4M	0-4MPa	*	*	
	7MPa	0-7MPa	*	*	
	XX	Special			
	Code	Pressure Reference			
	G	Vent Gauge Pressure			
	A	Absolute Pressure			
	S	Sealed Gage			
	Code	Electrical Connection			
	1	Connect Pins			
	2	Ribbon Cable(90mm as default)			
	X	Special			
Example:	A31	C	1M	A	1
	Dia 19mm	Current Supply	0-1MPa	Absolute	Pins
					Model: A31C-1M-A1

Remark: 1. If need vent gauge modle to measure vaccum pressure, Pls. contact us
 2. If need sensors with hastelloy steel diaphragm and weld ring, Pls. contact us.