**Introduction：**

A19/A29 series are based on piezoresistive 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.

this sensor capsule was desinged with a G3/8 threads, diaphragm located at the front end of the threads. Options include a basic version with a welded ring (A19) and a flat diaphragm without a welded ring (A29).

Each sensor was strictly temperature compensated for both zero and span.

There are various output signals avaliable based on application requires,which inculding mV, $I^2C$, 4-20mA, 0.5-4.5V, 0-5V,1-5V etc..

**Features:**

- Low cost OEM
- Pressure Range: 0-100kPa…7MPa
- Wide operable temperature range -40-125℃
- Stainless Steel 316L
- Capsule with a mounting thread(G3/8)
- Various outputs: mV, $I^2C$ or amplified


**Applications:**

- Process control
- Fresh and waste water measurements
- Medical instruments
- Liquid level

**Specifications** Ambient Temperature: 25°C (unless otherwise specified

**mV output**

| Parameters | | Min. | Typical | Max. |
|---|---|---|---|---|
| Accuracy(%FS) | | | | |
| Non-Linearity[1] | | | ±0.10 | ±0.20 |
| Hysteresis | | | ±0.05 | ±0.1 |
| Repeatibility | | | ±0.05 | ±0.1 |
| Temp. characters | | | | |
| Operation Temp.(℃)[2] | | -40 | | 125 |
| Compensation Temp(℃) | 100kPa | 0 | | 70 |
| | >100kPa | -10 | | 70 |
| Zero Temp.error(%FS)[3] | | | ±0.75 | ±1.0 |
| Span Temp. error(%FS)[3] | | | ±0.75 | ±1.2 |
| Thermal hysteresis(%FS) | | | 0.1 | |
| Long term Stability | | | | |
| Zero (±%FS annual) | | | 0.2 | |
| Span (±%FS annual) | | | 0.1 | |
| Load Resistance[4] | | 5MΩ | | |
| Insulation Resistance(100V)[5] | | 100MΩ | | |
| Pressure Range | | 0-100kPa…7MPa | | |
| Pressure Overload | | 2 times of Rated pressure range or 10MPa whichever is less | | |
| Pressure Media | | Liquids and Gases compatible with 316L Stainless Steel | | |

For mV output there are two types based on the different excitation power supply: constant current and constant voltage.

**Constant current power (Excitation:1.5mA)**

| Parameters | Min. | Typical | Max. |
|---|---|---|---|
| Supply Current | 0.5mA | 1.5mA | 2mA |
| Output(mV) | | | |
| Zero output | -2 | ±1 | 2 |
| Full scale output (FS) | 90 | 120 | 200 |
| Input Resistance | 2kΩ | | 4kΩ |
| Output Resistance | 2.5kΩ | | 5.5kΩ |

**Constant voltage power (Excitation:10VDC)**

| Parameters | | Min. | Typical | Max. |
|---|---|---|---|---|
| Supply Voltage | | | 10 | 14 |
| Output(mV) | | | | |
| Zero output | | -2 | ±1 | 2 |
| Full scale output (FS) | 100kPa…4MPa | 98 | 100±1 | 102 |
| | 7MPa | 147 | 150±1.5 | 153 |
| Input Resistance | | 4.5kΩ | | 10kΩ |
| Output Resistance | | 2.5kΩ | | 5.5kΩ |

※Remark:

1. Best fit straight line.
2. The maximum rating temp. of ribbon cable is 105° C.
3. Over the compensated temperature range with respect to 25° C.
4. Increase load resistance to reduce measurement errors due to output loading.
5. Between case and sensing element.

**$I^2C$** (Supply Voltage: 3.3Vdc)

| Parameters | | Min. | Typical | Max. | Notes |
|---|---|---|---|---|---|
| Interface Type | | | $I^2C$ (ADDR, 0X28H) | | SPI (optional) |
| Accuracy(%FS) | | -0.1 | ±0.05 | 0.1 | combined linearity, hysteresis and repeatability. |
| Total Error Band (%FS) | | -0.75 | ±0.5 | 0.75 | includes calibration errors and temperature effects over the compensated range. |
| Output Type | | | 10% -- 90% (A type) | | 5%-95%(B type) Optional |
| Zero Output | | | 666 | | Count Hex |
| Full Scale Output(FS) | | | 399A | | |
| Resolution - Pressure(%FS) | | 0.008 | | | 14bits |
| Temp. Accuracy(℃) | | -2 | | 2 | over the compensated temp.range |
| Resolution - Temp.(℃) | | | 0.1 | | 8~11bits |
| Operating Temp.(℃) | | -40 | | 125 | |
| Compensated Temp.(℃) | | -10 | | 70 | |
| Input Voltage(V) | | 2.7 | 3.3 | 5.5 | |
| Current consumption | Non-Sleep | | 2.7mA | | default (See Note1) |
| | Sleep mode | | 2μA | | optional |
| Load Resistance (KΩ) | | 10 | | | |
| Insulation Resistance (MΩ/250V) | | 50 | | | |
| Response Frequency (HZ) | | | 2K | | |
| Pressure Overload | | | 2 times of rated pressure range or 10MPa whichever is less | | |

**Note1:** Reduce response frequency can reduce the current consumption accordingly, Pls. contact factory if you want this option.

**Amplified output**

| Parameters | Min. | Typical | Max. |
|---|---|---|---|
| Accuracy(%FS) combined linearity, hysteresis and repeatability | | ±0.05 | ±0.1 |
| Output | 0.5-4.5V(Ratiometric); 0-5V; 1-5V; 4-20mA | | |
| Zero output(%FS) | -0.5 | ±0.25 | 0.5 |
| Full Scale output(%FS) | -0.5 | ±0.25 | 0.5 |
| Temp. characters | | | |
| Operation Temp.(℃) | -40 | | 125 |
| Compensation Temp.(℃)[1] | -10 | | 70 |
| Total error band(%FS)[2] | -1 | ±0.5 | 1 |
| Long term Stability | | | |
| Zero (±%FS annual) | | 0.2 | |
| Span (±%FS annual) | | 0.1 | |
| Power supply | See ordering information | | |
| Insulation Resistance | 50MΩ/250V | | |
| Frequency(Hz) | 1K | | |
| Overpressure | 2 times of rated pressure range or 10MPa whichever is less | | |

1. Compensation temp. -20~85℃ optional

2. Total error band: total output error including Zero, Span, non-linearity, temp.erorr within compensated temperature range.

**CE Compliance:**

EN55032 Emissions Class A&B

IEC61000-4-2(ESD):15KV(air)/8KV(contact)

IEC61000-4-3 Radiated, Radio-Frequency Electromagnetic Field Immunity (10V/m, 80MHZ~1GHZ)

IEC61000-4-4 Electrial Fast Transient Immunity (1kV)

IEC61000-4-5 Surge Immunity

Input to Output:±1kV/42Ω; Leads to Case: ±1kV/12Ω;

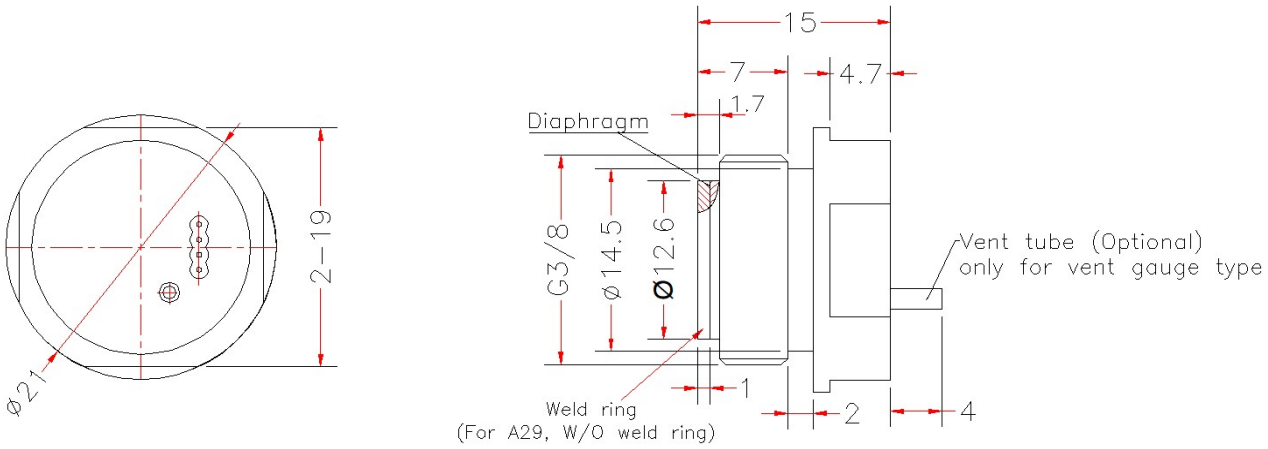
IEC61000-4-6 Immunity to conducted disturbances Induced by Radio Frequency Fields

150kHZ~80MHZ, 3V Level for current output; 10V Level for Voltage output

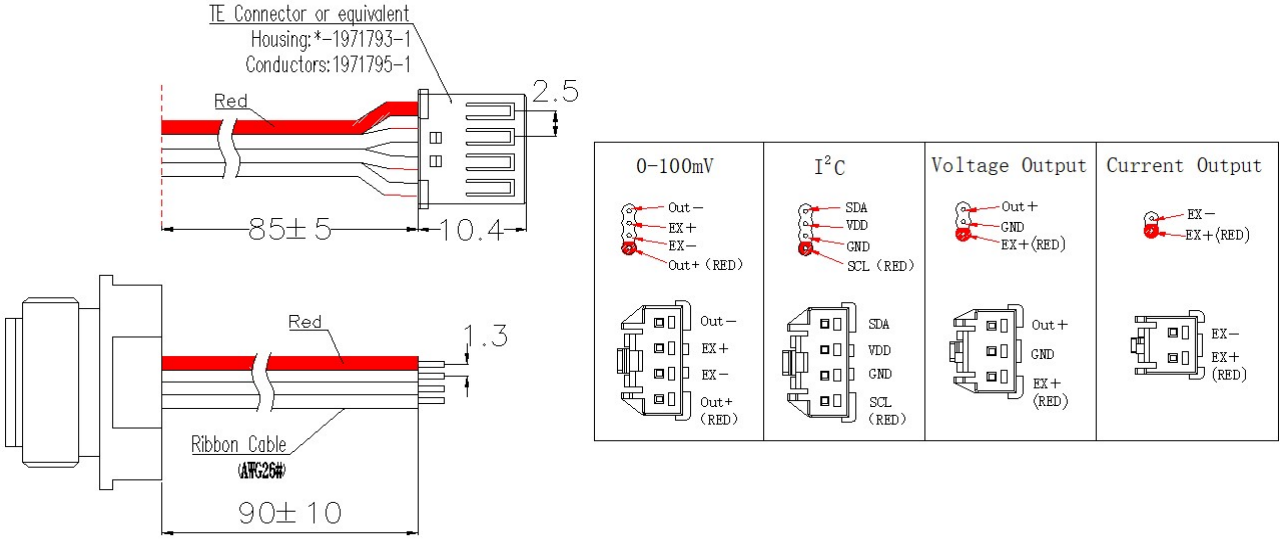
IEC61000-4-9 Pulse Magnetic Field Immunity (100A/m Peak)

For all CE compliance tests, allowed output deviation within: ±1%FS(for current output); ±1.5%FS(for voltage output)

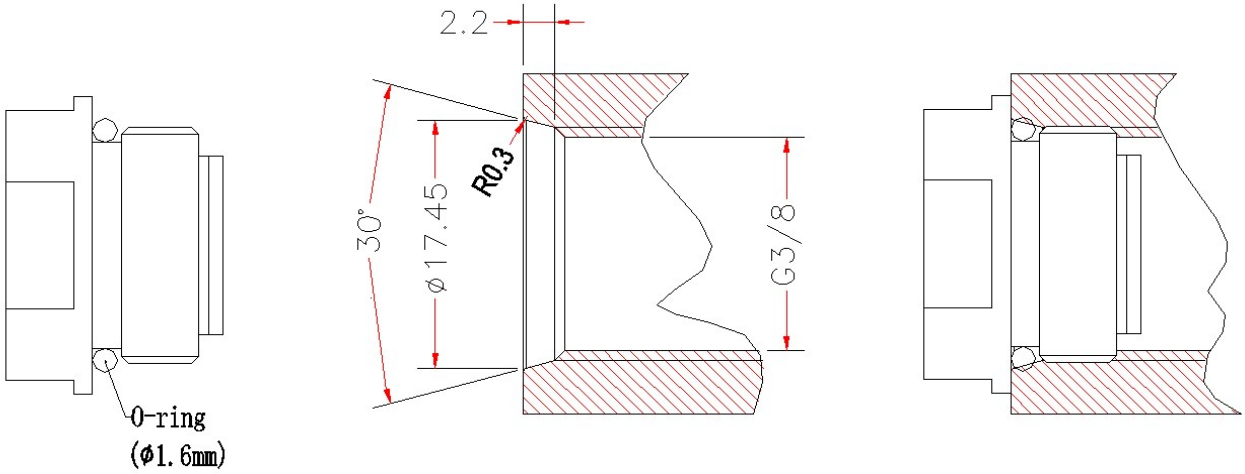
## Dimmension (mm):




## Wiring informations




## Recommanded mounting dimenssions (unit:mm)



**Ordering Information**

| Model | Description |
|---|---|
| A19 | Pressure sensor with G3/8 thread(with weld ring) |
| A29 | Flat diaphragm pressure sensor with G3/8 thread(w/o weld ring) |

| Code | Power supply | Output |
|---|---|---|
| C | Constant current | mV |
| V | Costant voltage | mV |
| D | 3.3V | $I^2C$ |
| B | 5V | 0.5-4.5V(Ratiometric) |
| E | 8-30V | 0-5V |
| F | 8-30V | 4-20mA |
| H | 8-30V | 1-5V |

| Code | Pressure Range | Gauge | Absolute |
|---|---|---|---|
| 100K | 0-100kPa | * | * |
| 200K | 0-200kPa | * | * |
| 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 | TE Connector |
| 2 | Ribbon Cable(90mm as default) |
| X | Special |

**Example:**

| | | | | | |
|---|---|---|---|---|---|
| A19 | C | 1M | A | 2 | |
| | Current Supply | 0-1MPa | Absolute | Ribbon cable | Model: A19C-1M-A2 |

**Remark:**

1. If need vent gauge modle to measure vaccum pressure, Pls. contact us
2. For Model A29, the minimum pressure range available is 400kPa