

# SS109 series piezoresistive pressure transducers

## Features

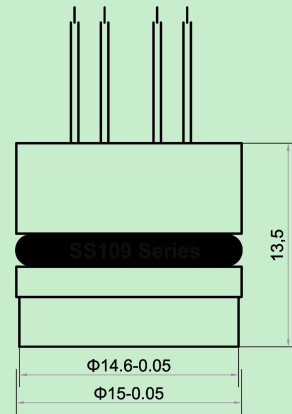
- Standard size Ø15 × 13.5mm
- High accuracy and reliability
- Stainless steel 316L housing
- Stainless steel 316L diaphragm
- 1.0mA, 1.5mA constant current supply
- 0-70°C temperature compensation range
- Isolated construction, able to test various media
- Absolute, vented gauge and sealed gauge pressure



## Descriptions

SS109 series piezoresistive capsule has the diameter 15mm and height 13.5mm, apply pressure from 2bar to 1000bar (200KPa to 100Mpa), three pressure type: vented gauge, sealed gauge, absolute is optional. Thanks to the piezoresistive technology, the typical full signal output for the measuring ranges is about 100 mV with a constant current supply of 1.5 mA.

Each piezoresistive pressure capsule is tested for pressure properties carefully, and is supplied together with an individual calibration sheet including zero and span output. Main fields of applications: pneumatics, level technology, hydraulics, avionics, etc.



## Pressure ranges (typical)

Vented gauge (defining atmospheric pressure as zero) (Unit: bar)

|       |     |     |     |    |    |    |
|-------|-----|-----|-----|----|----|----|
| Range | 2.0 | 4.0 | 6.0 | 10 | 16 | 25 |
|-------|-----|-----|-----|----|----|----|

Absolute (defining absolute vacuum as zero) (Unit: bar)

|       |     |      |     |     |     |     |
|-------|-----|------|-----|-----|-----|-----|
| Range | 2.0 | 4.0  | 6.0 | 10  | 16  | 25  |
|       | 40  | 60   | 100 | 160 | 250 | 400 |
|       | 600 | 1000 |     |     |     |     |

Sealed gauge (defining standard atmospheric pressure as zero) (Unit: bar)

|       |     |     |     |     |      |     |
|-------|-----|-----|-----|-----|------|-----|
| Range | 10  | 16  | 25  | 40  | 60   | 100 |
|       | 160 | 250 | 400 | 600 | 1000 |     |
|       |     |     |     |     |      |     |

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## Technical data

### Performance (EN 60770)

|                           |  |                   |
|---------------------------|--|-------------------|
| Power supply              | 1.5 mADC (typical)                           | 1 mADC (optional) |
| Zero output               | 0 ± 2 mV ①                                   |                   |
| Span output               | 100 ± 20 mV ①                                |                   |
| Accuracy                  | 0.25% F.S. ①                                 |                   |
| Overload range            | 2.0 × F.S. (≤ 250 bar)                       |                   |
|                           | 1.5 × F.S. (> 250 bar), 1.2 × F.S. (1000bar) |                   |
| Compensated temp range    | 0 → 70 °C                                    |                   |
| Operating temp range      | -20 → 100 °C                                 |                   |
| Storage temp range        | -40 → 125 °C                                 |                   |
| Zero thermal error        | ≤ 0.02% F.S./°C                              |                   |
| Sensitivity thermal error | ≤ 0.02% F.S./°C                              |                   |
| Stability                 | ≤ 0.2% F.S./Year                             |                   |
| Input impedance           | 2.3 → 4 KΩ                                   |                   |
| Insulation resistance     | > 100 MΩ at 250 V                            |                   |
| Vibration                 | 20g / (20 to 5000 Hz)                        |                   |
| Endurance                 | > 100 × 10 <sup>6</sup> F.S. cycles          |                   |

①: The zero output, span output and accuracy may different if the supply power, measuring range and pressure type is different, please contact us if you need more details.

### Mechanical characteristics

|                       |                               |                       |
|-----------------------|-------------------------------|-----------------------|
| Diaphragm             | Stainless steel 316L          |                       |
| Housing               | Stainless steel 316L          |                       |
| Filling liquid        | Silicone oil                  |                       |
| O-ring                | FKM / Viton (Ø12 × 1.5 mm)    |                       |
| Electrical connection | 10 cm silicone sheathed wires | Kovar pins (optional) |
| Diameter              | Ø15 mm                        |                       |
| Height                | 13.5 mm                       |                       |
| Weight                | 15 g                          |                       |

### Electrical connections

| wires |          | 5Pins connection mode 1 |                  | 5Pins connection mode 2 |                  |
|-------|----------|-------------------------|------------------|-------------------------|------------------|
| Color | Function |                         | PIN1: Supply +   |                         | PIN1: Supply +   |
| Red   | Supply + |                         | PIN2: Output -   |                         | PIN2: Output +   |
| Black | Supply - |                         | PIN3: Supply -   |                         | PIN3: Supply -   |
| White | Output + |                         | PIN4: Supply - ② |                         | PIN4: Supply - ② |
| Blue  | Output - |                         | PIN5: Output +   |                         | PIN5: Output -   |

②: PIN4 is not used for 4Pins connection

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## Part number chart (How to order)

PART NUMBER REQUIRED: **SS109.PL.01.A.01 (EXAMPLE)**

|   |  |    |
|---|--|----|
| 1 | Pressure range(bar)  | PL |
|   | PH(0...2) PI(0...2.5) PJ(0...4) PK(0...6) PL(0...10) PM(0...16) PN(0...25) PO(0...40)<br>PP(0...60) PQ(0...100) PR(0...160) PS(0...200) PT(0...250) PU(0...300) PV(0...350)<br>PW(0...400) PX(0...500) PY(0...600) PZ(0...1000) CC(-1...3) CD(-1...5)<br>CE(-1...9) CF(-1...15) CG(-1...24) 1Z(Other pressure range or unit is on request) |    |
| 2 | Pressure type  | 01 |
|   | 01(Vented gauge) 02(Absolute) 03(Sealed gauge)   |    |
| 3 | Electrical connection ③  | A  |
|   | A(4Wires) B(5Wires) C(4Pins mode 1) D(4Pins mode 2) E(5Pins mode 1)<br>F(5Pins mode 2)   |    |
| 4 | Power supply   | 01 |
|   | 01(1.5mADC) 02(2mADC)  |    |

③: 4Wires and 4Pins connection: the zero signal is set by SENDO SENSOR before leave factory.

③: 5Wires and 5Pins connection: the zero signal can be set by clients.

③: Pins mode1 and mode2: please see the details in the Electrical connection in page 2.

## Contact us

|                         |  |                             |
|-------------------------|--|-----------------------------|
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\*Specifications subject to change without notice, the latest date sheet please contact: sales@sendo-sensor.com