

# PS9000 Series

## OEM silicon stainless steel pressure sensor

### FEATURES

- 0...5 psi to 0...500 psi gage
- -15...15 psi to -15...100 psi gage
- 0...15 psi to 0...500 psi absolute
  
- Calibrated and temperature compensated
  
- Small size
  
- Field interchangeable
  
- Reliable semiconductor technology



### SERVICE

Pressure inlet: all media compatible with stainless steel 1.4401 (316)<sup>9</sup>

Housing: stainless steel, protection class IP54, according to DIN40050 respectively NEMA4X<sup>1</sup>

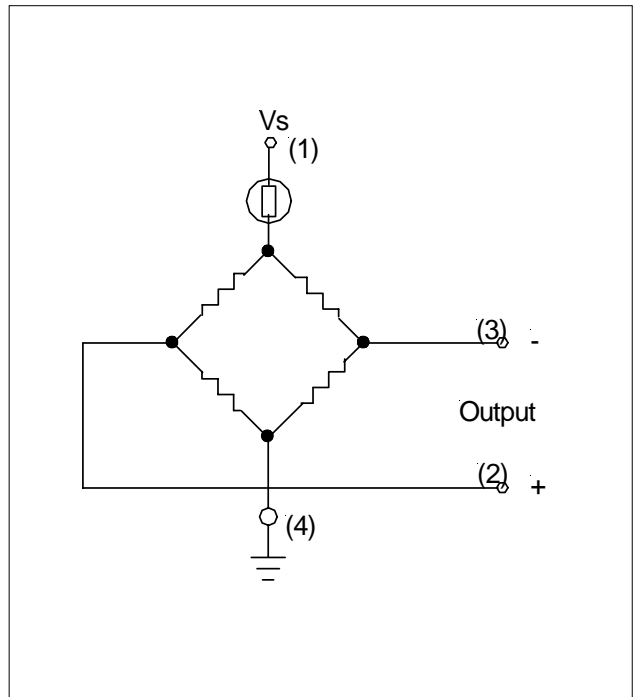
Scale: 1 cm  
1 inch

### SPECIFICATIONS

#### Maximum ratings

|   |                       |
|---|-----------------------|
| Supply voltage                              | 15 V                  |
| Temperature limits                          |                       |
| Storage                                     | -55°C to 100°C        |
| Operating                                   | -40°C to 100°C        |
| Compensated                                 | 0°C to 82°C           |
| Humidity limits                             | 0 - 98 %RH            |
| Vibration (5 Hz to 500 Hz)                  | 10 g <sub>RMS</sub>   |
| Mechanical shock                            | 50 g for 11 msec      |
| Life  | min. 1 million cycles |
| Insulation resistance at 50 V <sub>DC</sub> | min. 100 MΩ           |

### ELECTRICAL CONNECTION



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### PRESSURE RANGE SPECIFICATIONS

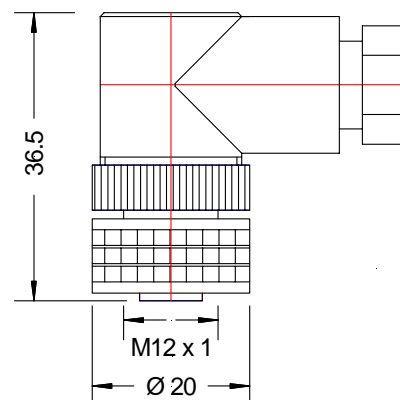
| Part no.       | pressure range   | proof pressure <sup>2</sup> | burst pressure <sup>3</sup> |
|----------------|------------------|-----------------------------|-----------------------------|
| PS9005G...     | 0 ... 5 psig     | 15 psig                     | 25 psig                     |
| PS9010G...     | 0 ... 10 psig    | 30 psig                     | 45 psig                     |
| PS9015(A,G)... | 0 ... 15 psi     | 45 psi                      | 75 psig                     |
| PS9015V...     | -15 ... 15 psig  | 45 psig                     | 75 psig                     |
| PS9030(A,G)... | 0 ... 30 psi     | 90 psi                      | 150 psi                     |
| PS9030V...     | -15 ... 30 psig  | 90 psig                     | 150 psig                    |
| PS9050(A,G)... | 0 ... 50 psi     | 150 psi                     | 250 psi                     |
| PS9100(A,G)... | 0 ... 100 psi    | 300 psi                     | 300 psi                     |
| PS9100V...     | -15 ... 100 psig | 300 psig                    | 300 psig                    |
| PS9200(A,G)... | 0 ... 200 psi    | 600 psi                     | 1000 psi                    |
| PS9300(A,G)... | 0 ... 300 psi    | 900 psi                     | 1500 psi                    |
| PS9500(A,G)... | 0 ... 500 psi    | 1200 psi                    | 2400 psi                    |

### PERFORMANCE CHARACTERISTICS unless otherwise noted, $V_s = 10,00\text{ V}$ , $t_{amb} = 25^\circ\text{C}$

| Characteristics                                     | Min.                            | Typ.     | Max.                   | Unit |
|---|---------------------------------|----------|------------------------|------|
| Zero pressure offset                                | -2                              | 0        | 2                      | mV   |
| Full scale span <sup>4</sup>                        | PS9005G...<br>all other devices | 48<br>98 | 50<br>100<br>52<br>102 |      |
| Non-linearity <sup>5</sup>                          |                                 | ±0.1     | ±0.25                  | %FSO |
| Pressure hysteresis <sup>5</sup>                    |                                 | ±0.015   | ±0.030                 |      |
| Thermal effects (0°C to 82°C) <sup>6</sup>          | PS9005G...<br>all other devices | Offset   | ±2.0                   |      |
|   |                                 | Span     | ±2.0                   |      |
|   |                                 | Offset   | ±0.5                   |      |
|   |                                 | Span     | ±0.5                   |      |
| Thermal hysteresis (0°C to 82°C)                    |                                 | ±0.1     | ±0.3                   |      |
| Repeatability                                       |                                 | ±0.010   | ±0.030                 |      |
| Long term stability of offset and span <sup>7</sup> |                                 | ±0.1     | ±0.3                   |      |
| Response time (10 % to 90 %) <sup>8</sup>           |                                 | 0.1      |                        | ms   |
| Input impedance                                     | 8.0                             | 25       | 50                     | kΩ   |
| Output impedance                                    | 3.0                             | 4.5      | 6.0                    |      |
| Common mode output voltage                          | 0.3                             |          | 5.0                    | V    |

### RECOMMENDED MATING CONNECTOR M12 X 1 (order number ZP000112-B)

Connector NOT included in delivery!



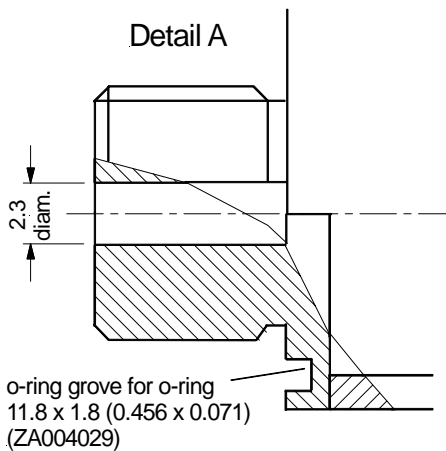
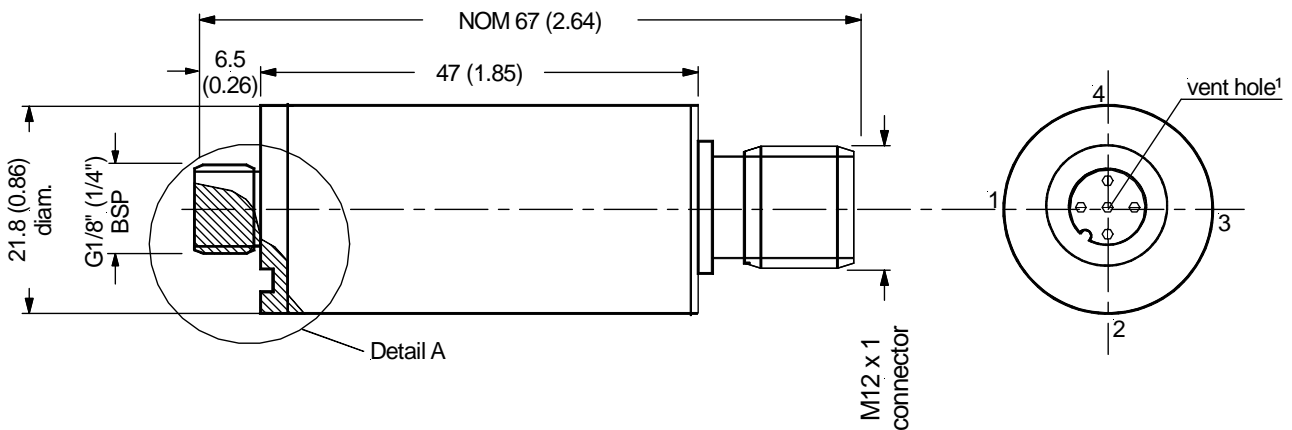
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### Specification notes:

1. IP54 (NEMA4X) protection is given when the connector is locked. For proper function the gage port is vented to the atmosphere through the connector/cable assembly. Thus the cable end must have access to the ambient pressure.
2. The maximum pressure that can be applied without changing the transducer's performance or accuracy.
3. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer case.
4. Span is the algebraic difference between the output voltage at full scale pressure and the output at zero pressure. Span is ratiometric to the supply voltage
5. Linearity is based on **Best fit Straight Line**. Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
6. Maximum error band of the offset voltage or span over the compensated temperature range, relative to the 25°C reading.
7. Long term stability over a one year period.
8. Response time for step change from the zero pressure to the full scale pressure.
9. Other materials on special request. When using devices with optional nickel plated fittings, consider the media compatibility of the fittings also.

### OUTLINE DRAWING



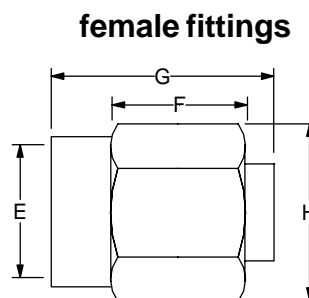
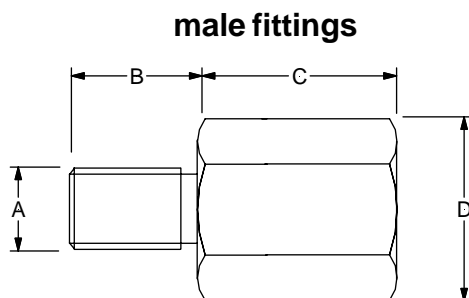
| ELECTRICAL CONNECTION |            |
|-----------------------|------------|
| Pin                   | Connection |
| 1                     | +Vs        |
| 2                     | Vout+      |
| 3                     | Vout-      |
| 4                     | -Vs        |

dimensions in mm (inches)

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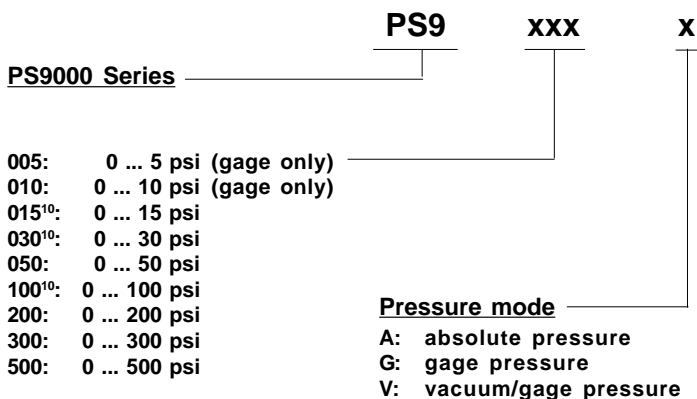
### OPTIONAL PRESSURE FITTINGS



| Dimensions in mm (inches) |              |             |             |
|---------------------------|--------------|-------------|-------------|
| A                         | B            | C           | D (Hex.)    |
| 1/8" BSPT                 | 8 (0.315)    | 13 (0.512)  | 14 (9/16")  |
| 1/4" BSPT                 | 12 (0.472)   | 5.5 (0.217) | 14 (9/16")  |
| 3/8" BSPT                 | 11.5 (0.453) | 5 (0.197)   | 17 (11/16") |
| 1/2" BSPT                 | 16 (0.630)   | 7 (0.276)   | 22 (7/8")   |
| 1/8" BSP                  | 12.5 (0.492) | 11 (0.433)  | 14 (9/16")  |
| 1/4" BSP                  | 8.5 (0.335)  | 5 (0.197)   | 19 (3/4")   |
| 3/8" BSP                  | 12.5 (0.492) | 7 (0.276)   | 22 (7/8")   |
| 1/8" NPT                  | 10 (0.394)   | 13 (0.512)  | 17 (11/16") |
| 1/4" NPT                  | 14 (0.551)   | 6 (0.236)   | 22 (7/8")   |

| Dimensions in mm (inches) |            |            |             |
|---------------------------|------------|------------|-------------|
| E                         | F          | G          | H (Hex.)    |
| 1/8" BSP                  | 5 (0.197)  | 15 (0.591) | 14 (9/16")  |
| 1/4" BSP                  | 7 (0.276)  | 20 (0.787) | 17 (11/16") |
| 3/8" BSP                  | 6 (0.236)  | 20 (0.787) | 22 (7/8")   |
| 1/2" BSP                  | 18 (0.707) | 23 (0.906) | 24 (15/16") |

### ORDERING INFORMATION



#### Fitting size

D: 1/8" BSPT male, brass, nickel plated  
E: 1/4" BSPT male, brass, nickel plated  
F: 3/8" BSPT male, brass, nickel plated  
G: 1/2" BSPT male, brass, nickel plated

K: 1/8" NPT male, brass, nickel plated  
L: 1/4" NPT male, brass, nickel plated  
M: 1/8" NPT male, SS 1.4305 (303)  
N: 1/4" NPT male, SS 1.4305 (303)

P: G 1/8" (BSP) male, brass, nickel plated  
Q: G 1/4" (BSP) male, brass, nickel plated  
R: G 3/8" (BSP) male, brass, nickel plated  
S: G 1/2" (BSP) male, brass, nickel plated

U: G 1/8" (BSP) female, brass, nickel plated  
V: G 1/4" (BSP) female, brass, nickel plated  
W: G 3/8" (BSP) female, brass, nickel plated  
X: G 1/2" (BSP) female, brass, nickel plated

Y: G 1/8" (BSP) male, SS 1.4305 (303)  
no optional fitting

Note 10: also available as vacuum/gage version

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