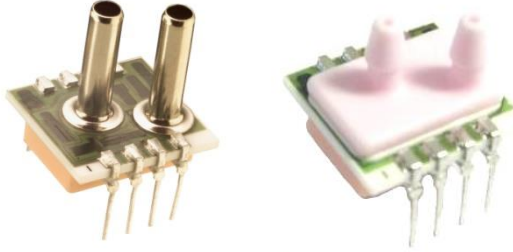


## 1210 Sub psi



- PC Board Mountable Pressure Sensor
- 40 mV Output Typical
- Differential Pressures
- Metal Tube and Ceramic Barbed Ports
- Temperature Compensated



### DESCRIPTION

The 1210 sub PSI is a temperature compensated, piezoresistive silicon pressure sensor packaged in a dual-in-line configuration. It is intended for cost sensitive applications where excellent performance and long-term stability are required.

Integral temperature compensation is provided over a range of 0-60°C using laser-trimmed resistors. An additional laser-trimmed resistor is included to normalize pressure sensitivity variations by programming the gain of an external differential amplifier. This provides sensitivity interchangeability of  $\pm 1\%$ . Differential pressure ranges from 0-5 (12.5mB) to 0-10 (25mB) inches of H<sub>2</sub>O are available. Multiple leads, metal or ceramic barbed tubes are available for specific applications.

Please refer to the 1210 1psi and standard datasheet for information on products with operating pressures greater than 1psi.

### FEATURES

- Dual-in-Line Package
- Ceramic Barbed Ports Option
- 3/32 in. ID Hosing [2.4mm]
- $\pm 0.5\%$  Non Linearity
- $\pm 1.0\%$  Temperature Performance
- 1.0% Interchangeable Span (provided by gain set resistor)
- Solid State Reliability

### APPLICATIONS

- Sleep Apnea
- Respirators/Ventilators
- Air Duct Flow
- Medical Instrumentation

### STANDARD RANGES (INCHES OF H<sub>2</sub>O)

| Pressure | Gauge          | Differential   |
|----------|----------------|----------------|
| 0 to 5   | 1S,3S,1L,3L,3B | 1S,3S,1L,3L,3B |
| 0 to 10  | 1S,3S,1L,3L,3B | 1S,3S,1L,3L,3B |

# 1210 Sub psi

## PERFORMANCE SPECIFICATIONS

Supply Current: 1.5 mA

Ambient Temperature: 25°C (unless otherwise specified)

| PARAMETERS                  | MIN  | TYP   | MAX  | UNITS               | NOTES |
|-----------------------------|--|-------|------|---------------------|-------|
| Span                        | 20   | 40    | 75   | mV                  | 1     |
| Zero Pressure Output        | -2   |       | 2    | mV                  |       |
| Pressure Non Linearity      | -0.5   | ±0.3  | 0.5  | % Span              | 2     |
| Pressure Hysteresis         | -0.25  | ±0.15 | 0.25 | % Span              |       |
| Input & Output Resistance   | 1000   | 3600  | 4500 | Ω                   |       |
| Temperature Error – Span    | -1.0   | ±0.5  | 1.0  | % Span              | 3     |
| Temperature Error – Zero    | -1.25  | ±0.5  | 1.25 | % Span              | 3     |
| Thermal Hysteresis – Zero   |  | ±0.1  |      | % Span              | 3     |
| Supply Current              |  | 1.5   | 2.0  | mA                  |       |
| Response Time (10% to 90%)  |  | 200   |      | μS                  | 4     |
| Output Noise (10Hz to 1kHz) |  | 1.0   |      | μV p-p              |       |
| Long Term Stability         |  | ±0.2  |      | %Span               | 5     |
| Pressure Overload           |  |       | 200  | in H <sub>2</sub> O |       |
| Compensated Temperature     | 0  |       | 60   | °C                  |       |
| Operating Temperature       | -25  |       | +85  | °C                  |       |
| Storage Temperature         | -40  |       | +125 | °C                  |       |
| Weight                      |  |       | 3    | grams               |       |
| Media                       | Non-Corrosive Dry Gases Compatible with Silicon, Pyrex, RTV, Gold, Ceramic, Nickel, and Aluminum |       |      |                     |       |

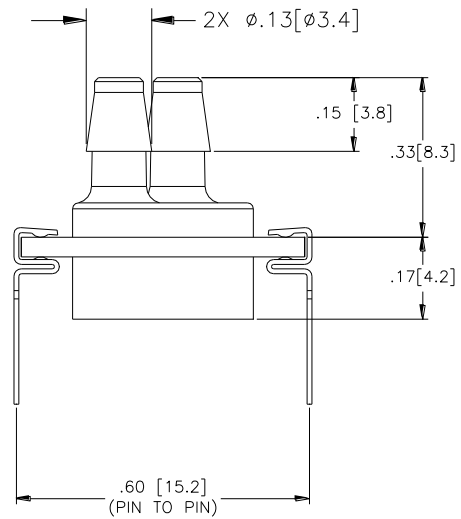
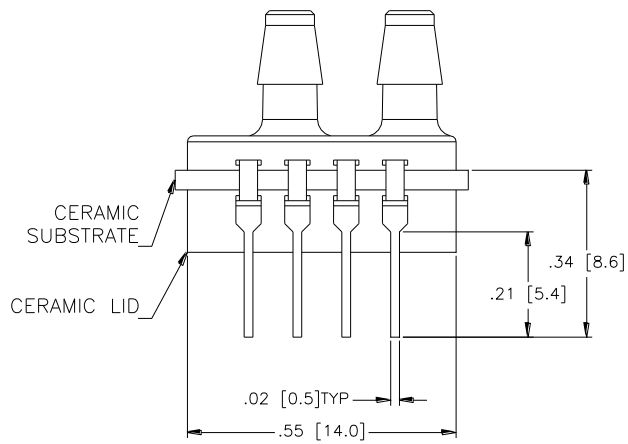
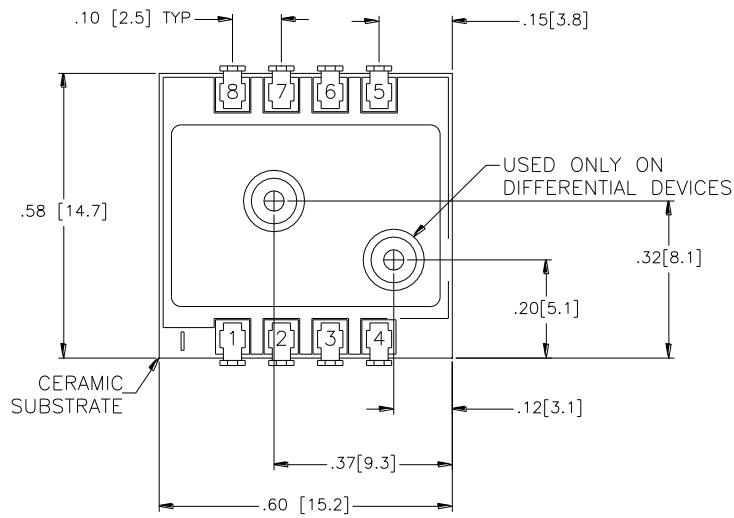
### Notes

1. Ratiometric to supply current.
2. Best fit straight line. Non linearity for 10inH<sub>2</sub>O is 0.75%
3. Maximum temperature error between 0°C and 60°C with respect to 25°C. Thermal error of offset for 5inH<sub>2</sub>O is 2.0%
4. For a zero-to-full scale pressure step change.
5. Long term stability over a one year period with constant current and temperature.

# 1210 Sub psi

## DIMENSIONS

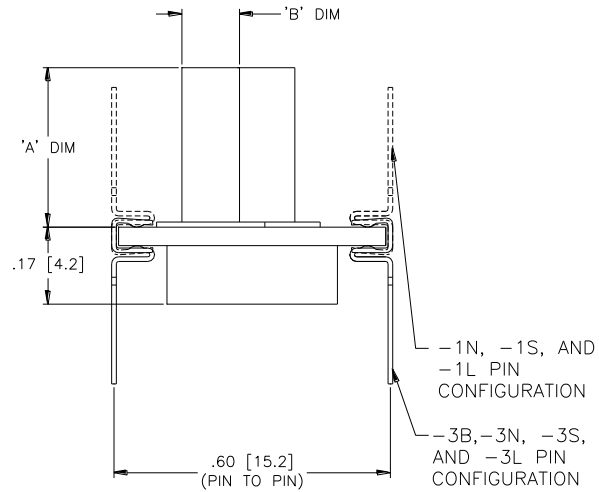
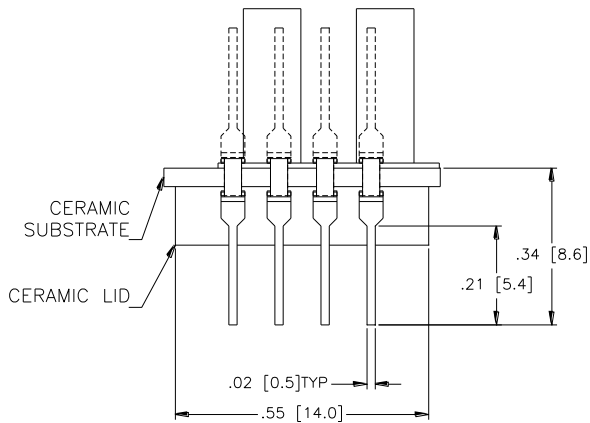
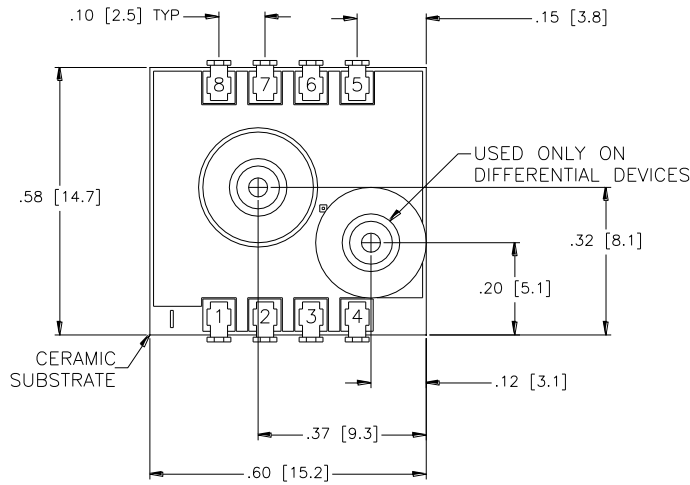
'BARB' VERSION  
DIMENSIONS IN INCHES [mm]



| PAD NO | FUNCTION |
|--------|----------|
| 1      | -OUT     |
| 2      | -EX      |
| 3      | +OUT     |
| 4      | +EX      |
| 5,6    | GAIN     |
| 7,8    | TEST     |

# 1210 Sub psi

## 'TUBE' VERSION DIMENSIONS IN INCHES [mm]

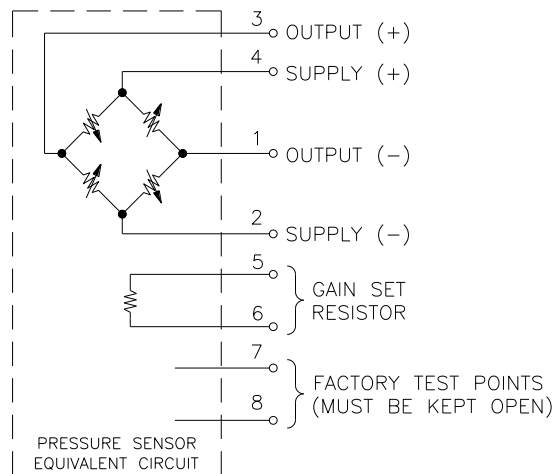


| VENT TUBE DIMENSIONS |                           |                            |
|----------------------|---------------------------|----------------------------|
| MODEL                | 'A' DIM                   | 'B' DIM                    |
| 1N/3N                | N/A                       | N/A                        |
| 1L/3L                | .490±.005<br>[12.45±0.13] | ø.127±.005<br>[ø3.23±0.13] |
| 1S/3S                | .325±.005<br>[8.26±0.13]  | ø.125±.005<br>[ø3.18±0.13] |

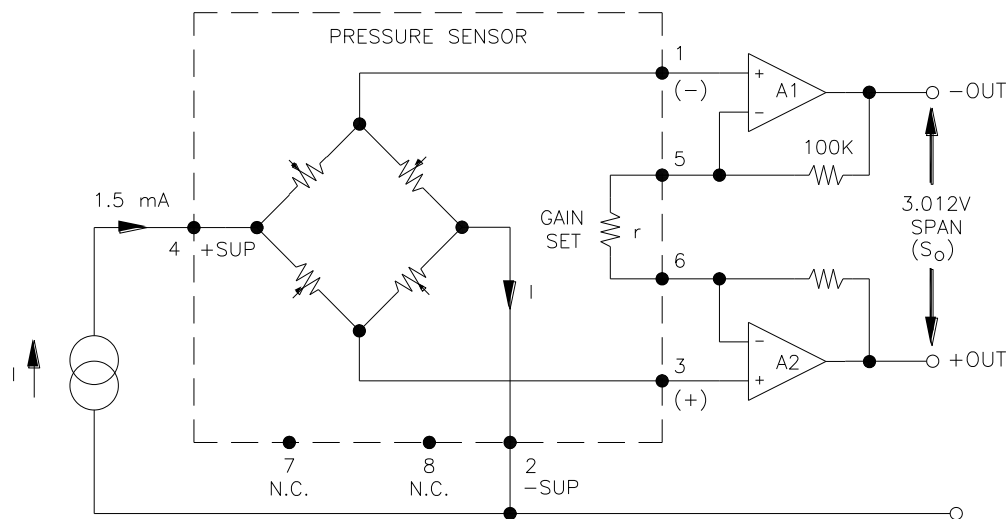
| PAD NO | FUNCTION |
|--------|----------|
| 1      | -OUT     |
| 2      | -EX      |
| 3      | +OUT     |
| 4      | +EX      |
| 5,6    | GAIN     |
| 7,8    | TEST     |

# 1210 Sub psi

## CONNECTIONS



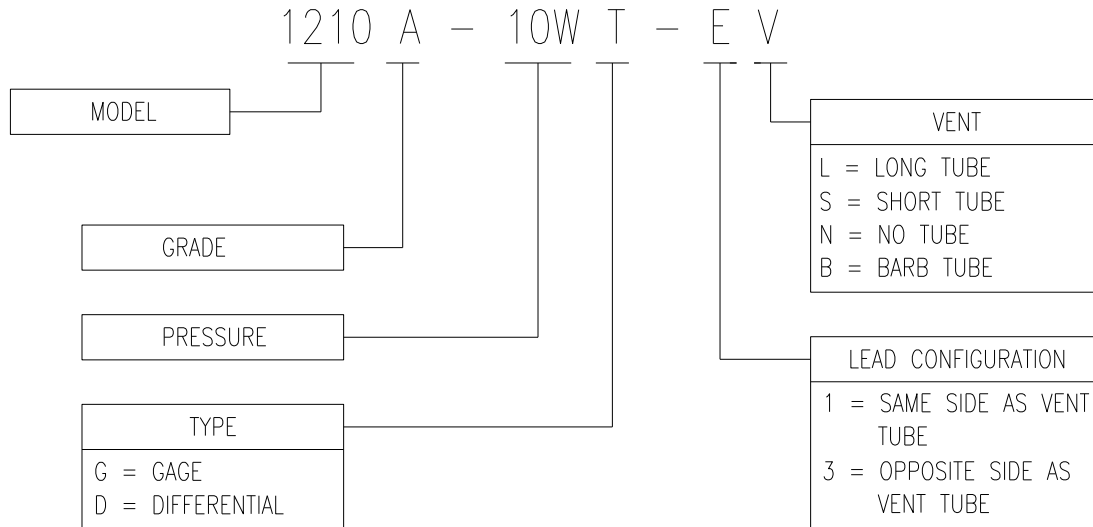
## APPLICATION SCHEMATIC



APPLICATION SCHEMATIC

# 1210 Sub psi

## ORDERING INFORMATION



### NORTH AMERICA

Measurement Specialties  
45738 Northport Loop West  
Fremont, CA 94538  
Tel: 1-800-767-1888  
Fax: 1-510-498-1578  
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78340 Les Clayes-sous-Bois, France  
Tel: +33 (0) 130 79 33 00  
Fax: +33 (0) 134 81 03 59  
Sales: [pfg.cs.emea@meas-spec.com](mailto:pfg.cs.emea@meas-spec.com)

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