

## Pressure Sensor

### Low Pressure Sensor

*SXL Series*

#### FEATURES

- Accurate low pressure readings
- Low cost
- High impedance bridge
- Low noise
- Low power consumption for battery operation

#### TYPICAL APPLICATIONS

- Medical instrumentation
- Portable and battery-operated equipment
- Air-flow monitoring
- HVAC
- Industrial controls



The SXL series of pressure sensors provides the lowest cost components for measuring very low pressures. These low pressure range devices were specifically designed to accurately measure differential and gage pressures of 1 inch to ten inches of H<sub>2</sub>O.

They are meant for use with non-corrosive and non-ionic media, such as air, dry gases, and the like.

These differential devices allow application of pressure to either side of the diaphragm and can be used for gage or differential pressure measurements.

#### **WARNING**

##### **PERSONAL INJURY**

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

#### **WARNING**

##### **MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

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### ABSOLUTE MAXIMUM RATINGS

|                                             | Ratings                         |
|---------------------------------------------|---------------------------------|
| Supply voltage                              | 5 Vdc                           |
| Temperature ranges                          |                                 |
| Operating                                   | 0 °C to 50 °C [32 °F to 122 °F] |
| Storage                                     | 0 °C to 70 °C [32 °F to 158 °F] |
| Common mode pressure                        | 150 in. H <sub>2</sub> O        |
| Lead temperature (soldering 2 to 4 seconds) | 250 °C [482 °F]                 |
| Burst pressure                              | 7 psi = 194 in H <sub>2</sub> O |

### PERFORMANCE SPECIFICATIONS <sup>(1)</sup>

|                                                              | Min. | Typ.  | Max.  | Unit                       |
|--------------------------------------------------------------|------|-------|-------|----------------------------|
| Operating pressure                                           | -    | 10.0  | -     | In. H <sub>2</sub> O       |
| Sensitivity Ta = 25 °C [77 °F]                               | 0.4  | 0.9   | 1.6   | mV/V/ In. H <sub>2</sub> O |
| Full-scale span 10 In. H <sub>2</sub> O <sup>(2)</sup>       | 20   | 45    | 80    | mV                         |
| Temperature coefficient of span <sup>(3, 4)</sup>            | -    | -2300 | -     | ppm/°C                     |
| Zero pressure offset Ta = 25 °C [77 °F]                      | -35  | -20   | 0     | mV/V                       |
| Temperature coefficient of offset <sup>(3)</sup>             | -    | ± 4   | -     | µV/V/°C                    |
| Combined linearity and hysteresis <sup>(5)</sup>             |      | ± 0.2 | ± 1.0 | % FS                       |
| Long-term stability of offset and sensitivity <sup>(6)</sup> | -    | ± 0.1 | -     | mV                         |
| Response time (10% to 90%) <sup>(7)</sup>                    | -    | 100   | -     | µS                         |
| Input resistance Ta = 25 °C [77 °F]                          | -    | 4     | -     | kOhm                       |
| Temperature coefficient of resistance <sup>(3, 4)</sup>      | -    | 750   | -     | ppm/°C                     |
| Output impedance                                             | -    | 4     | -     | kOhm                       |
| Repeatability <sup>(8)</sup>                                 | -    | 0.5   | -     | % FSS                      |

### SPECIFICATION NOTES

- Reference conditions: supply voltage Vs = 5 Vdc, Ta = 25 °C [77 °F]. Common-mode line pressure = 0 psig. Pressure applied to P2.
- Span is the algebraic difference between the output voltage at full-scale pressure and the output at zero pressure.
- Slope of the best straight line from 0 °C to 50 °C [32 °F to 122 °F]. For operation outside this temperature, contact factory for more specific application information.
- This parameter is not 100% tested. It is guaranteed by process design and tested on a sample basis only.
- See definition of terms. Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure
- Long-term stability over a one year period.
- Response time for a 0 PSI to full-scale span pressure step change. 10 % to 90 % rise time.
- Maximum difference in output at any pressure with the operating pressure range and temperature within 0 °C to 50 °C [32 °F to 122 °F] after
  - 100 temperature cycles, 0 °C to 50 °C [32 °F to 122 °F]
  - 1.5 million pressure cycles, 0 PSI to full-scale span.
- If the maximum burst pressure is exceeded, even momentarily, the package may leak or burst, or the pressure sensing die may fracture.

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FIGURE 1. EQUIVALENT CIRCUIT

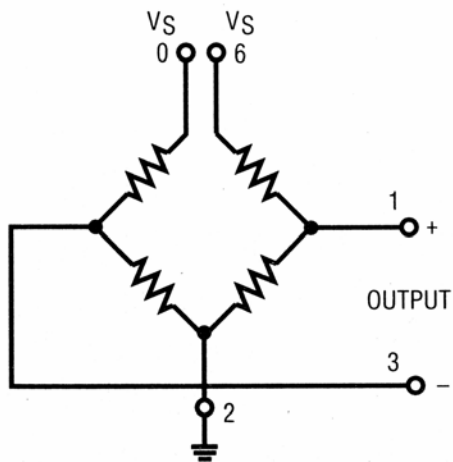
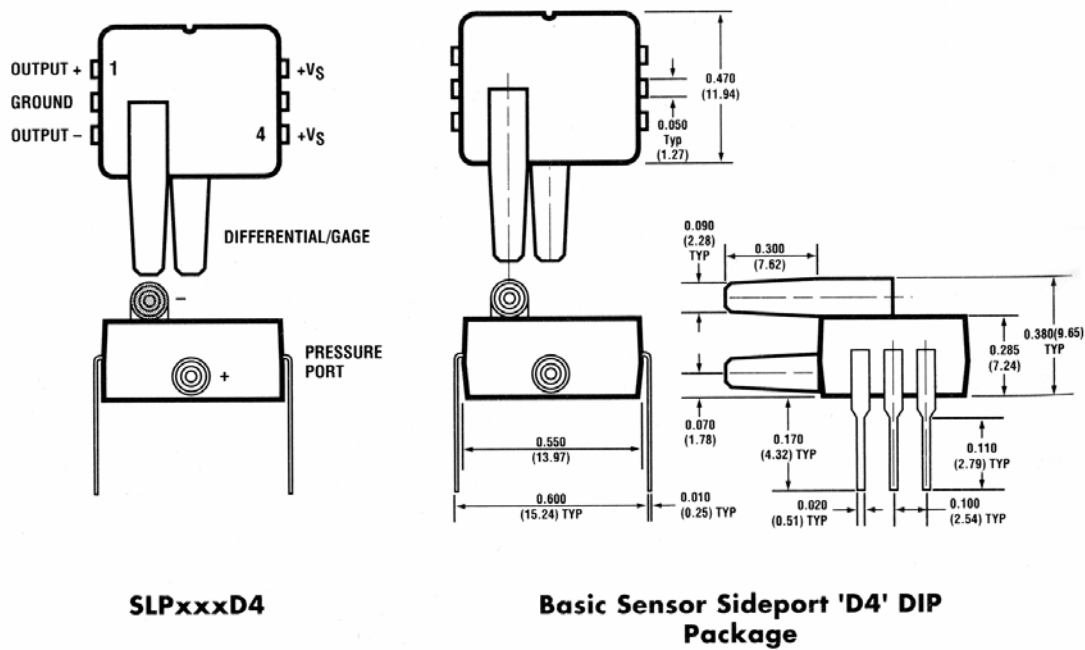


FIGURE 2. DIMENSIONAL DRAWING  
(FOR REFERENCE ONLY)

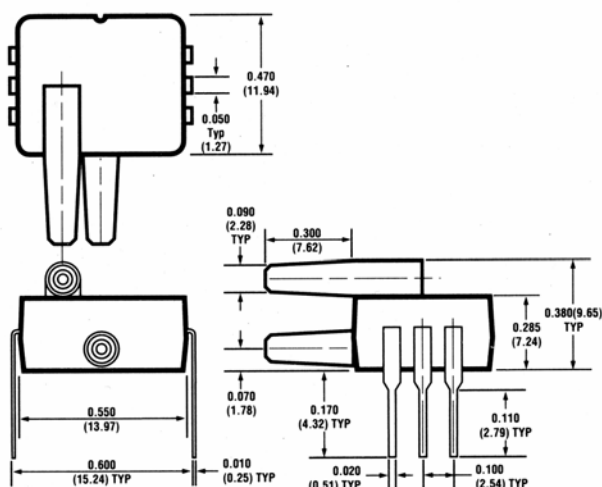


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FIGURE 3. DIMENSIONAL DRAWING – D4 SENSOR - (FOR REFERENCE ONLY)



### ORDER GUIDE

|           | Pressure Range                                      |
|-----------|-----------------------------------------------------|
| SXL010D   | 0 to 10 in H <sub>2</sub> O/Standard Package        |
| SXL010DD4 | 0 to 10 in H <sub>2</sub> O/Sideport D4 DIP Package |

### WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. **The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For application assistance, current specifications, or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

1-800-537-6945 USA/Canada

1-815-235-6847 International

### FAX

1-815-235-6545 USA

### INTERNET

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### Sensing and Control

[www.honeywell.com/sensing](http://www.honeywell.com/sensing)

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