

## Micromachined Silicon Pressure Sensors

Compensated Pressure Sensors

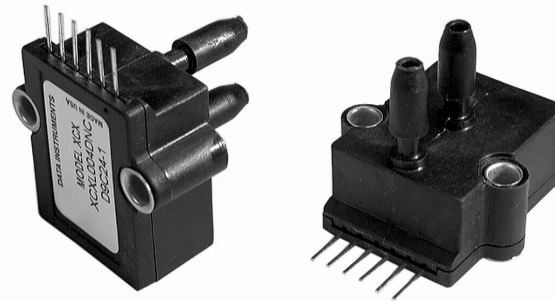
*XCXL, XCX Series*

### FEATURES

- Pressure Ranges from 4 in H<sub>2</sub>O, 10 in H<sub>2</sub>O and 1 psi through 150 psi
- Calibrated offset to  $\pm$ mV
- Calibrated Full Scale Span to  $\pm$ 1.0 % FS over Compensated Temperature Range
- Temperature Compensated over 0°C to +70°C
- Gage, Differential, and Absolute Pressure
- Burst Pressure 3X Rated
- Ratiometric mV Output

### TYPICAL APPLICATIONS

- Medical Applications
- Applications Requiring Small Size
- Applications Requiring Vacuum, Positive Pressure or Both



The XCXL, XCX Series integrates silicon micromachined sensing technology, temperature compensation, and calibration in an improved performance industry standard package. A unique stress isolating design protects against torque induced errors typically found in competitive products. Additional stability and long term accuracy improvements are gained through simplified compensation techniques, which eliminate temperature dependent thermal compensation.

This series is available in a commercial (XCX-DNC) performance level. This performance level provides the calibration accuracy of offset thermal compensation, and linearity providing added flexibility to meet critical performance budgets. The XCA and XCR Series provide amplified output as well as integrated compensation.

### **▲**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 product installation information.
- 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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## Compensated Pressure Sensors

*XCXL, XCX Series*

### XCX Electrical Specifications at 12 Vdc Excitation, 25°C\*

|  | XCXL |      |      | Units               | XCX  |      |      | Units      |
|--|------|------|------|---------------------|------|------|------|------------|
|  | Min. | Typ. | Max. |                     | Min. | Typ. | Max. |            |
| Excitation Voltage                           | 3.0  | 12.0 | 16.0 | Vdc                 | 3.0  | 12.0 | 16.0 | Vdc        |
| Null   | --   | ±1.0 | ±1.5 | mV                  | --   | --   | 1.0  | mV         |
| Offset Temperature Shift (0°C to 70°C)**     | --   | ±0.5 | ±1.5 | mV                  | --   | 0    | ±1.0 | mV         |
| Full Scale Temperature Shift (0°C to 70°C)** | --   | ±0.5 | ±1.0 | % Span              | --   | --   | ±2.0 | % Span     |
| Linearity, Hysteresis Error***               | --   | 0.2  | ±1.0 | % Span              | --   | --   | ±0.2 | % Span     |
| Input Resistance                             | 10.0 | --   | --   | k $\Omega$          | --   | 15.0 | --   | k $\Omega$ |
| Output Resistance                            | --   | 3.0  | --   | k $\Omega$          | --   | 3.0  | --   | k $\Omega$ |
| Common Mode Pressure                         | --   | --   | 50   | psi                 | --   | --   | 50   | psi        |
| Operating Temperature                        | -25  | --   | +85  | °C                  | -25  | --   | +85  | °C         |
| Storage Temperature                          | -40  | --   | +125 | °C                  | -40  | --   | +125 | °C         |
| Proof Pressure                               | --   | 100  | --   | in H <sub>2</sub> O | --   | 3X   | --   | FS         |
| Burst Pressure                               | --   | 20X  | --   | FS                  | --   | 5X   | --   | FS         |
| Weight                                       | --   | 2    | --   | gram                | --   | 2    | --   | gram       |

\*Note 1: All parameters are measured at 12 Vdc excitation, pressure specs obtained with pressure applied to the front of the sensor.

\*\*Note 2: Shift is relative to 25°C

\*\*\*Note 3: Measured at ½ full scale rated pressure using BFSL

### XCX DIFFERENTIAL and GAGE Output at 12 Vdc Excitation @ 25°C

| FS Pressure (psi)      | XCX Output at Full Scale Span |        |        | Units |
|------------------------|-------------------------------|--------|--------|-------|
|                        | Min.                          | Typ.   | Max.   |       |
| 4 in H <sub>2</sub> O  | 38.00                         | 40.00  | 42.00  | mV    |
| 10 in H <sub>2</sub> O | 19.00                         | 20.00  | 21.00  | mV    |
| 1                      | 17.00                         | 18.00  | 19.00  | mV    |
| 5                      | 57.00                         | 60.00  | 63.00  | mV    |
| 15                     | 85.00                         | 90.00  | 95.00  | mV    |
| 30                     | 85.00                         | 90.00  | 95.00  | mV    |
| 60                     | 85.00                         | 90.00  | 95.00  | mV    |
| 100                    | 95.00                         | 100.00 | 105.00 | mV    |
| 150                    | 85.00                         | 90.00  | 95.00  | mV    |

### XCX ABSOLUTE Output at 12 Vdc Excitation @ 25°C

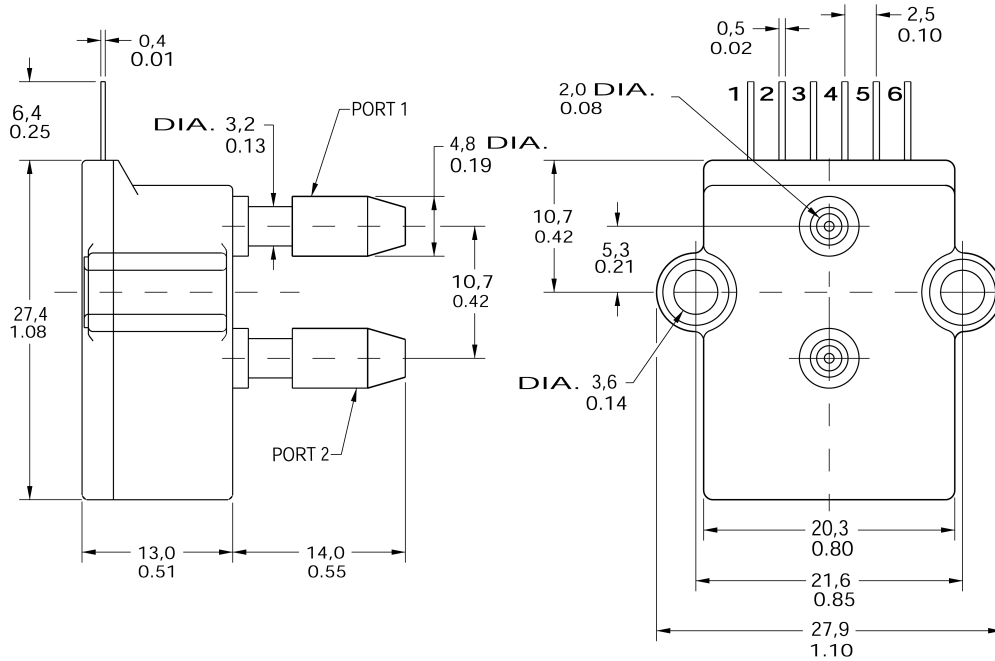
| FS Pressure (psi) | XCX Output Full Scale Span |        |        | Units |
|-------------------|----------------------------|--------|--------|-------|
|                   | Min.                       | Typ.   | Max.   |       |
| 5                 | 57.00                      | 60.00  | 63.00  | mV    |
| 15                | 85.00                      | 90.00  | 95.00  | mV    |
| 30                | 85.00                      | 90.00  | 95.00  | mV    |
| 60                | 85.00                      | 90.00  | 95.00  | mV    |
| 100               | 95.00                      | 100.00 | 105.00 | mV    |
| 150               | 85.00                      | 90.00  | 95.00  | mV    |

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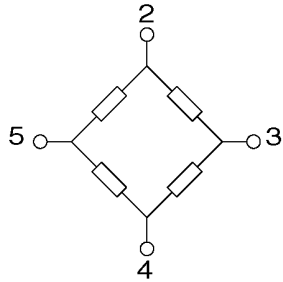
## Compensated Pressure Sensors

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### MOUNTING DIMENSIONS (for reference only) mm/in XCX SERIES, XCX MOLDED PACKAGE



### EQUIVALENT CIRCUIT



### PINOUT

1. N/C
2. +V Excitation
3. + Output Signal
4. -V Excitation
5. - Output Signal
6. N/C

### MEDIA COMPATIBILITY, WETTED MATERIALS

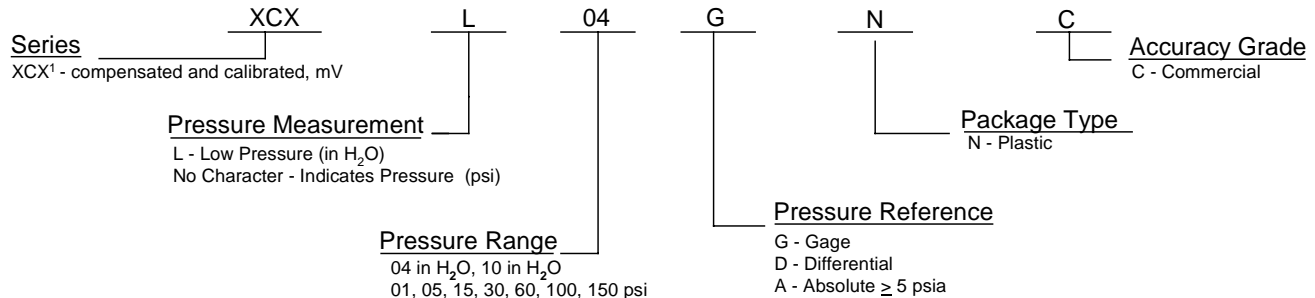
|        |  |
|--------|--|
| Port 2 | <b>P2 Port:</b> Media must be compatible with nylon housing, epoxy adhesive and silicon. |
| Port 1 | <b>P1 Port: Dry Gases Only.</b> Media must be compatible with epoxy based adhesive.      |

# Micromachined Silicon Pressure Sensors

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### XCX SERIES ORDER GUIDE



NOTE: 1. Gage and Differential use "D" suffix. Product is the same.

### 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.

**Note:** Not all product combinations are released. For additional information, please contact the Application Center in Acton, MA at 1-800-333-3283.

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

1-800-333-3282

#### FAX

1-978-263-0630

#### INTERNET

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