

## Microstructure Pressure Sensors

Compensated 0 in H<sub>2</sub>O to 5 H<sub>2</sub>O in H<sub>2</sub>O  
and 0 in H<sub>2</sub>O to 10 in H<sub>2</sub>O

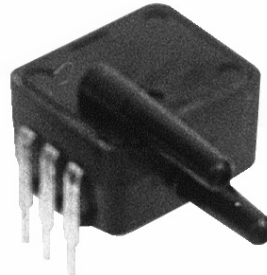
*SDX IND Series*

### FEATURES

- Low Cost Dual Inline Package
- Temperature Compensated
- Calibrated Zero and Span
- Small Size
- Low Noise
- High Impedance for Low Power Applications

### TYPICAL APPLICATIONS

- Medical Equipment
- Computer Peripherals
- Pneumatic Controls
- HVAC



The SDX series sensors provide a very cost effective solution for pressure applications that require small size plus performance. These calibrated and temperature compensated sensors give an accurate and stable output over a 0 °C to 50 °C [32 °F to 122 °F] range. This series is intended for use with non-corrosive, non-ionic working fluids, such as, air and other dry gases.

The SDX series devices are specifically designed to measure low pressures with a 0 in H<sub>2</sub>O to 10.0 in H<sub>2</sub>O full scale range. The output of the bridge is ratiometric to the supply voltage up to 20.0 Vdc is acceptable.

The SDX series devices feature an integrated circuit sensor element and laser trimmed thick film ceramic housed in a compact solvent resistant case. The package is a double wide (i.e. 15,24 mm [0.600 in] lead spacing) dual in-line package. This is the same familiar package used by IC manufactures except it has integral pressure port(s). The PC board area used by each DIP is approximately 6,60 mm<sup>2</sup> [0.26 in<sup>2</sup>]. This extremely small size enables the use of multiple sensors in limited available space. The DIP provides excellent isolation to external package stress.

The DIP mounts on a PC board like a standard IC with through-hole pins. The pins anchor the pressure sensor to the PC board which provides a more secure and stable unit than other types of packages.

### **⚠ 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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## PRESSURE RANGE SPECIFICATIONS

Listing	Operating Pressure	Proof Pressure	Full-Scale Span <sup>(1)</sup>		
			Min.	Typ.	Max.
SDX005IND4	0 in H <sub>2</sub> O to 5 in H <sub>2</sub> O	193 in H <sub>2</sub> O	19.5 mV	20.0 mV	20.5 mV
SDX010IND4	0 in H <sub>2</sub> O to 10 in H <sub>2</sub> O	193 in H <sub>2</sub> O	24.5 mV	25.0 mV	25.5 mV

## GENERAL SPECIFICATIONS (all devices)

Characteristic	Description (Maximum Ratings)
Supply Voltage (Vs)	20.0 Vdc
Maximum Pressure on any Port	50 psig
Lead Temperature (Soldering 10 Sec.)	250 °C [482 °F]
Burst Pressure	193 H <sub>2</sub> O [7 psi]

## ENVIRONMENTAL SPECIFICATIONS (all devices)

Compensated Operating Temperature	0 °C to 50 °C [32 °F to 122 °F]
Operating Temperature	-40 °C to 85 °C [-40 °F to 185 °F]
Storage Temperature	-55 °C to 125 °C [-67 °F to 257 °F]
Humidity Limits	0 % RH to 100 % RH

## PERFORMANCE SPECIFICATIONS (all devices) <sup>(2)</sup>

Characteristic	Min.	Typ.	Max.	Unit
Zero Pressure Offset	-1.0	0	+ 1.0	mV
Combined Linearity and Hysteresis <sup>(3)</sup>	-	± 0.2	± 1.0	% FSS
Temperature Effect on Span 0 °C to 50 °C [32 °F to 122 °F] <sup>(4)</sup>	-	± 0.4	± 2.0	% FSS
Temperature Effect on Offset 0 °C to 50 °C [32 °F to 122 °F] <sup>(4)</sup>	-	± 0.2	± 0.6	mV
Repeatability <sup>(5)</sup>	-	± 0.5	-	% FSS
Input Resistance <sup>(6)</sup>	-	4.0	-	KΩ
Output Resistance <sup>(7)</sup>	-	4.0	-	KΩ
Common-Mode Voltage <sup>(8)</sup>	1.5	3.0	5.0	Vdc
Response Time <sup>(9)</sup>	-	100	-	μsec
Long Term Stability of Offset and Span <sup>(10)</sup>	-	± 0.1	-	% FSS

## SPECIFICATION NOTES

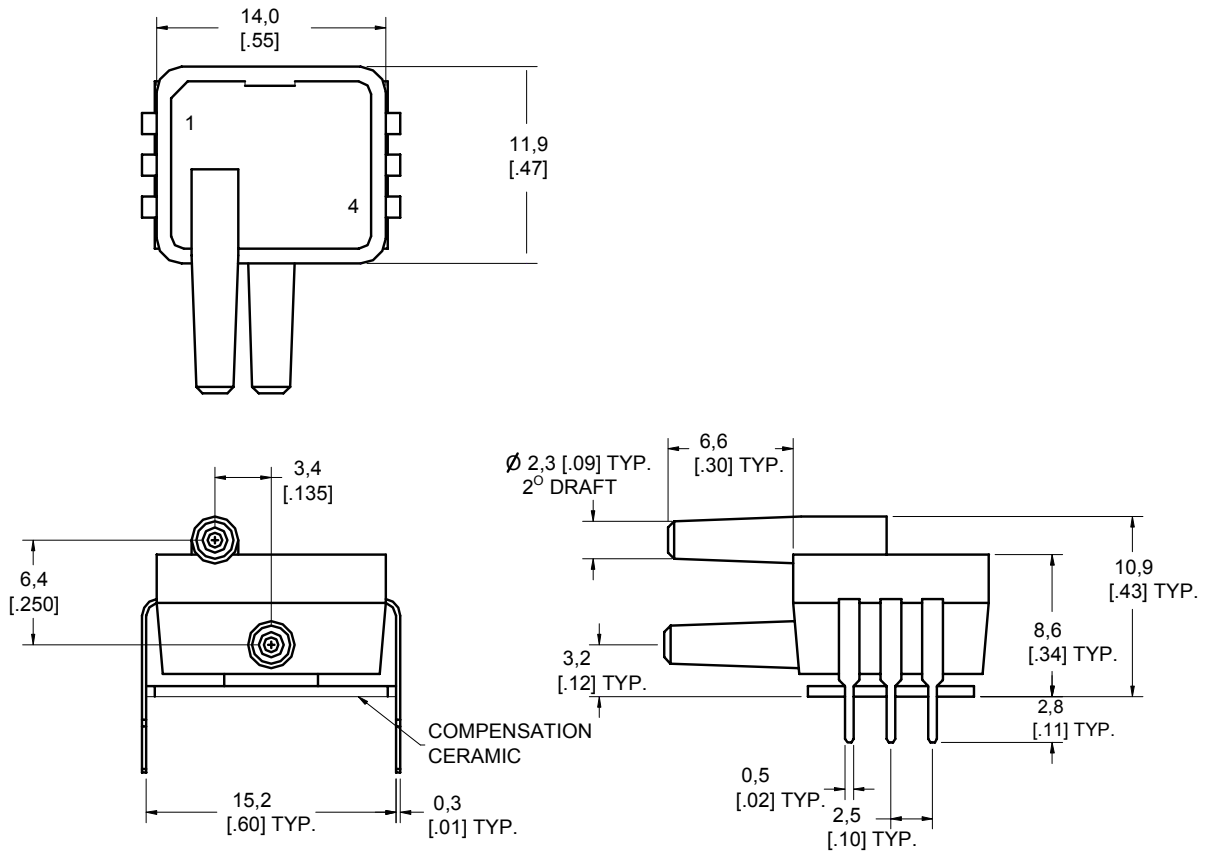
- Note 1: Span is the algebraic difference between the output voltage at full-scale pressure and the output at zero pressure. Span is ratiometric to the supply voltage.
- Note 2: Reference conditions (unless otherwise noted): Supply voltage, V<sub>s</sub> = 12 Vdc, T<sub>A</sub> = 25 °C [77 °F], Common Mode Line Pressure = 0 psig, pressure applied to port 2
- Note 3: Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
- Note 4: Maximum error band of the offset voltage and the error band of the span, relative to the 25 °C [77 °F] reading.
- Note 5: Maximum difference in output at any pressure within 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]
  - 1.0 million pressure cycles, 0 in H<sub>2</sub>O to full-scale span
- Note 6: Input impedance is the impedance between V<sub>s</sub> and ground
- Note 7: Output impedance is the impedance between the + and - outputs.
- Note 8: This is the common-mode voltage of the output arms for V<sub>S</sub> = 12 Vdc
- Note 9: Response time for a 0 psi to full-scale span pressure step change, 10 % to 90 % rise time.
- Note 10: Long term stability over a one year period.

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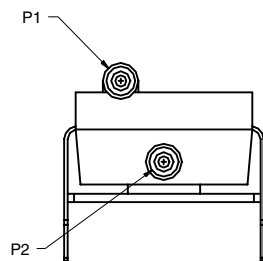
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*SDX IND Series*

**PHYSICAL DIMENSIONS** for reference only mm [in]



## PORT CONFIGURATION

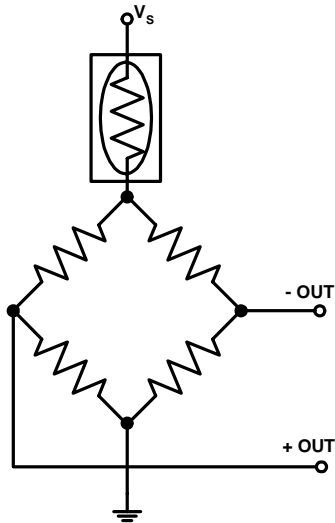


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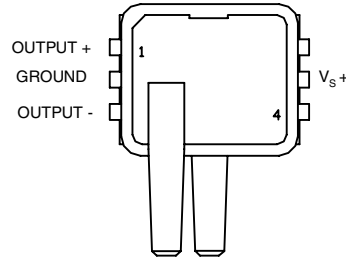
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## EQUIVALENT CIRCUIT



## ELECTRICAL CONNECTIONS



## ORDER INFORMATION

Listings	Operating Pressure Range
SDX005IND4	0 in H <sub>2</sub> O to 5 in H <sub>2</sub> O
SDX010IND4	0 in H <sub>2</sub> O to 10 in H <sub>2</sub> O

## WARRANTY/REMEDY

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