SCXL004DN

Precision Compensated, Low Pressure Sensors

FEATURES

- **0 - 4 In. H_2O**
- **Very Low Pressure Resolution**
- **Precision Temperature Compensation**
- **Low Noise**
- **Calibrated Zero and Span**
- **High Impedance for Low Power Applications**

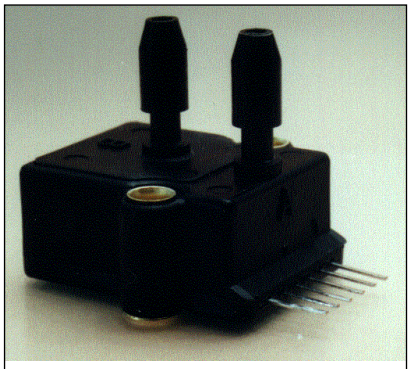
GENERAL DESCRIPTION

The SCXL series sensors provide a very cost effective solution for pressure applications that require high accuracy over very low operating pressure ranges.

These internally calibrated and temperature compensated sensors were specifically designed to provide an accurate and stable output over a 0°C to 50°C temperature range.

This series is intended for use with non-corrosive, non-ionic working fluids such as air and dry gases.

The output of the bridge is ratiometric to the supply voltage and operation from any D.C. supply voltage up to +18V is acceptable.

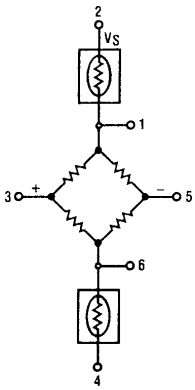


Scale: 1cm
½ inch

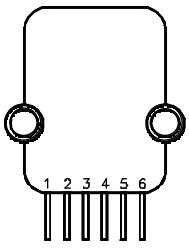
APPLICATIONS

- **Air Flow**
- **Respirators**
- **HVAC**

EQUIVALENT CIRCUIT



ELECTRICAL CONNECTIONS



Bottom View

Pin 1. Temperature Output (+)
Pin 2. V_S
Pin 3. Output (+)
Pin 4. Ground
Pin 5. Output (-)
Pin 6. Temperature Output (-)

Note: The polarity indicated is for pressure applied to port B

SENSORTECHNICS

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SCXL004DN

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SenSym

PRESSURE SENSOR CHARACTERISTICS

MAXIMUM RATINGS

Supply Voltage V_S	+18 V_{DC}
Common-mode Pressure	150 In. H_2O
Lead Temperature (Soldering, 4 seconds)	250°C
Proof Pressure	10 In. H_2O
Burst Pressure	5 psi

ENVIRONMENTAL SPECIFICATIONS

Temperature Range	
Compensated	0 to 50°C
Operating	0°C to 70°C
Storage	0°C to 70°C
Humidity Limits	0 to 80 %RH

WARNING:

Due to the delicate nature of these very sensitive devices, some special handling is required. Parts are sensitive to shock and vibration and must be handled with care. Dropping on any hard surface (bench top etc.) can destroy the device. Note 10 In. H_2O max. overpressure.

SCXL004 PERFORMANCE CHARACTERISTICS

Characteristic	Min.	Typ.	Max.	Unit
Operating Pressure Range	---	---	4	In. H_2O
Sensitivity	---	10	---	mV/In. H_2O
Full-scale Span[2]	38	40	42	mV
Zero Pressure Offset	-1.5	0	1.5	mV
Combined Linearity and Hysteresis[3]	---	±0.5	±1.0	%FS
Temperature Effect on Span (0-50°C)[4]	---	±0.5	±2.0	%FS
Temperature Effect on Offset (0-50°C)[4]	---	±0.50	±1.5	mV
Repeatability[5]	---	±0.2	---	%FS
Input Impedance[6]	---	4.0	---	kΩ
Output Impedance[7]	---	4.0	---	kΩ
Common-mode Voltage[8]	5.7	6.0	6.3	V_{DC}
Response Time[9]	---	500	---	µs
Long Term Stability of Offset and Span[10]	---	±0.5	---	%FS
Position Sensitivity	---	0.25	---	mV/g
Proof Pressure[11]	---	10	---	In. H_2O

SPECIFICATION NOTES:

1. Reference conditions: Unless otherwise noted: Supply voltage, V_S = 12 V, T_A = 25°C, Common-mode Line Pressure = 0 psig, Pressure Applied to Port B.
2. 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.
3. Zero pressure effect is measured with pins pointed towards the ground. Offset can be position sensitive.
4. Maximum error band of the offset voltage and the error band of the span, relative to the 25°C reading.
5. Maximum difference in output at any pressure with the operating pressure range and temperature within 0°C to +50°C after:
   a) 100 temperature cycles, 0°C to 50°C
   b) 1.0 million pressure cycles, 0 psi to full-scale span
6. Input impedance is the impedance between pins 2 and 4.
7. Output impedance is the impedance between pins 3 and 5.
8. This is the common-mode voltage of the output arms (Pins 3 and 5) for V_S = 12 V.
9. Response time for a 0 psi to full-scale span pressure step change, 10% to 90% rise time.
10. Long term stability over a one year period.
11. Proof pressure is the pressure above which devices will not return to guaranteed specifications.

January 1998/043

SENSORTECHNICS
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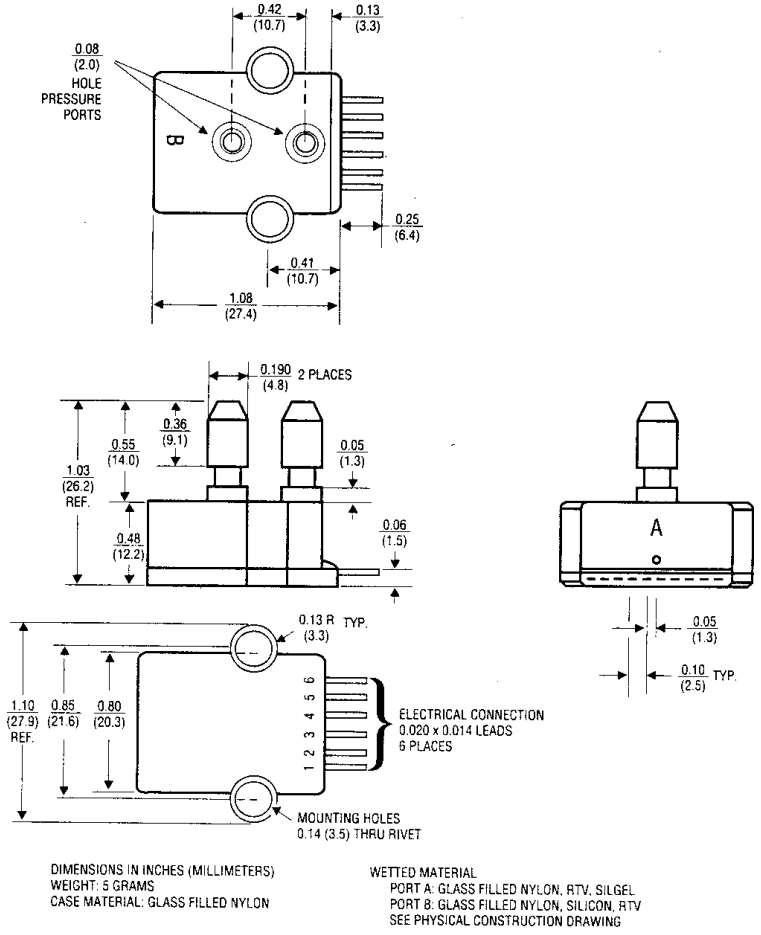
PHYSICAL DIMENSIONS



Mass: 5 grams

Dimensions in inches (mm)

ORDERING INFORMATION

To order, use the following part number.

Description	Part Number
0 to 4 In. WC	SCXL004DN

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