

### FEATURES

- 0...10 "H<sub>2</sub>O
- Small surface mount package
- Gage and absolute pressure
- Low profile and ported packages
- Low cost

### GENERAL DESCRIPTION

The SXL010GSMT surface mount sensor provides the most cost effective method of measuring gage pressures in a fully packaged part.

SenSym's unique package now allows accurate measurement of gage pressure of 0...10 "H<sub>2</sub>O in a true ceramic surface mount housing.

The SXL010GSMT offers a 4-pin closed bridge configuration for electrical connection with additional pads provided for mechanical support.

The SXL010GSMT is designed primarily for use with clean dry gases such as air, nitrogen and the like.



Scale: 1 cm  
1/2 inch

### APPLICATIONS

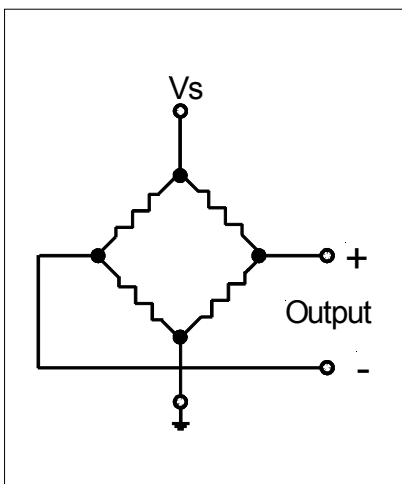
- Medical instrumentation
- Barometers/Altimeters
- Industrial controls

### PRESSURE SENSOR CHARACTERISTICS

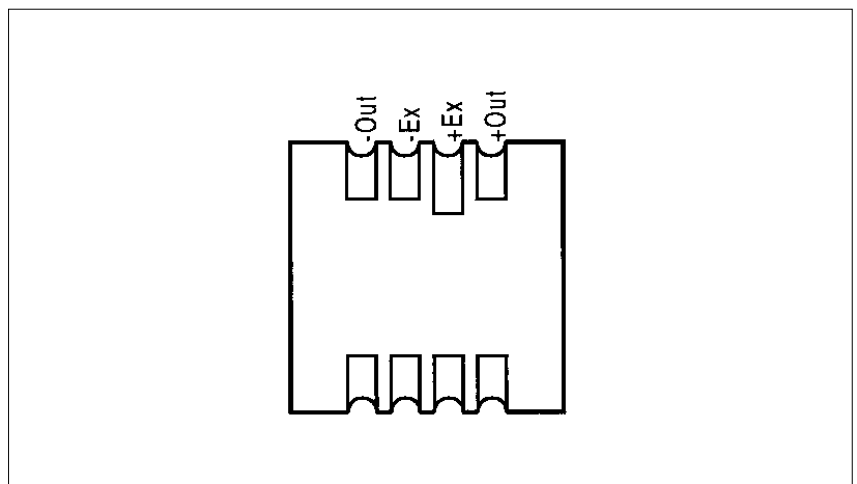
#### Maximum ratings (for all devices)

Supply voltage $V_s$	+12 VDC
Humidity	0 to 99% RH
Soldering temperature (2 - 4 sec.)	250°C
Proof pressure <sup>9</sup>	7 psi
Common mode pressure	50 psi
Temperature ranges	
Operating	-40 to +125°C
Storage	-55 to +125°C

### EQUIVALENT CIRCUIT



### ELECTRICAL CONNECTION



### PERFORMANCE CHARACTERISTICS<sup>1</sup>

Characteristics	Min.	Typ.	Max.	Unit
Operating pressure range	0		10	"H <sub>2</sub> O
Zero pressure offset (@T <sub>A</sub> = 25°C)	-35	-20	+20	mV
Full-scale span <sup>10</sup>	20	32.5	80	
Temp. coefficient <sup>5,8</sup>	span	-2300		ppm/°C
	resistance	+750		
Temp. effect <sup>5,8</sup>	offset	+4	---	µV/V/°C
Combined linearity and hysteresis <sup>3</sup>	---	0.2	1.0	%FS
Long term stability of offset and span <sup>7</sup>	---	0.1	---	mV
Response time (10 to 90 %) <sup>6</sup>	---	100	---	µs
Input resistance T <sub>A</sub> = 25°C	---	4.2	---	kΩ
Output impedance	---	4.2	---	
Repeatability	---	0.5	---	%FS

#### Specification notes:

- Reference conditions: supply voltage, V<sub>s</sub> = 5Vdc; T<sub>A</sub> = 0°C to 70°C; common-mode line pressure = 0 psig, pressure applied to P1 unless otherwise noted.
- Sensitivity is the ratio of the output signal voltage change to the corresponding input pressure change. The sensitivity is characterized by design and periodic production testing. This parameter is not 100 % tested in production.
- Linearity is based on best straight line. Hysteresis - the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.
- Difference in output at any pressure with the operating pressure range and temperature within 0°C to +70°C after:
  - 100 temperature cycles, 0°C to +70°C
  - 1.0 million pressure cycles, 0 psi to full-scale span.
- This is the best straight line fit for operation between 0°C to 70°C. For operation outside this temperature, contact factory for more specific application information.
- Response time for a 0 psi to full scale span pressure step change.
- Long term stability over a one year period.
- This parameter is not 100 % tested. It is guaranteed by process design and tested on a sample basis only. Temp. coefficient of span for the 1 and 5 psi devices is -2550ppm/C to -2050 ppm/C.
- If the proof pressure is exceeded even momentarily, the sensing die may fracture. However, when the devices operate in forward gage mode and no special care is taken, the package may leak when the pressure exceeds to specified value or 30 psi, whatever is less.
- Span is the algebraic difference between the output voltage at full scale pressure and the output at zero pressure.

### PHYSICAL DIMENSIONS

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