

Micromachined Silicon Pressure Sensors Uncompensated and Compensated and Calibrated

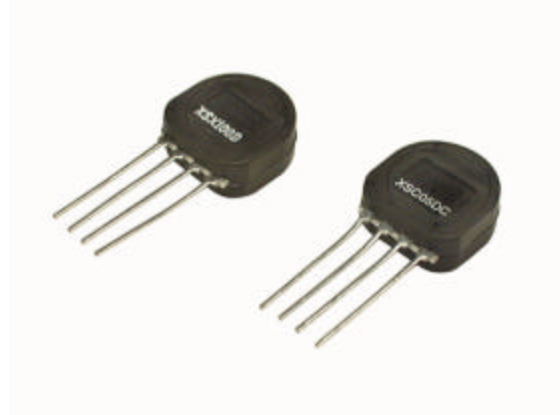
*XSXL, XSX,
XSCL, XSC Series*

FEATURES

- Low Cost, Small Size
- Temperature Compensated
- Zero and Span Calibrated
- Millivolt Output
- Differential, Gage and Absolute Pressure
- Constant Voltage Excitation
- High Impedance — Low Current

TYPICAL APPLICATIONS

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



The XSXL/XSX and XSCL/XSC Series sensors integrate silicon micromachined sensing technology, temperature compensation, and calibration in a complete family of low cost packages. This series offers the most cost-effective solution for design requirements.

These piezoresistive pressure sensors use micromachined silicon chips mounted on a ceramic and protected with a plastic cap. Several tube arrangements with nylon housings are available for various pressure applications.

On devices of 5 psi and above, the topside of the chip is protected against humidity by a Silgel coating. While the sensors are designed for use with noncorrosive, nonionic pressure media, they accommodate many gases that are used in medical applications.

⚠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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*XSXL, XSX,
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XSXL/XSX and XSCL/XSC Electrical Specifications at 12 ± 0.01 Vdc Excitation @ 25°C *

	XSXL and XSX			XSCL and XSC			Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Excitation Voltage	3.0	12.0	16.0	3.0	12.0	16.0	Vdc
Null	-120	0	+120	-1.0	0	+1.0	mV
Offset Temperature Shift (0°C to 70°C)**	--	± 0.5	--	--	--	± 1.0	mV
Full Scale Temperature Shift (0°C to 70°C)**	--	-2050 PPM/ $^\circ\text{C}$	--	--	--	± 2	% Span
Linearity, Hysteresis Error***	--	0.25	1.0	--	0.25	1.0	% Span
Input Resistance	5.0	--	--	5.0	--	--	k Ω
Output Resistance	--	3.0	--	--	3.0	--	k Ω
Operating Temperature	-25	--	+85	-25	--	+85	$^\circ\text{C}$
Storage Temperature	-40	--	+125	-40	--	+125	$^\circ\text{C}$
Common Mode Pressure			50			50	psi
Proof Pressure	3X	--	--	3X	--	--	FS
Proof Pressure XSXL/XSCL	100			100			in H ₂ O
Burst Pressure	5X	--	--	5X	--	--	FS
Weight		2			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 $\frac{1}{2}$ full scale rated pressure using BFSL

XSX/XSC Absolute Output at 12 Vdc ± 0.01 Excitation @ 25°C

FS Pressure (psi)	XSX Output Full Scale Span, (mV)			XSC Output Full Scale Span, (mV)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
5	270	420	540	57	60	63
15	405	630	810	85	90	95
30	405	630	810	85	90	95
60	454	634	813	85	90	95
100	504	708	912	95	100	105
150	450	630	810	--	--	--
300	324	612	900	--	--	--

XSXL/XSX and XSCL/XSC Gage and Differential* Output at 12 Vdc ± 0.01 Excitation @ 25°C

FS Pressure (psi)	XSXL/XSX Output Full Scale Span, (mV)			XSCL/XSC Output Full Scale Span, (mV)		
	Min.	Typ.	Max.	Min.	Typ.	Max.
4 in H ₂ O	50	68	86	23	25	27
10 in H ₂ O	22	42	62	19	20	21
1	96	180	204	17	18	19
5	270	420	540	57	60	63
15	405	630	810	85	90	95
30	406	630	810	85	90	95
60	454	634	813	85	90	95
100	504	708	912	95	100	105
150	450	630	810	85	90	95
300	324	612	900	--	--	--

*Differential Common Mode pressure should not exceed 50 psi

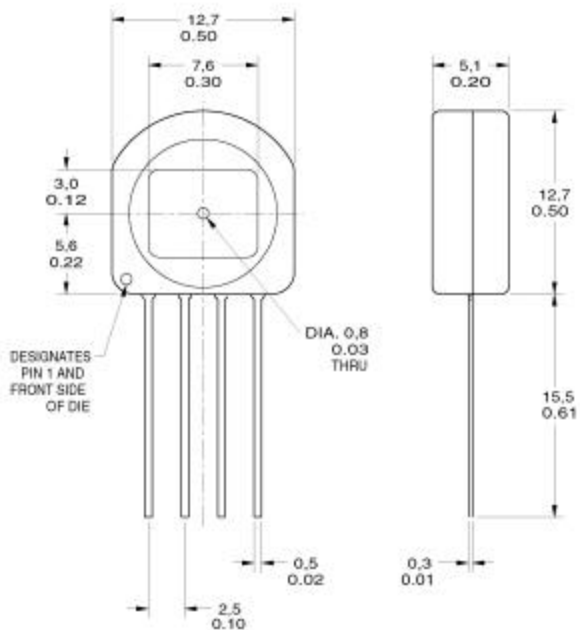
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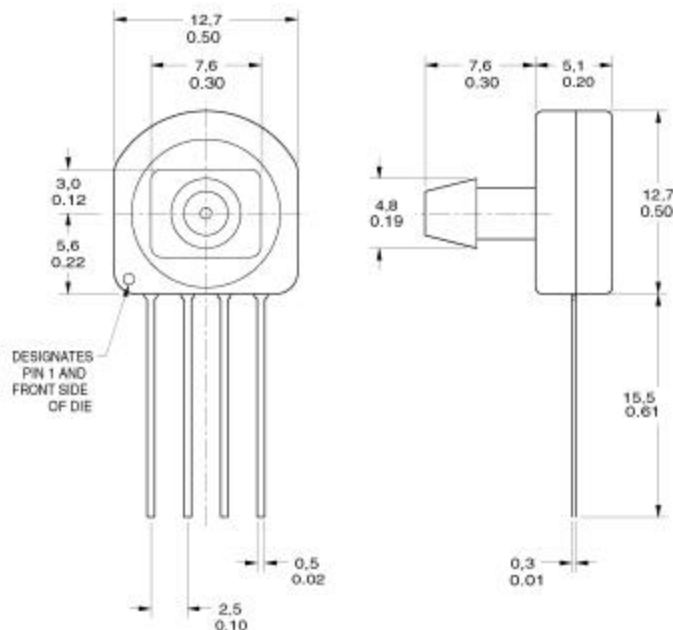
*XSXL, XSX,
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MOUNTING DIMENSIONS (for reference only) mm/in

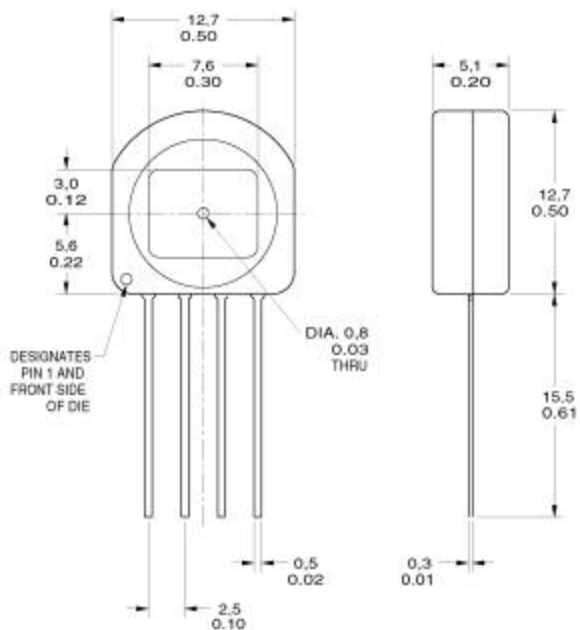
XSXL/XSX AND XSCL/XSC Series



XSC Ceramic without Port

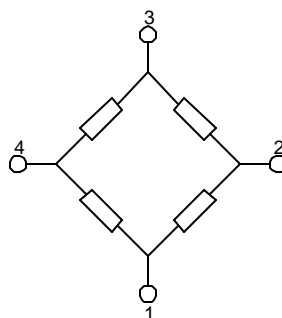


XSC Ceramic with Port (F)



XSCL/XSC Differential Port

EQUIVALENT CIRCUIT



PIN DESIGNATIONS

1. -V Excitation
2. + Output Signal
3. + V Excitation
4. - Output Signal

MEDIA COMPATIBILITY

P1 Port: Dry Gases Only. Media must be compatible with epoxy based adhesive
P2 Port: Media must be compatible with nylon housing, epoxy adhesive and silicon.

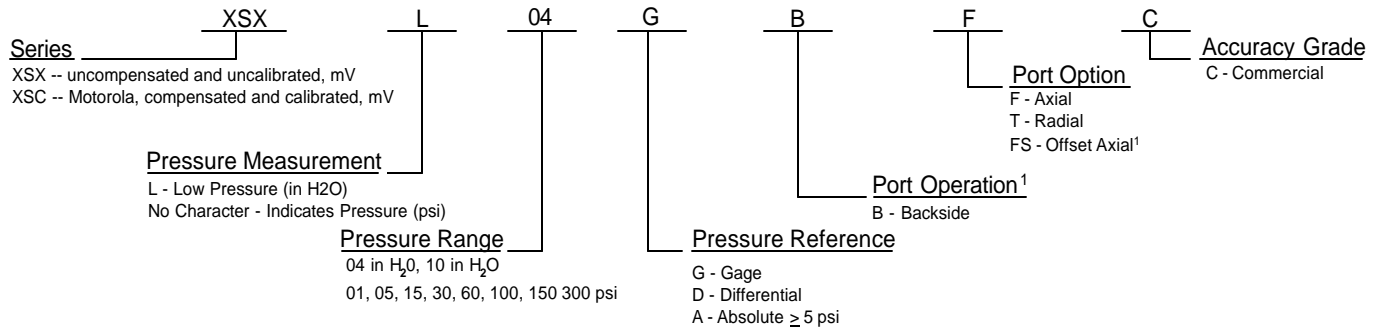
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XSXL/XSX and XSCL/XSC Series Order Guide

(Not all product combinations are released.)



NOTE 1: Option available in Ported Gage Version Only

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.**

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