

Micromachined Silicon Pressure Sensors

Uncompensated and
Compensated and Calibrated

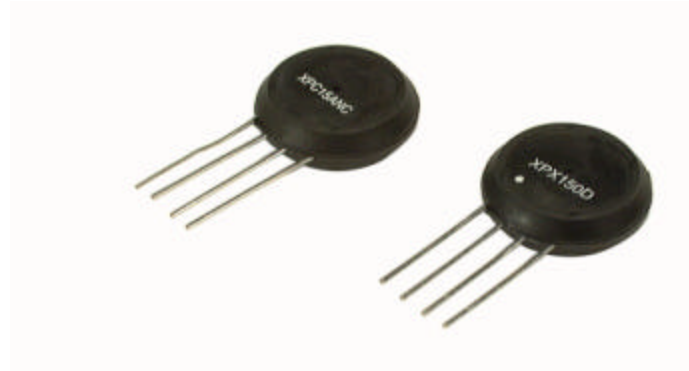
*XPXL, XPX,
XPCL, XPC Series*

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 XPXL/XPX and XPCL/XPC 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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XPXL/XPX and XPCL/XPC Electrical Specifications at 12 ±0.01 Vdc Excitation @ 25 °C*

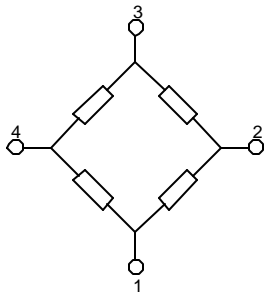
	XPXL and XPX			XPCL and XPC			Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Excitation Voltage	3.0	12.0	16.0	3.0	12.0	16.0	Vdc
Null	-120	0	+120	-1.0	0	+1.0	mV
Offset Temperature Shift (0 °C to 70 °C)**	--	±0.5	--	--	--	±1.0	mV
Full Scale Temperature Shift (0 °C to 70 °C)**	--	-2050 PPM/°C	--	--	--	±2	% Span
Linearity, Hysteresis Error***	--	0.25	1.0	--	0.25	1.0	% Span
Input Resistance	5.0	--	--	5.0	--	--	kΩ
Output Resistance	--	3.0	--	--	3.0	--	kΩ
Operating Temperature	-25	--	+85	-25	--	+85	°C
Storage Temperature	-40	--	+125	-40	--	+125	°C
Common Mode Pressure			50			50	psi
Proof Pressure	3X	--	--	3X	--	--	FS
Proof Pressure XPXL/XPCL	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 ½ full scale rated pressure using BFSL.

Equivalent Circuit



Pinout

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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XPX and XPC Absolute Output at 12 ± 0.01 Vdc Excitation, 25 °C

FS Pressure (psi)	XPX Output Full Scale Span, (mV)			XPC 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

XPXL, XPX and XPCL and XPC Gage and Differential* Output at 12 ± 0.01 Vdc Excitation, 25 °C

FS Pressure (psi)	XPXL and XPX Output Full Scale Span, (mV)			XPCL and XPC 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	264	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

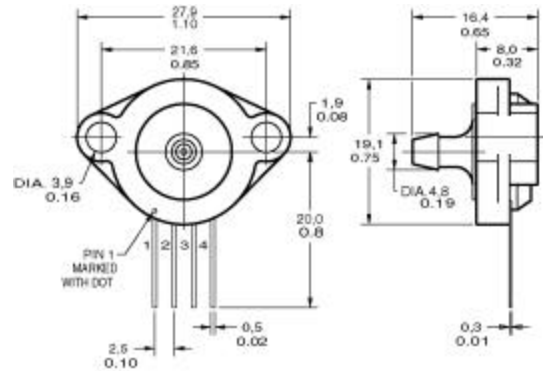
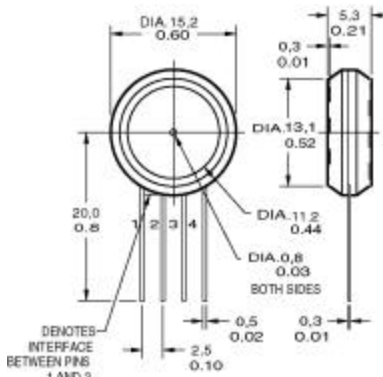
*Differential Common Mode Pressure should not exceed 50 psi.

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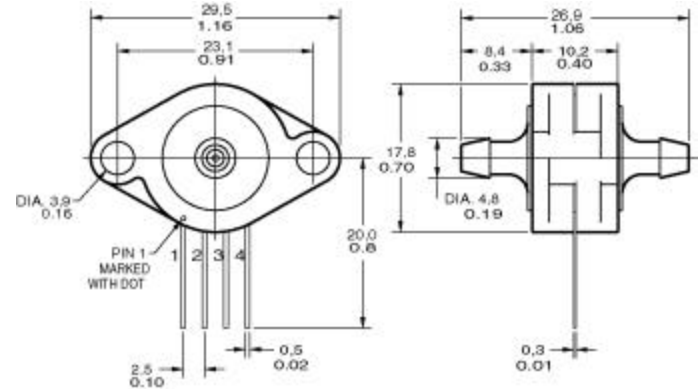
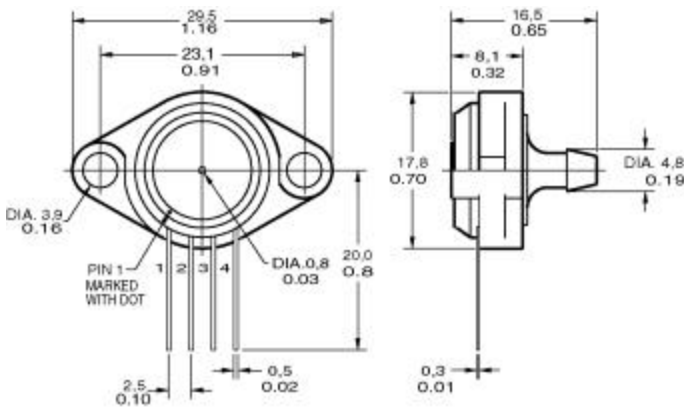
*XPXL, XPX,
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MOUNTING DIMENSIONS (for reference only) mm/in
XPXL/XPX and XPCL/XPC Series



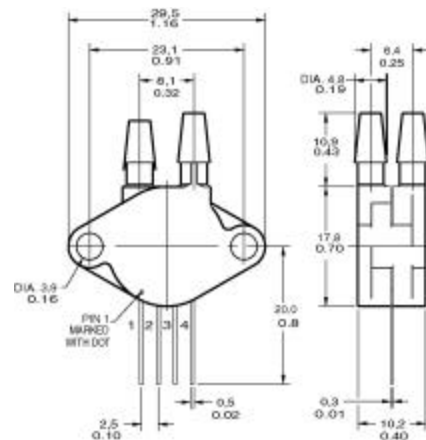
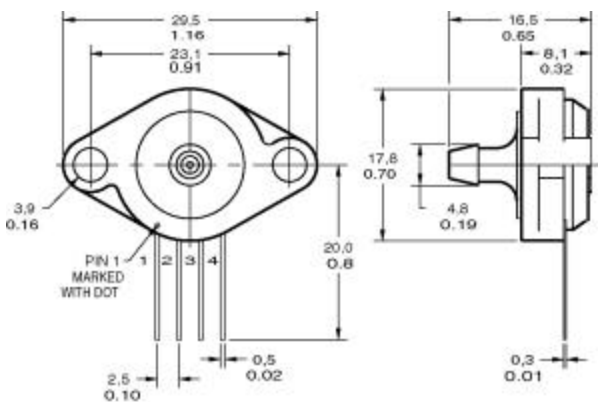
D/A Housing

GFS/AFS Housing



GBFS Housing

DF Housing



GF/AF Housing

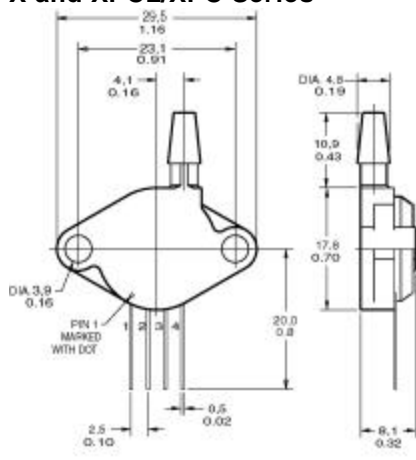
DT Housing

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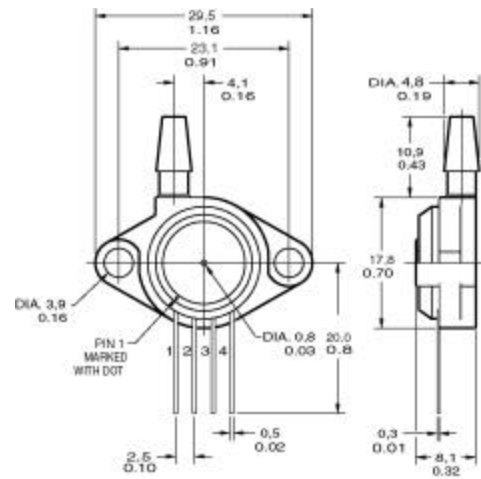
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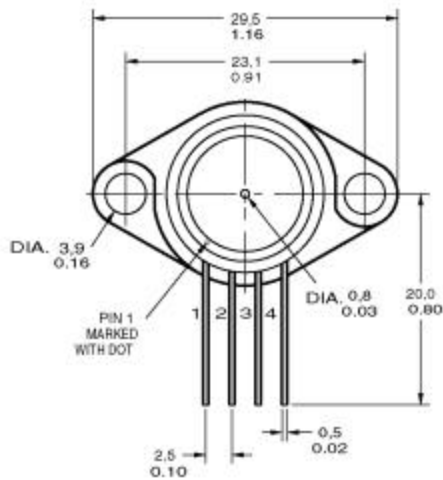
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XPXL/XPX and XPCL/XPC Series



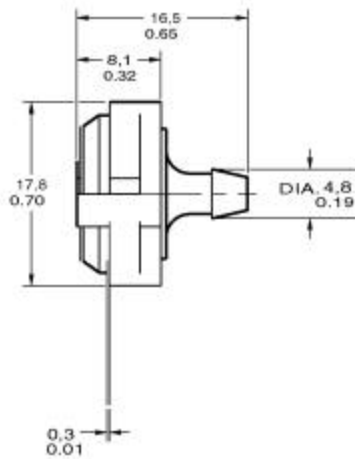
GT/AT Housing



GBT Housing



GBF Housing



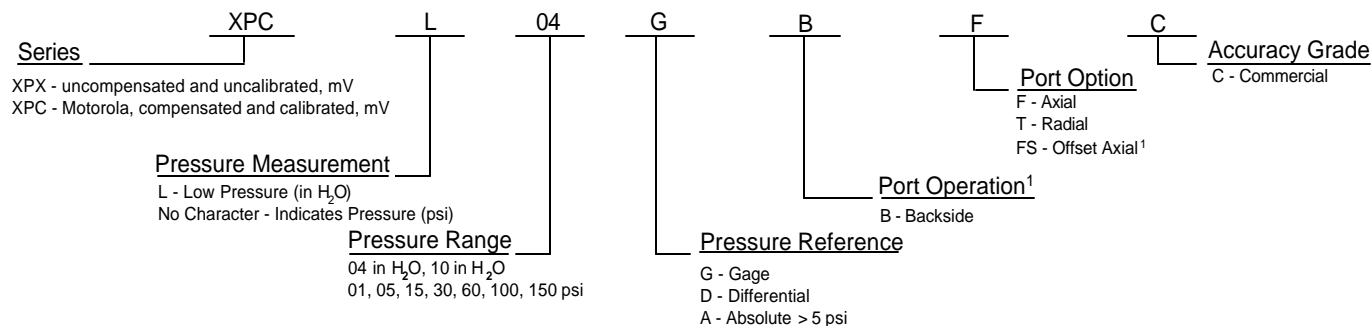
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XPXL/XPX Series and XPCL/XPC Series Order Guide

(Not all product combinations are released.)



NOTE 1: Option available in Ported Gage Version Only

WARRANTY/REMEDY

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