

XCX/XCXL Series

Compensated Silicon Pressure Sensors



DESCRIPTION

The XCX/XCXL Series integrates silicon micromachined sensing technology, temperature compensation, and calibration in an improved performance industry standard package.

A unique stress isolating design protects against torque induced.

Additional stability and long term accuracy improvements are gained through simplified compensation techniques, which eliminate temperature dependent thermal compensation

These products are available in High Grade (H) which are calibrated for full scale span to $\pm 1.0\%$ over compensated temperature range or in Commercial Grade (C) which are calibrated for full scale span to $\pm 2\%$ over compensated temperature range.

FEATURES

- Pressure ranges from 4 in H_2O , 10 in H_2O and 1 psi through 240 psi
- Calibrated offset
- High Grade (H) listings for high performance sensing solutions or Commercial Grade (C) listings for lower performance sensing solutions
- Temperature Compensated over $0\text{ }^{\circ}\text{C}$ to $70\text{ }^{\circ}\text{C}$ [$32\text{ }^{\circ}\text{F}$ to $158\text{ }^{\circ}\text{F}$]
- Gage, differential, and absolute pressure
- Ratiometric mV output

POTENTIAL APPLICATIONS

- Medical
- Applications requiring small size
- Applications requiring vacuum, positive pressure or both

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ELECTRICAL SPECIFICATIONS (At 12 Vdc Excitation at 25 °C⁽¹⁾ [77 °F].)

Characteristic	XCX/XCXL C Grade			XCX/XCXL H Grade			Unit
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Excitation voltage	3.0	12.0	16.0	3.0	12.0	16.0	Vdc
Null	–	–	1.0	–	±0.5	±1.0	mV
Temperature error on offset 0 °C to 50 °C [32 °F to 122 °F] ⁽²⁾ (4 in H ₂ O)	–	–	1.0	–	–	0.5	mV
Temperature error on offset 0 °C to 70 °C [32 °F to 158 °F] ⁽²⁾ (all except 4 in H ₂ O)	–	–	1.0	–	–	0.5	mV
Temperature error on span 0 °C to 50 °C [32 °F to 122 °F] ⁽²⁾ (4 in H ₂ O)	–	–	2.0	–	–	1.0	% span
Temperature error on span 0 °C to 70 °C [32 °F to 158 °F] ⁽²⁾ (all except 4 in H ₂ O)	–	–	2.0	–	–	1.0	% span
Linearity, hysteresis error ⁽³⁾	–	0.5	1.0	–	0.3	0.5	% span
Repeatability	–	0.1	–	–	0.1	–	% span
Input resistance	–	15	–	–	15	–	kΩ
Output resistance	–	3.0	–	–	3.0	–	kΩ
Compensated temperature range	0 [32]	25 [77]	70 [158]	0 [32]	25 [77]	70 [158]	°C [°F]
Storage temperature range	-40 [-40]	–	125 [257]	-40 [-40]	–	125 [257]	°C [°F]
Relative humidity (non-condensing)	0	–	95	0	–	95	% RH
Common mode pressure	–	–	50	–	–	50	psig
Shock (duration 11 ms any axis)	–	–	10	–	–	10	g
Weight	–	2	–	–	2	–	g

Notes:

1. All parameters are measured at 12 Vdc excitation, pressure specs obtained with pressure applied to the front of the sensor.
2. Shift is relative to 25 °C [77 °F].
3. Measured at ½ full scale rated pressure using BFS_L.

DIFFERENTIAL AND GAGE OUTPUT (At 12 Vdc Excitation at 25 °C [77 °F].)

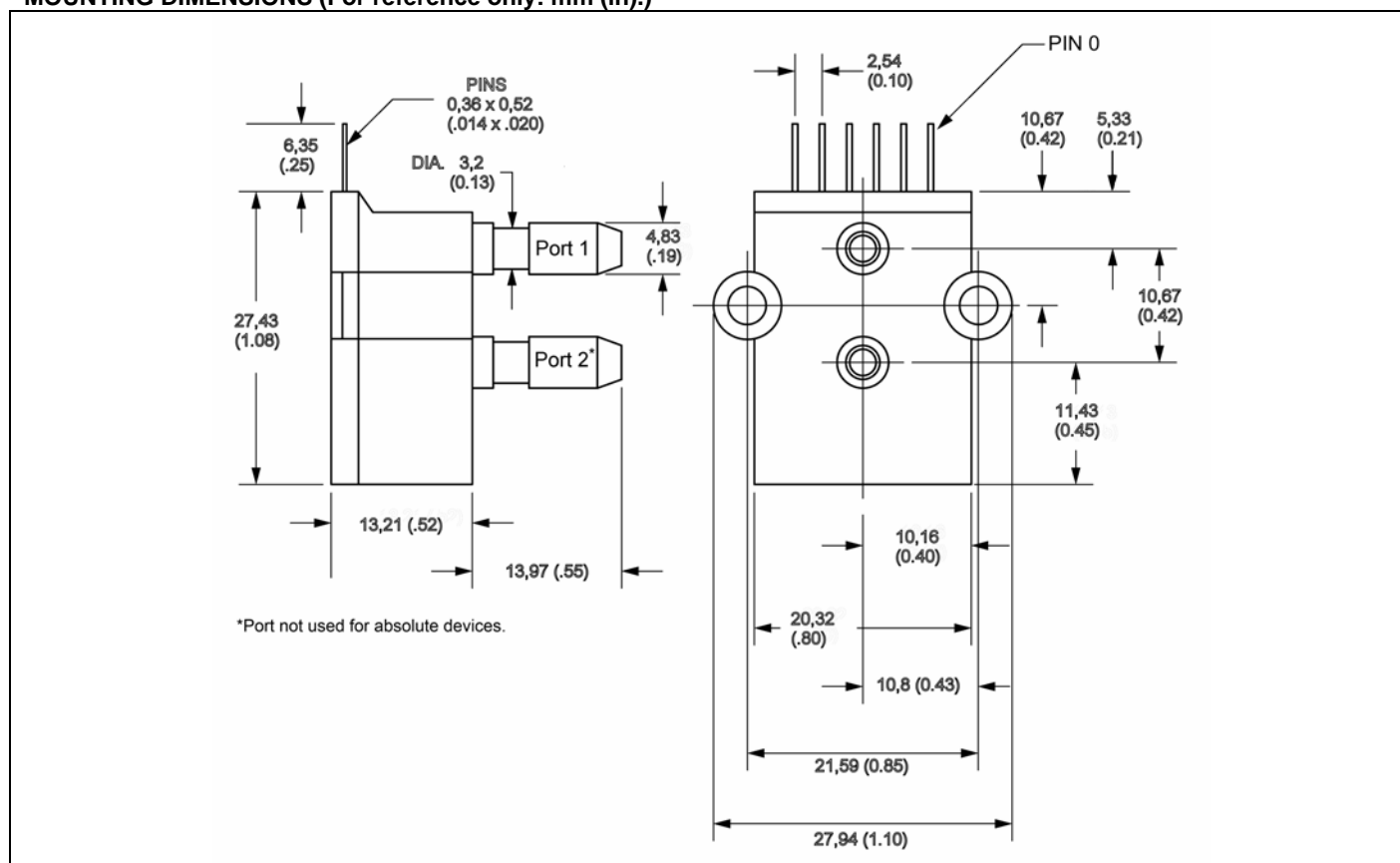
Full Scale Pressure	XCX C Grade Output Full Scale Span (mV)			XCX H Grade Output Full Scale Span (mV)			Max. Overpressure (psi)
	Min.	Typ.	Max.	Min.	Typ.	Max.	
4 in H ₂ O	38	40	42	–	–	–	5
10 in H ₂ O	19	20	21	19.8	20.0	20.2	5
0.3 psi	19	20	21	19.8	20.0	20.2	5
1 psi	17	18	19	17.8	18.0	18.2	5
5 psi	57	60	63	59	60	61	15
15 psi	85	90	95	89	90	91	45
30 psi	85	90	95	89	90	91	90
60 psi	85	90	95	89	90	91	180
100 psi	95	100	105	99	100	101	200
150 psi	85	90	95	89	90	91	300
240 psi	95	100	105	99	100	101	300

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ABSOLUTE OUTPUT (At 12 Vdc Excitation at 25 °C [77 °F].)

FS Pressure	XCX Output, Full Scale Span (mV)			Max. Overpressure (psi)
	Min.	Typ.	Max.	
5 psi	57	60	63	15
15 psi	85	90	95	45
30 psi	85	90	95	90
60 psi	85	90	95	180
100 psi	95	100	105	200

MOUNTING DIMENSIONS (For reference only: mm (in).)



EQUIVALENT CIRCUIT

	Pinout 1. N/C 2. +V Excitation 3. - Output signal 4. _V Excitation 5. - Output signal 6. N/C	MEDIA COMPATIBILITY: Clean, dry gases only. P1 Port: Front side of silicon diaphragm, silicone gel passivation, glass-filled nylon alumina. P2 Port: Silicon diaphragm, glass-filled nylon and alumina ceramic.
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ORDER GUIDE

Series XCX ¹ - Unamplified Compensated and Calibrated, mV	Pressure Measurement L - Low Pressure (in H ₂ O) No Character - Indicates Pressure (psi)	Pressure Range 04 in H ₂ O, 10 in H ₂ O 01, 05, 15, 30, 60, 100, 150, 240 psi	Pressure Reference D - Gage D - Differential A - Absolute ≥ 5 psia	Package Type N - Plastic	Accuracy Grade C - Commercial H - High
XCX		L	04	D	N
					C

Note 1. Gage and Differential use "D" suffix. Product is the same. Not all combinations are available.

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.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, 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. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

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.

SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

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