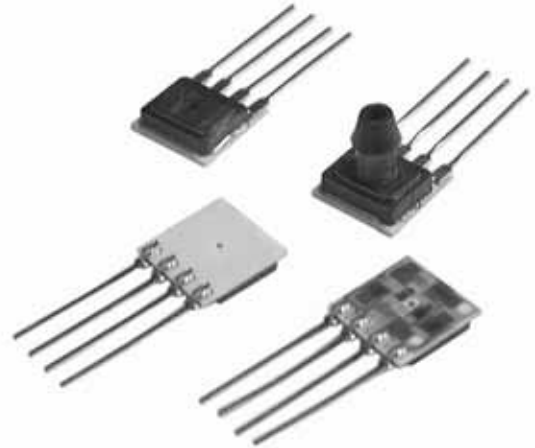


## CPC/CPCL and CPX/CPXL Series

### Uncompensated/Compensated and Compensated Calibrated Silicon Pressure Sensors



#### DESCRIPTION

The CPX/CPXL and the CPC/CPCL 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.

#### 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

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

The CPC Series is designed for the lowest cost and smallest profile. The standard packages have only a plastic cap for OEM applications. The CPC axial port option accommodates pressure measurements in tube applications.

#### POTENTIAL APPLICATIONS

- Medical applications
- Applications requiring small size
- Applications requiring vacuum and positive
- Pressure reference, or both

# CPC/CPCL and CPX/CPXL Series

## ELECTRICAL SPECIFICATIONS

Characteristic	CPC/CPCL at 12 Vdc, 25 °C [77 °F]				CPX/CPXL at 5 Vdc, 25 °C [77 °F]			
	Min.	Typ.	Max.	Unit	Min.	Typ.	Max.	Unit
Excitation voltage	3.0	12.0	16.0	Vdc	3.0	5.0	12.0	Vdc
Null	-1.0	0	1.0	mV	-50	0	50	mV
Offset temperature shift <sup>(1)</sup> 0 °C to 25 °C [32 °F to 77 °F] 25 °C to 70 °C [77 °F to 158 °F] <sup>(2)</sup>	–	–	±1.0	mV	–	±0.5	–	mV
Full scale temperature shift <sup>2</sup> 0 °C to 25 °C [32 °F to 158 °F] 25 °C to 70 °C [77 °F to 158 °F] <sup>(2)</sup>	–	–	±2	PPM/°C	–	-2200	–	PPM/°C
Linearity, hysteresis error <sup>(3)</sup>	–	0.25	1.0	% span	–	0.25	1.0	% span
Input resistance	5.0	–	–	kOhm	5.0	–	–	kOhm
Output resistance	–	3.0	–	kOhm	–	3.0	–	kOhm
Operating temperature	-25 [-13]	–	85 [185]	°C [°F]	-25 [-13]	–	85 [185]	°C [°F]
Storage temperature	-40 [-40]	–	125 [257]	°C [°F]	-40 [-40]	–	125 [257]	°C [°F]
Common mode pressure	–	–	50	psi	–	–	50	psi
Weight	–	2	–	g	–	2	–	g

### Notes:

1. 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 BFSL.

## ABSOLUTE OUTPUT

FS Pressure	CPC at 12 Vdc, 25 °C [77 °F] Output Full Scale Span (mV)			CPX at 5 Vdc, 25 °C [77 °F] Output Full Scale Span (mV)			Overpressure (psi)
	Min.	Typ.	Max.	Min.	Typ.	Max.	Max.
5 psi	57	60	63	112	168.5	225	15
15 psi	85	90	95	168	253	338	45
30 psi	85	90	95	168	253	338	90
60 psi	85	90	95	189	263.5	338	180
100 psi	95	100	105	210	295	380	250

## GAGE/DIFFERENTIAL<sup>(1)</sup> OUTPUT

FS Pressure	CPC/CPCL at 12 Vdc, 25 °C [77 °F] Output Full Scale Span (mV)			CPX/CPXL at 5 Vdc, 25 °C [77 °F] Output Full Scale Span (mV)			Overpressure (psi)
	Min.	Typ.	Max.	Min.	Typ.	Max.	Max.
4 in H <sub>2</sub> O	23	25	27	50	68	86	3
10 in H <sub>2</sub> O	19	20	21	40	78.5	112	3
1 psi	17	18	19	40	75	110	3
5 psi	57	60	63	112	168.5	225	15
15 psi	85	90	95	168	253	338	45
30 psi	85	90	95	168	253	338	90
60 psi	85	90	95	189	263.5	338	180
100 psi	95	100	105	210	295	380	250
150 psi	85	90	95	187	262.5	338	250

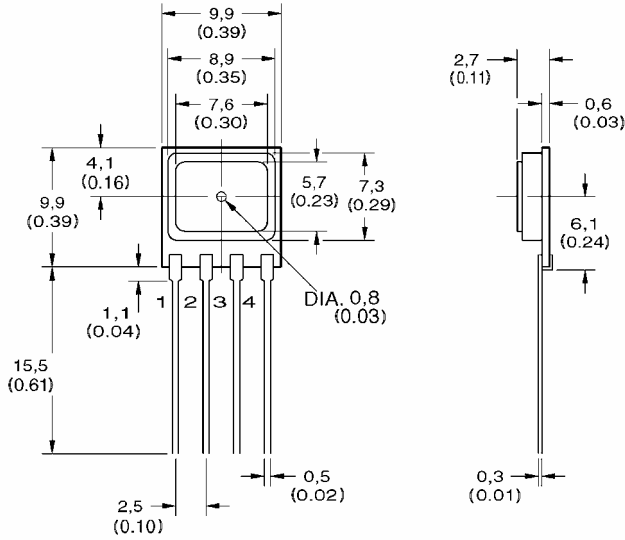
### Note:

1. Differential common mode pressure should not exceed 50 psi.

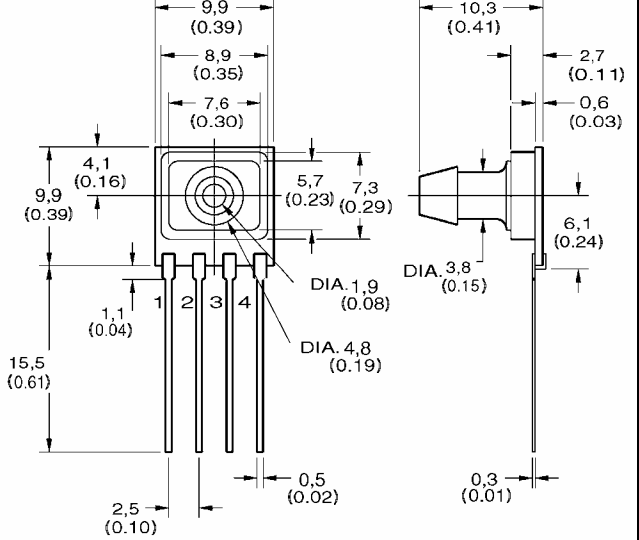
# Uncompensated/Compensated and Compensated Calibrated Silicon Pressure Sensors

## MOUNTING DIMENSIONS (For reference only: mm [in.])

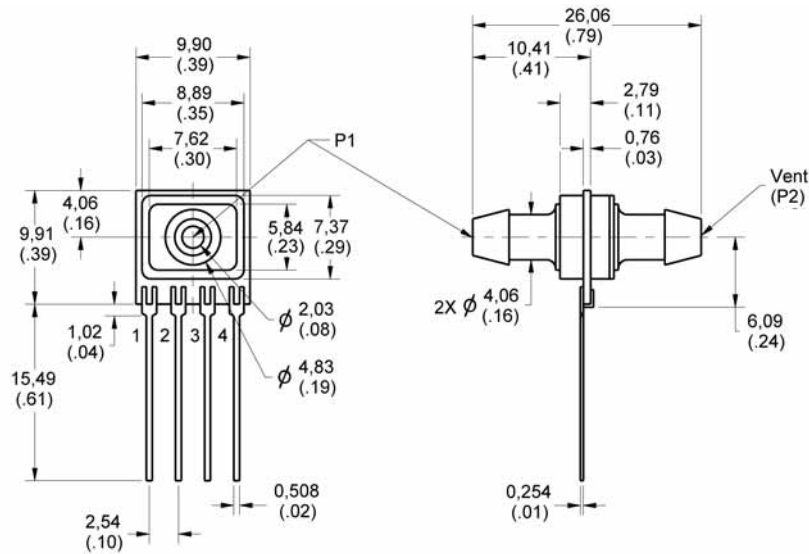
### Non-ported Package



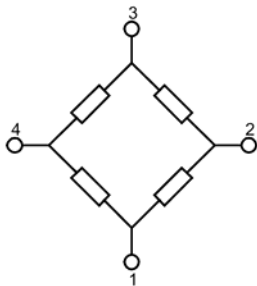
### AF and GF Package



### DF Package



### EQUIVALENT CIRCUIT



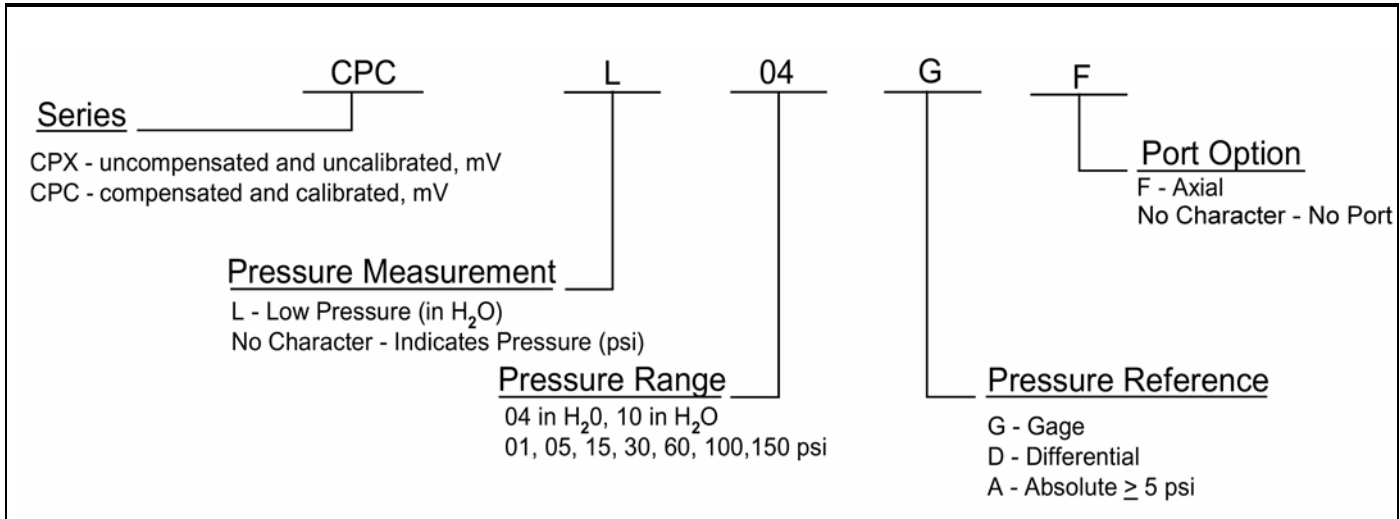
#### Pinout

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

### MEDIA COMPATIBILITY: Clean, dry gases only

- Port 1:** Media must be compatible with epoxy-based adhesive.
- Port 2:** Media must be compatible with nylon housing, epoxy adhesive and silicon.

## ORDER GUIDE



### **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 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.**

#### **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.**

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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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