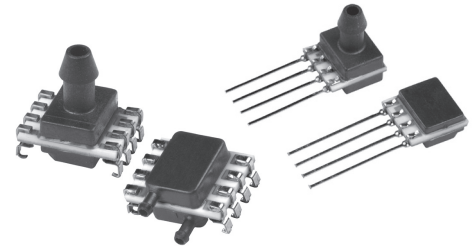


# Silicon Pressure Sensors Line Guide



**The pressure is on. The answer is here.** No matter the need, Honeywell Sensing and Control (S&C) has the microstructure, pressure sensor solution. Our sensing element design consists of four piezoresistors galvanized with a thin, chemically etched silicon diaphragm. A pressure change will flex the mechanism, causing a strain in the diaphragm and the buried resistors. The resistor values will change in proportion to the stress

applied, which produces an electrical output. So you'll find our components performing in potential applications including dialysis equipment, blood analysis, centrifusion and oxygen and nitrogen gas distribution, HVAC devices, data storage, process controls, industrial machinery, pumps, and robotics. Honeywell S&C is always working harder, no matter the situation. Or the pressure.

## FEATURES

### ULTRA-LOW PRESSURE SENSORS ASDX Series.

**Features:** Calibrated and temperature compensated • ASIC-enhanced output

- Analog output with 12-bit resolution
- 12-bit digital output (I<sup>2</sup>C- or SPI-compatible protocol) • Ratiometric output
- Enhanced response time and accuracy
- DIP package • Cost effective

**Benefits:** Fully calibrated and temperature compensated with on-board ASIC designed to provide digital correction of sensor offset, sensitivity, temperature coefficients, and non-linearity. Analog output ratiometric with supply voltage over compensated supply range with 12-bit resolution. 12-bit I<sup>2</sup>C- or SPI-compatible protocol allows easy interfacing to most commonly used microcontrollers and microprocessors without additional components and electronic circuitry. Output is corrected pressure value in hexadecimal format with 12-bit accuracy (unsigned) and independent of the supply voltage. Offers high level output on a cost-effective basis. Intended for use with non-corrosive, non-ionic working fluids such as air and dry gases in potential applications

such as flow calibrators, ventilation and airflow monitors, gas flow instrumentation, sleep apnea monitoring, and therapy equipment.

### CPCL Series.

**Features:** Calibrated and temperature compensated • Cost effective • Small size • Constant voltage excitation • High impedance, low current

**Benefits:** Integrates silicon micromachined sensing technology, temperature compensation, and calibration in a small, cost-effective package. Tube arrangements with nylon housings available for various pressure applications, especially those requiring small size or vacuum reference. Although designed for use with non-corrosive, non-ionic pressure media, sensors may accommodate many potential medical application gases.

### CPXL Series.

**Features:** Non-calibrated and non-temperature compensated • Small size

- Cost effective • Constant voltage excitation • High impedance, low current

**Benefits:** Integrates silicon micromachined sensing technology in a cost-effective package. Tube arrangements with nylon housings available for various pressure applications, especially those requiring small size, or vacuum reference. Although designed for use with non-corrosive, non-ionic pressure media, accommodates many potential medical application gases.

### DCXL-DS Series.

**Features:** Calibrated and temperature compensated • Improved stress isolation

- Reduced output offset errors

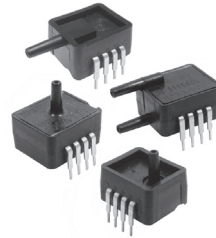
**Benefits:** Based on proprietary technology designed to reduce output offset or common mode errors due to changes in temperature, warm-up, long-term stability and position sensitivity. Features calibrated offset, full scale span and thermal error calibration to promote accuracy for flow pressure measurement. Industry-standard, ported package with improved stress isolation for printed circuit board mount applications. Used in medical, HVAC and industrial instrumentation applications.

# Silicon Pressure Sensors Line Guide

## Working better under pressure.

The human body is a supremely sensitive mechanism, requiring equally perceptive observation. Honeywell S&C offers a line of pressure sensors equal to every task — including sensors that measure the amount of pressure delivered to the human body.

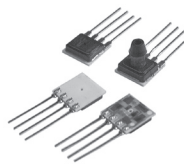
From medical applications to industrial needs to any industry, we've got the right solution. Our categories of pressure sensor measurement include absolute, differential, gage or vacuum gage — with unamplified or amplified sensors covering a pressure range of 0 psi to 250 psi [0 bar to 17.24 bar]. You'll also find: a variety of mounting and package styles; digital output, small size, reduced cost — enhanced reliability; enhanced repeatability and accuracy under extreme conditions; enhanced operating characteristics between sensors, and interchangeability without recalibration.



### Ultra-Low Pressure Sensors

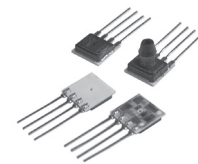
#### ASDX Series

<b>Signal conditioning</b>	amplified
<b>Pressure range</b>	±5 in H <sub>2</sub> O to ±10 in H <sub>2</sub> O
<b>Device type</b>	differential, gage, bidirectional gage
<b>Output</b>	analog (Vdc), digital (I <sup>2</sup> C or SPI)
<b>Calibrated</b>	yes
<b>Temperature compensated</b>	yes
<b>Operating temperature range</b>	0 °C to 85 °C [32 °F to 185 °F] (compensated)
<b>Accuracy</b>	-
<b>Total error band</b>	±2.0% FSS
<b>Mounting options</b>	DIP



### Ultra-Low Pressure Sensors

#### CPCL Series



#### CPXL Series

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	4 in H <sub>2</sub> O to 10 in H <sub>2</sub> O	4 in H <sub>2</sub> O to 10 in H <sub>2</sub> O
<b>Device type</b>	absolute, differential, gage	absolute, differential, gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	yes	no
<b>Temperature compensated</b>	yes	no
<b>Operating temperature range</b>	0 °C to 70 °C [32 °F to 158 °F] (compensated)	-25 °C to 85 °C [-13 °F to 185 °F]
<b>Accuracy</b>	linearity & hysteresis 0.5% typ.	linearity & hysteresis 0.5% typ.
<b>Mounting options</b>	SIP	SIP



## Ultra-Low Pressure Sensors

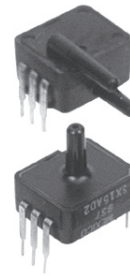
	DCXL-DS	XCAL Series	XCXL Series
<b>Signal conditioning</b>	unamplified	amplified	unamplified
<b>Pressure range</b>	±1 in H <sub>2</sub> O to ±10 in H <sub>2</sub> O	±4 in H <sub>2</sub> O to ±10 in H <sub>2</sub> O	±4 in H <sub>2</sub> O to ±10 in H <sub>2</sub> O
<b>Device type</b>	differential	differential	differential
<b>Output</b>	mV	V	mV
<b>Calibrated</b>	yes	yes	yes
<b>Temperature compensated</b>	yes	yes	yes
<b>Operating temperature range</b>	0 °C to 50 °C [32 °F to 122 °F] (compensated)	0 °C to 50 °C [32 °F to 122 °F] (compensated)	0 °C to 70 °C [32 °F to 158 °F] (compensated)
<b>Accuracy</b>	linearity & hysteresis 0.2% typ.	-	linearity & hysteresis 0.5% typ.
<b>Mounting options</b>	SIP	SIP	SIP



## Ultra-Low Pressure Sensors

	XPCL Series	XPXL Series
<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	4 in H <sub>2</sub> O to 10 in H <sub>2</sub> O	4 in H <sub>2</sub> O to 10 in H <sub>2</sub> O
<b>Device type</b>	differential, gage	differential, gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	yes	no
<b>Temperature compensated</b>	yes	no
<b>Operating temperature range</b>	0 °C to 70 °C [32 °F to 158 °F] (compensated)	-25 °C to 85 °C [-13 °F to 185 °F]
<b>Accuracy</b>	linearity & hysteresis 0.5% typ.	linearity & hysteresis 0.5% typ.
<b>Mounting options</b>	SIP	SIP

# Silicon Pressure Sensors Line Guide



## Ultra-Low Pressure Sensors

### SCXL Series

### SDX005IND4, SDX010IND4

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	4 in H <sub>2</sub> O to 10 in H <sub>2</sub> O	5 in H <sub>2</sub> O to 10 in H <sub>2</sub> O
<b>Device type</b>	differential, gage	differential, gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	yes	yes
<b>Temperature compensated</b>	yes	yes
<b>Operating temperature range</b>	0 °C to 50 °C [32 °F to 122 °F] (compensated)	0 °C to 50 °C [32 °F to 122 °F] (compensated)
<b>Accuracy</b>	linearity & hysteresis 0.2% typ.	linearity & hysteresis 0.2% typ.
<b>Mounting options</b>	SIP	DIP



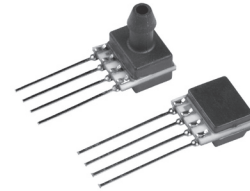
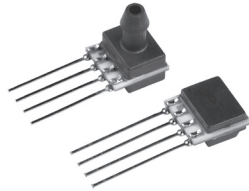
## Ultra-Low Pressure Sensors

### SXL Series

### DC Series

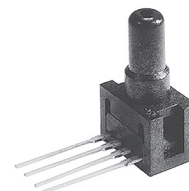
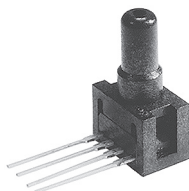
### DUXL Series

<b>Signal conditioning</b>	unamplified	amplified	unamplified
<b>Pressure range</b>	±10 in H <sub>2</sub> O	1 in H <sub>2</sub> O to 10 in H <sub>2</sub> O	1 in H <sub>2</sub> O to 30 in H <sub>2</sub> O
<b>Device type</b>	differential, gage	differential, gage	differential, gage
<b>Output</b>	mV	V <sub>dc</sub>	mV
<b>Calibrated</b>	no	yes	no
<b>Temperature compensated</b>	no	yes	no
<b>Operating temperature range</b>	0 °C to 50 °C [32 °F to 122 °F]	0 °C to 50 °C [32 °F to 122 °F] (compensated)	-25 °C to 85 °C [-13 °F to 185 °F]
<b>Accuracy</b>	linearity & hysteresis 0.2% typ.	total error band ±2.0%	linearity & hysteresis 0.5% typ.
<b>Mounting options</b>	SIP	SIP	SIP



## Low Pressure Sensors

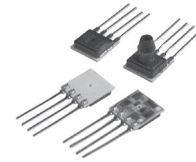
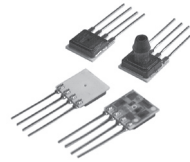
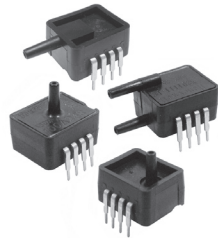
	TruStability™ Silicon Pressure Sensors HSC Series	TruStability™ Silicon Pressure Sensors SSC Series
<b>Signal conditioning</b>	amplified	amplified
<b>Pressure range</b>	1 psi to 150 psi	1 psi to 150 psi
<b>Device type</b>	absolute, differential, gage, compound	absolute, differential, gage, compound
<b>Output</b>	analog (Vdc) or digital (I <sup>2</sup> C or SPI)	analog (Vdc) or digital (I <sup>2</sup> C or SPI)
<b>Calibrated</b>	yes	yes
<b>Compensated</b>	yes	yes
<b>Operating temperature range</b>	-20 °C to 85 °C [-4 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
<b>Accuracy</b>	linearity & hysteresis ±0.25% FSS BFSL	linearity & hysteresis ±0.25% FSS BFSL
<b>Total error band</b>	±1% FSS	±2% FSS
<b>Mounting options</b>	DIP, SIP, SMT	DIP, SIP, SMT



## Low Pressure Sensors

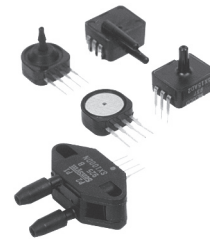
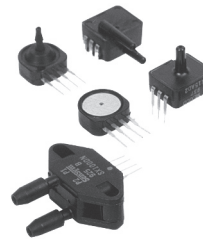
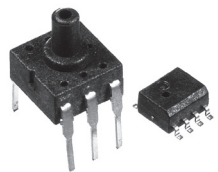
	24PC Series	26PC Series
<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	0.5 psi to 250 psi	1 psi to 250 psi
<b>Device type</b>	absolute, differential, wet-wet differential, gage, vacuum gage	differential, wet-wet differential, gage, vacuum gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	no	yes
<b>Compensated</b>	no	yes
<b>Operating temperature range</b>	-40 °C to 85 °C [-40 °F to 185 °F]	0 °C to 50 °C [32 °F to 122 °F] (compensated)
<b>Accuracy</b>	linearity & hysteresis 0.5% typ.	linearity & hysteresis 0.5% typ.
<b>Mounting options</b>	DIP, SIP, SMT	DIP, SIP, SMT

# Silicon Pressure Sensors Line Guide



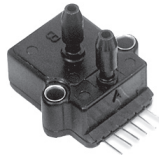
## Low Pressure Sensors

	ASDX Series	CPC Series	CPX Series
<b>Signal conditioning</b>	amplified	unamplified	unamplified
<b>Pressure range</b>	1 psi to 100 psi	1 psi to 150 psi	1 psi to 150 psi
<b>Device type</b>	absolute, differential, gage, bidirectional	absolute, differential, gage	absolute, differential, gage
<b>Output</b>	analog (Vdc), digital (I <sup>2</sup> C or SPI)	mV	mV
<b>Calibrated</b>	yes	yes	no
<b>Compensated</b>	yes	yes	no
<b>Operating temperature range</b>	0 °C to 85 °C [32 °F to 185 °F] (compensated)	0 °C to 70 °C [32 °F to 158 °F] (compensated)	-25 °C to 85 °C [-12 °F to 185 °F]
<b>Accuracy</b>	-	linearity & hysteresis 0.5% typ.	linearity & hysteresis 0.5% typ.
<b>Total error band</b>	±2.0% FSS	-	-
<b>Mounting options</b>	DIP	SIP	SIP



## Low Pressure Sensors

	HPX Series	SCC Series	SX Series
<b>Signal conditioning</b>	unamplified	unamplified	unamplified
<b>Pressure range</b>	1 psi to 100 psi	1 psi to 100 psi	1 psi to 150 psi
<b>Device type</b>	absolute, gage	absolute, differential, gage	absolute, differential, gage
<b>Output</b>	mV	mV	mV
<b>Calibrated</b>	no	no	no
<b>Compensated</b>	no	yes	no
<b>Operating temperature range</b>	-20 °C to 100 °C [-4 °F to 212 °F]	0 °C to 50 °C [32 °F to 122 °F] (compensated)	-40 °C to 85 °C [-40 °F to 185 °F]
<b>Accuracy</b>	linearity & hysteresis 0.5% typ.	linearity & hysteresis 0.2% typ.	linearity & hysteresis 0.2% typ.
<b>Mounting options</b>	DIP, SMT	SIP, DIP, SMT	SIP, DIP, SMT



**SCX Series**



**SDX Series**

**Low Pressure Sensors**

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	1 psi to 150 psi	1 psi to 100 psi
<b>Device type</b>	absolute, differential, gage	absolute, differential, gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	yes	yes
<b>Compensated</b>	yes	yes
<b>Operating temperature range</b>	0 °C to 70 °C [32 °F to 158 °F] (compensated)	0 °C to 50 °C [32 °F to 122 °F] (compensated)
<b>Accuracy</b>	linearity & hysteresis 0.3% typ.	linearity & hysteresis 0.25% typ.
<b>Mounting options</b>	SIP	DIP



**XPC Series**

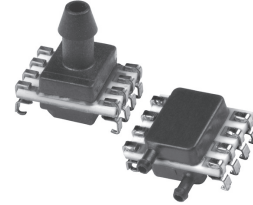
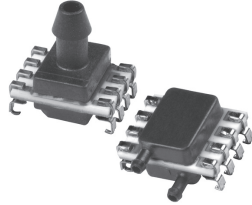


**XPX Series**

**Low Pressure Sensors**

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	1 psi to 150 psi	1 psi to 150 psi
<b>Device type</b>	absolute, differential, gage	absolute, differential, gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	yes	no
<b>Compensated</b>	yes	no
<b>Operating temperature range</b>	0 °C to 70 °C [32 °F to 158 °F] (compensated)	-25 °C to 85 °C [-13 °F to 185 °F]
<b>Accuracy</b>	linearity & hysteresis 1.0% typ.	linearity & hysteresis 1.0% typ.
<b>Mounting options</b>	SIP	SIP

# Silicon Pressure Sensors Line Guide

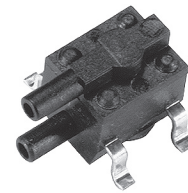
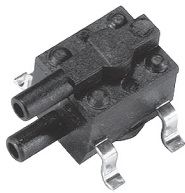


## Low Pressure – Surface Mount Sensors

### TruStability™ Silicon Pressure Sensors HSC SMT Series

### TruStability™ Silicon Pressure Sensors SSC SMT Series

<b>Signal conditioning</b>	amplified	amplified
<b>Pressure range</b>	1 psi to 150 psi	1 psi to 150 psi
<b>Device type</b>	absolute, differential, gage, compound	absolute, differential, gage, compound
<b>Output</b>	analog (Vdc) or digital (I <sup>2</sup> C or SPI)	analog (Vdc) or digital (I <sup>2</sup> C or SPI)
<b>Calibrated</b>	yes	yes
<b>Compensated</b>	yes	yes
<b>Operating temperature range</b>	-20 °C to 85 °C [-4 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
<b>Accuracy</b>	linearity & hysteresis ±0.25% FSS BFSL	linearity & hysteresis ±0.25% FSS BFSL
<b>Total error band</b>	±1% FSS	±2% FSS
<b>Mounting options</b>	SIP, DIP, SMT	SIP, DIP, SMT

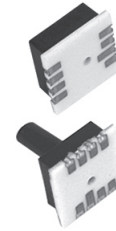
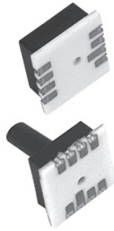


## Low Pressure – Surface Mount Sensors

### 24PC SMT Series

### 26PC SMT Series

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	1 psi to 15 psi	1 psi to 15 psi
<b>Device type</b>	wet-wet differential, gage, vacuum gage	wet-wet differential, gage, vacuum gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	no	yes
<b>Compensated</b>	no	yes
<b>Operating temperature range</b>	-40 °C to 85 °C [-40 °F to 185 °F]	0 °C to 50 °C [32 °F to 122 °F] (compensated)
<b>Accuracy</b>	linearity, hysteresis & repeatability 0.5% typ.	linearity, hysteresis & repeatability 0.5% typ.
<b>Mounting options</b>	SMT	SMT

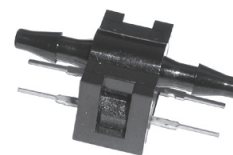
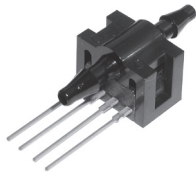


## Low Pressure – Surface Mount Sensors

### SCC SMT Series

### SX SMT Series

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	1 psi to 150 psi	1 psi to 150 psi
<b>Device type</b>	absolute, gage	absolute, gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	no	no
<b>Compensated</b>	yes	no
<b>Operating temperature range</b>	0 °C to 50 °C [32 °F to 122 °F] (compensated)	-40 °C to 125 °C [-40 °F to 257 °F]
<b>Accuracy</b>	linearity, hysteresis & repeatability 0.2% typ.	linearity, hysteresis & repeatability 0.2% typ.
<b>Mounting options</b>	SMT	SMT



## Low Pressure – Flow Through Sensors

### 24PC Flow-Through

### 26PC Flow-Through

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	15 psi to 30 psi	1 psi to 100 psi
<b>Device type</b>	flow-through gage	flow-through gage
<b>Output</b>	mV	mV
<b>Calibrated</b>	no	yes
<b>Compensated</b>	no	yes
<b>Operating temperature range</b>	-40 °C to 85 °C [-40 °F to 185 °F]	0 °C to 50 °C [32 °F to 122 °F] (compensated)
<b>Accuracy</b>	linearity & hysteresis 0.75% typ.	linearity & hysteresis 0.35% typ.
<b>Mounting options</b>	SIP	SIP

### **XCAL Series.**

**Features:** Calibrated and temperature compensated • Cost effective • Constant voltage excitation • Ratiometric output

**Benefits:** State-of-the-art silicon micromachined pressure sensors. Stress-free packaging techniques provide calibrated and temperature compensated pressure sensors for the most demanding potential applications such as ventilators, audiometers, air compressors, and chemical analyzers.

### **XCXL Series.**

**Features:** Calibrated and temperature compensated • Stress isolated package design • Ratiometric output

**Benefits:** Integrates silicon micromachined sensing technology, temperature compensation, and calibration in industry-standard package. Unique stress isolating design protects against torque induced errors. Additional stability and long-term accuracy improvements gained through simplified compensation techniques which eliminate temperature dependent thermal compensation. Available in commercial performance level for calibration accuracy of offset thermal compensation and linearity, providing added flexibility to meet critical performance budgets.

### **XPCL Series.**

**Features:** Calibrated and temperature compensated • Cost effective • Small size • Constant voltage excitation • High impedance, low current

**Benefits:** Integrates silicon micromachined sensing technology, temperature compensation, and calibration in a cost-effective package. Several tube arrangements with nylon housings available for potential pressure applications. Designed for use with non-corrosive, non-ionic pressure media; sensors may also accommodate many potential medical application gases, especially those requiring small size, vacuum, and positive pressure.

### **XPXL Series.**

**Features:** Cost effective • Small size • Constant voltage excitation • High impedance, low current

**Benefits:** Integrates silicon micromachined sensing technology in a cost-effective package. Several tube arrangements with nylon housings available for potential pressure applications. High impedance for potential low power applications. Designed for use with non-corrosive, non-ionic pressure media; sensors may also accommodate many potential medical application gases.

### **SCXL Series.**

**Features:** Calibrated and temperature compensated • Small size • Low noise • High impedance, low current

**Benefits:** Designed to provide cost-effective solutions for potential applications requiring enhanced accuracy over very low operating pressure ranges. Calibrated and temperature compensated. Bridge output is ratiometric to supply voltage. High impedance for potential low power applications.

### **SDX005IND4, SDX010IND4.**

**Features:** Calibrated and temperature compensated • Compact, solvent-resistant case • Cost effective • Small size • Low noise • High impedance, low current • Prime grade available

**Benefits:** Cost-effective solution for potential pressure applications requiring small size and enhanced performance such as computer peripherals and pneumatic controls. Calibration and compensation designed to provide stable output over temperature range. Bridge output is ratiometric to supply voltage. Small, DIP package allows use of multiple sensors in limited space. Package provides enhanced corrosion resistance and isolation to external stress. Through-hole pins anchor sensor to the PCB to provide secure and stable unit. High impedance for potential low power applications. Intended for use with non-corrosive, non-ionic working fluids, such as air and dry gases.

### **SXL Series.**

**Features:** Enhanced accuracy, low pressure readings • Cost effective • High impedance bridge • Low noise

**Benefits:** Cost-effective components for measuring very low pressures. Low power consumption for portable and battery-operated equipment. Intended for use with non-corrosive and non-ionic media, such as air and dry gases in potential medical instrumentation, environmental controls, and portable monitor applications.

### **DC Series.**

**Features:** ASIC enhanced • Calibrated and temperature compensated output • Ratiometric or regulated voltage output

**Benefits:** Combines SURSENSE™ enhanced sensitivity and silicon sensing capabilities with ASIC technology for pressure sensing with enhanced precision and reliability. SURSENSE™ technology provides Dynamic Self Compensation which substantially reduces offset errors due to changes in temperature, warm-up, long-term instability and position sensitivity. Designed to provide ratiometric when operated with fixed 5.0 Vdc. Regulated voltage units also available for applications involving variable supply voltages. Potential applications for use with non-corrosive and non-ionic media such as air and dry gases in medical instrumentation, environmental controls, and portable monitor applications.

### **DUXL Series.**

**Features:** Non-calibrated and non-temperature compensated • Low profile • Small size • Ratiometric output

**Benefits:** SURSENSE™ line based upon proprietary, patented technology designed to reduce all output offset or common mode errors. Unique stress concentration enhanced structure provides stable linear output proportional to applied pressure, significantly reducing output offset errors due to changes in temperature, warm-up, long-term stability. Intended for potential applications where customized external signal conditioning is required or available from other sources. Low profile outline

often ideal for portable applications where small size is critical such as handheld instrumentation, medical monitors, and level indicators.

## **LOW PRESSURE SENSORS** **TruStability™ PRESSURE SENSORS** **HSC Series.**

**Features:** Industry-leading long-term stability • Extremely tight accuracy of  $\pm 0.25\%$  FSS BFSL • Total error band of  $\pm 1\%$  full scale span maximum

- Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package
- Low operating voltage
- Extremely low power consumption
- Ratiometric 12-bit analog output
- Precision ASIC conditioning and temperature compensated over 0 °C to 50 °C [32 °F to 122 °F] temperature range
- RoHS compliant
- Insensitive to mounting orientation
- Also available with I<sup>2</sup>C or SPI digital output, and in SMT, SIP or DIP packages
- Absolute, differential, gage and compound types
- Pressure ranges from 60 mbar to 10 bar [1 psi to 150 psi]
- Custom calibration available
- Various pressure port options

**Benefits:** The modular and flexible design offers customers a variety of package styles and options, all with the same industry-leading performance specifications. The HSC Series is fully calibrated and temperature compensated for sensor offset, sensitivity, temperature effects, and non-linearity using an on-board Application Specific Integrated Circuit (ASIC). The internal diagnostic functions increase system reliability. Potential medical applications include airflow monitors, anesthesia machines, blood analysis machines, gas chromatography, gas flow instrumentation, kidney dialysis machines, oxygen concentrators, pneumatic controls, respiratory machines, sleep apnea equipment, and ventilators. Potential industrial applications include barometry, flow calibrators, gas chromatography, gas flow instrumentation, HVAC, life sciences, and pneumatic controls.

## **SSC Series.**

**Features:** Industry-leading long-term stability • Extremely tight accuracy of  $\pm 0.25\%$  FSS BFSL • Total error band of

$\pm 2\%$  full scale span maximum • Modular and flexible design offer customers a variety of package styles and options, all with the same industry-leading performance specifications • Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package

- Low operating voltage
- Extremely low power consumption
- Ratiometric 12-bit analog output
- Precision ASIC conditioning and temperature compensated over -20 °C to 85 °C [-4 °F to 185 °F] temperature range
- RoHS compliant
- Insensitive to mounting orientation
- Internal diagnostic functions increase system reliability
- Also available with I<sup>2</sup>C or SPI digital output, and in SMT, SIP or DIP packages
- Absolute, differential, gage and compound types
- Pressure ranges from 60 mbar to 10 bar [1 psi to 150 psi]
- Custom calibration available
- Various pressure port options

**Benefits:** The modular and flexible design offers customers a variety of package styles and options, all with the same industry-leading performance specifications. The SSC Series is fully calibrated and temperature compensated for sensor offset, sensitivity, temperature effects, and non-linearity using an on-board Application Specific Integrated Circuit (ASIC). The internal diagnostic functions increase system reliability. Potential medical applications include airflow monitors, anesthesia machines, blood analysis machines, gas chromatography, gas flow instrumentation, kidney dialysis machines, oxygen concentrators, pneumatic controls, respiratory machines, sleep apnea equipment, and ventilators. Potential industrial applications include barometry, flow calibrators, gas chromatography, gas flow instrumentation, HVAC, life sciences, and pneumatic controls.

## **24PC Series.**

**Features:** True wet/wet differential sensing

- Miniature package
- Operable after exposure to frozen conditions
- Choice of termination for gage sensors

**Benefits:** Piezoresistive sensing technology designed to provide inherently stable outputs over sensing range. Variety of gage pressure port configurations for

quick and easy modification. Reduces sensitivity shift over temperature. Used to measure vacuum or positive pressure in potential medical, environmental, and industrial instrumentation applications.

## **26PC Series.**

**Features:** Calibrated and temperature compensated • True wet/wet differential sensing • Miniature size • Media flow-through port • Flow path with minimal dead space • Operable after exposure to frozen conditions • Choice of termination for gage sensors

**Benefits:** Piezoresistive sensing technology designed to provide part interchangeability and enhanced performance, reliability and accuracy. Factory calibrated sensors designed to provide pressure sensing performance with enhanced precision and reliability in a miniature package. Variety of gage pressure port configurations designed to provide quick and easy modification. Used to measure vacuum or positive pressure in potential medical, environmental, and industrial instrumentation applications.

## **ASDX Series.**

**Features:** Calibrated and temperature compensated • ASIC-enhanced output

- Analog output with 12-bit resolution
- 12-bit digital output (I<sup>2</sup>C- or SPI-compatible protocol)
- Ratiometric output
- Enhanced response time and accuracy
- DIP package
- Cost effective

**Benefits:** Fully calibrated and temperature compensated with on-board ASIC designed to provide digital correction of sensor offset, sensitivity, temperature coefficients, and non-linearity. Analog output ratiometric with supply voltage over compensated supply range with 12-bit resolution. 12-bit I<sup>2</sup>C- or SPI-compatible protocol allows easy interfacing to most commonly used microcontrollers and microprocessors without additional components and electronic circuitry. Output is corrected pressure value in hexadecimal format with 12-bit accuracy (unsigned) and not ratiometric to the supply voltage. Offers high level output

on a cost-effective basis. Intended for use with non-corrosive, non-ionic working fluids such as air and dry gases in potential applications such as flow calibrators, ventilation and air flow monitors, gas flow instrumentation, sleep apnea monitoring, and therapy equipment.

### **CPC Series.**

**Features:** Calibrated and temperature compensated • Cost effective • Small size • Constant voltage excitation • High impedance, low current

**Benefits:** Integrates silicon micromachined sensing technology, calibration and temperature compensation in a low profile, cost-effective package for potential medical applications requiring small size. Designed for use with non-corrosive, non-ionic pressure media; accommodates many gases used in potential medical applications. Some listings accommodate pressure measurements in tube applications.

### **CPX Series.**

**Features:** Non-calibrated and non-temperature compensated • Cost effective • Small size • Constant voltage excitation • High impedance, low current

**Benefits:** Integrates silicon micromachined sensing technology, temperature compensation, and calibration in a cost-effective package. Designed for use with non-corrosive, non-ionic pressure media; also accommodates many gases used in potential medical applications, especially those requiring vacuum reference.

### **HPX Series.**

**Features:** Miniature size • Two package styles: through-hole mounting and surface mount • Wide operating temperature range • Enhanced response time • Easy to use

**Benefits:** Easy to use, miniature size, cost effective, accurate sensing in two package configurations. Gage is 6-pin DIP, absolute is 8-pin surface mount, small outline integrated circuit package. Ratiometric output for proven application

flexibility. Designed for use with non-corrosive, non-ionic working fluids such as air and dry gases in potential applications such as medical equipment, altimeters and barometers, pneumatic controls, leak detection, and consumer goods.

### **SCC Series.**

**Features:** Temperature compensated • Reduced cost • Small size • Three package types

**Benefits:** Designed for potential applications where sensing element is integral to OEM equipment. Packaged in either standard cost-effective chip carrier “button” package, plastic ported “N” package, or DIP package. Packages may be O-ring sealed, epoxied, and/or clamped onto a pressure fitting. Closed-bridge four-pin SIP configuration for electrical connection to “button, or “N” package. DIP package mounts on PC board with through-hole pins, like standard IC. Extremely small size allows multiple sensors in limited space. Designed for use with non-corrosive, non-ionic media, such as air and dry gases in potential applications such as automotive diagnostics, dental equipment and environmental controls.

### **SX Series.**

**Features:** Cost effective • Small size • Three package types • High-impedance bridge • Low noise • Low power consumption for battery power

**Benefits:** Designed for potential applications where sensing element is integral to OEM equipment. Packaged in either standard cost-effective chip carrier “button” package, plastic ported “N” package, or DIP package. Packages may be O-ring sealed, epoxied, and/or clamped onto a pressure fitting. Closed-bridge four-pin SIP configuration for electrical connection to “button, or “N” package. DIP package mounts on PC board with through-hole pins, like standard IC. Extremely small size allows multiple sensors in limited space. Designed for use with non-corrosive, non-ionic media such as air and dry gases in

potential applications such as medical instrumentation, barometric measurement, and battery powered equipment.

### **SCX Series.**

**Features:** Cost effective • Calibrated and temperature compensated • Small size • Low noise • Enhanced accuracy • High impedance for low power applications • Corrosion resistant

**Benefits:** Cost-effective solution for potential pressure applications requiring operation over wide temperature range. Output with enhanced accuracy and stability. Integrated circuit sensor element and laser trimmed thick film ceramic housed in compact, solvent-resistant case. Housing provides enhanced corrosion resistance and isolation from external packaging stresses. Convenient mounting holes and pressure ports for use with standard plastic tubing. Two pins provide output voltage proportional to temperature available for use with external circuitry. Enhanced response time for potential computer peripherals and pneumatic control applications. Used with non-corrosive, non-ionic working fluids such as air and dry gases in potential medical equipment applications.

### **SDX Series.**

**Features:** Cost effective • Calibrated and temperature compensated • Small size • Low noise • High impedance for low power applications • Corrosion resistant • Available in two grades

**Benefits:** Cost-effective solution for potential applications requiring small size plus performance. Enhanced accuracy and stability output over temperature range. Available in standard commercial and prime grades for optimization of accuracy and cost in a given application. Integrated circuit sensor element and laser trimmed thick film ceramic housed in compact, solvent-resistant case. Housing provides enhanced corrosion resistance and isolation from external package stress. Extremely small size allows multiple sensors in limited space. Through-hole pins for secure and stable anchoring to PCB. Used with non-corrosive, non-ionic

working fluids such as air and dry gases in potential medical equipment, computer peripherals, and pneumatic control applications.

### **XPC Series.**

**Features:** Calibrated and temperature compensated • Cost effective • Small size • Constant voltage excitation • High impedance, low current

**Benefits:** Integrates silicon micromachined sensing technology, temperature compensation, and calibration in a cost-effective package. Several tube arrangements with nylon housings available for potential pressure applications. Designed for use with non-corrosive, non-ionic pressure media; sensors may accommodate many potential medical application gases, especially those requiring small size, vacuum, and positive pressure.

### **XPX Series.**

**Features:** Cost effective • Small size • Constant voltage excitation • High impedance, low current

**Benefits:** Integrates silicon micromachined sensing technology, temperature compensation, and calibration in a cost-effective package. Several tube arrangements with nylon housings available for potential pressure applications. Designed for use with non-corrosive, non-ionic pressure media; sensors may also accommodate many potential medical application gases, especially those requiring small size, vacuum, and positive pressure.

## **LOW PRESSURE – SURFACE MOUNT SENSORS**

### **TruStability™ PRESSURE SENSORS HSC SMT Series.**

**Features:** Industry-leading long-term stability • Extremely tight accuracy of  $\pm 0.25\%$  FSS BFSL • Total error band of  $\pm 1\%$  full scale span maximum

- Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package
- Low operating voltage
- Extremely low power consumption
- Ratiometric 12-bit analog output
- Precision ASIC conditioning and temperature compensated over 0 °C to

50 °C [32 °F to 122 °F] temperature range • RoHS compliant • Insensitive to mounting orientation • Also available with I<sup>2</sup>C or SPI digital output, and in SMT, SIP or DIP packages • Absolute, differential, gage and compound types • Pressure ranges from 60 mbar to 10 bar [1 psi to 150 psi] • Custom calibration available • Various pressure port options

**Benefits:** The modular and flexible design offers customers a variety of package styles and options, all with the same industry-leading performance specifications. The HSC Series is fully calibrated and temperature compensated for sensor offset, sensitivity, temperature effects, and non-linearity using an on-board Application Specific Integrated Circuit (ASIC). The internal diagnostic functions increase system reliability. Potential medical applications include airflow monitors, anesthesia machines, blood analysis machines, gas chromatography, gas flow instrumentation, kidney dialysis machines, oxygen concentrators, pneumatic controls, respiratory machines, sleep apnea equipment, and ventilators. Potential industrial applications include barometry, flow calibrators, gas chromatography, gas flow instrumentation, HVAC, life sciences, and pneumatic controls.

### **SSC SMT Series.**

**Features:** Industry-leading long-term stability • Extremely tight accuracy of  $\pm 0.25\%$  FSS BFSL • Total error band of  $\pm 2\%$  full scale span maximum • Modular and flexible design offer customers a variety of package styles and options, all with the same industry-leading performance specifications • Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package • Low operating voltage

- Extremely low power consumption
- Ratiometric 12-bit analog output
- Precision ASIC conditioning and temperature compensated over -20 °C to 85 °C [-4 °F to 185 °F] temperature range • RoHS compliant • Insensitive to mounting orientation • Internal diagnostic functions increase system reliability • Also available with I<sup>2</sup>C or SPI digital output, and in SMT, SIP or DIP packages • Absolute,

differential, gage and compound types

- Pressure ranges from 60 mbar to 10 bar [1 psi to 150 psi] • Custom calibration available • Various pressure port options

**Benefits:** The modular and flexible design offers customers a variety of package styles and options, all with the same industry-leading performance specifications. The SSC Series is fully calibrated and temperature compensated for sensor offset, sensitivity, temperature effects, and non-linearity using an on-board Application Specific Integrated Circuit (ASIC). The internal diagnostic functions increase system reliability. Potential medical applications include airflow monitors, anesthesia machines, blood analysis machines, gas chromatography, gas flow instrumentation, kidney dialysis machines, oxygen concentrators, pneumatic controls, respiratory machines, sleep apnea equipment, and ventilators. Potential industrial applications include barometry, flow calibrators, gas chromatography, gas flow instrumentation, HVAC, life sciences, and pneumatic controls.

### **24PC SMT Series.**

**Features:** Compact surface mount profile

- True wet/wet differential sensing
- Pick-up feature • Maximum peak reflow temperature of 260 °C [500 °F] • End point calibration • Elastomeric construction
- Wide operating temperature range

**Benefits:** Designed for use with other SMT components on PCB, helping to reduce installation costs and eliminate secondary operations. Wheatstone bridge construction, silicon piezoresistive technology, and ratiometric output for application flexibility and design simplicity. Alignment pins for position accuracy. 3, 18 mm [0.125 in] diameter pick-up feature for pick and place machines. Designed for potential medical applications, may also be applied in almost any potential application requiring surface mount pressure sensor.

### **26PC SMT Series.**

**Features:** Calibrated and temperature compensated • True wet/wet differential

sensing • Compact surface mount profile  
• Pick-up feature • Maximum peak reflow temperature of 260 °C [500 °F] • End point calibration • Elastomeric construction  
• Wide operating temperature range

**Benefits:** Calibrated and temperature compensated for use with other SMT components on PCB, helping to reduce installation costs and eliminate secondary operations. Wheatstone bridge construction, silicon piezoresistive technology, and ratiometric output for application flexibility and design simplicity. Alignment pins for position accuracy. 3,18 mm [0.125 in] diameter pick-up feature for pick and place machines. Designed for potential medical application, may also be applied in almost any potential application requiring surface mount pressure sensor.

#### **SCC SMT Series.**

**Features:** Temperature compensation  
• Low cost • Small size • High impedance bridge • Low power consumption  
• Lidded or ported versions

**Benefits:** Reduced cost with temperature stable output when driven with constant current source. Designed for extremely cost-sensitive potential applications where precise accuracy over wide temperature range is not required such as altimeters, pneumatic controls, and battery powered equipment. Standard version features low profile plastic lid to better withstand high temperatures; optional ported version has tube attachment port useful in potential gage applications. 4-pin closed bridge configuration for electrical connection with additional pads provided for mechanical support. Used with clean dry gases.

#### **SX SMT Series.**

**Features:** Reduced cost • Small size  
• High impedance bridge • Low power consumption • Lidded or ported versions

**Benefits:** Standard version features low profile plastic lid to better withstand high temperatures; optional ported version has tube attachment port useful in potential gage applications. 4-pin closed bridge configuration for electrical connection with additional pads provided for mechanical

support. Potential applications include automotive diagnostics, medical and dental equipment, instrumentation, and battery powered equipment.

### **LOW PRESSURE – FLOW THROUGH SENSORS**

#### **24PC Flow-Through Series.**

**Features:** Miniature package • Media flow-through port • 1,78 mm [0.070 in] diameter or 5,0 mm [0.200 in] diameter flow path with minimal dead space  
• Operable after exposure to frozen conditions • Choice of termination for gage sensors

**Benefits:** Gage pressure sensing performance in miniature package with enhanced reliability. Sensing technology designed to use specialized piezoresistive micro-machined sensing element. Low power, non-amplified, non-compensated Wheatstone bridge circuit design often provides inherently stable mV outputs. 2 mA constant current excitation significantly reduces sensitivity shift over temperature. May be used to measure vacuum or positive pressure in potential medical and environmental applications.

#### **26PC Flow-Through Series.**

**Features:** Calibrated and temperature compensated • Miniature package  
• Media flow-through port • 1,78 mm [0.070 in] diameter or 5,0 mm [0.200 in] diameter flow path with minimal dead space • Operable after exposure to frozen conditions • Choice of termination for gage sensors

**Benefits:** Gage pressure sensing performance in miniature package with enhanced reliability. Sensing technology designed to use specialized piezoresistive micro-machined sensing element. Low power, non-amplified, non-compensated Wheatstone bridge circuit design often provides inherently stable mV outputs. 2 mA constant current excitation significantly reduces sensitivity shift over temperature. May be used to measure vacuum or positive pressure in potential medical and environmental applications.

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**PERSONAL INJURY**

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 **WARNING**  
**MISUSE OF DOCUMENTATION**

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