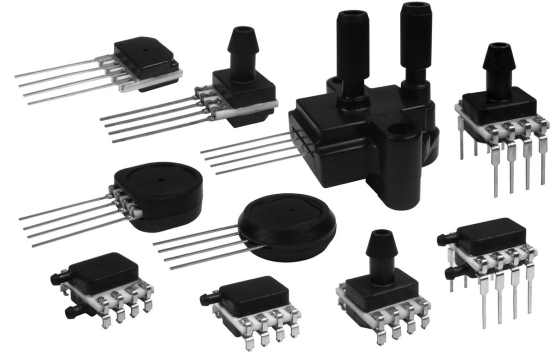


## Board Mount Pressure Sensors Line Guide



**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 on a chemically etched silicon diaphragm. A pressure change will cause 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. You

will 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 TruStability® HSC Series.

**Features:** Proprietary Honeywell technology • Industry-leading long-term stability, Total Error Band, and accuracy • High burst pressures • High working pressure ranges • Industry-leading flexibility • Excellent repeatability • Onboard signal conditioning • Wide variety of pressure ranges • Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1 requirements • Insensitive to mounting orientation • Custom calibration • Insensitive to vibration • Internal diagnostic functions • Energy efficient • I<sup>2</sup>C- or SPI-compatible digital output or analog output • Small size • RoHS compliant • Protected by multiple global patents • Intended for use with non-corrosive, non-ionic working fluids

**Benefits:** Proprietary Honeywell technology combines high sensitivity with high overpressure and burst pressure to give the customer more flexibility in sensor implementation and reduce the customer design requirements for protecting the sensor without sacrificing the ability to sense very small changes in pressure. Industry-leading long-term stability minimizes system calibration needs, maximizes system performance, and helps support system uptime

by eliminating the need to service or replace the sensor during its application life. Industry-leading Total Error Band provides the sensor's true accuracy over a compensated temperature range of 0 °C to 50 °C [32 °F to 122 °F], eliminating individual sensor testing and calibration (which can increase manufacturing time and process) supporting system accuracy and warranty requirements, helping optimize system uptime, and providing excellent sensor interchangeability. Industry-leading accuracy reduces software needed to correct system inaccuracies, minimizing system design time, supporting system accuracy and warranty requirements, and helping to optimize system uptime. High burst pressures above 415 inH<sub>2</sub>O (1034 mbar) allow the sensor to endure a wide range of conditions while maintaining a high level of sensitivity which measures even the smallest change in pressure, simplifying the design process. High working pressure ranges above 135 inH<sub>2</sub>O (336 mbar) allow the sensors to be used continuously well above the calibrated pressure range. Modular, flexible design with many package styles (with the same industry-leading stability), pressure ports, and options simplify integration into the device manufacturer's

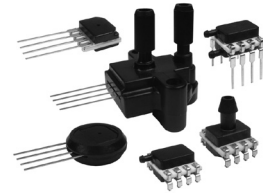
application. Onboard signal conditioning typically allows for the removal of signal conditioning components from the PCB, reducing costs and simplifying production processes. Pressure ranges from ±2.5 mbar to ±40 mbar | ±250 Pa to ±4 kPa | ±1 inH<sub>2</sub>O to ±30 inH<sub>2</sub>O provide support for many unique applications. Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1 requirements which allows the customer to avoid the thermal and mechanical damage during solder reflow attachment and/or repair that lesser rated products would incur, and allows unlimited floor life when stored as specified (<30 °C/ 85 %RH), simplifying storage and reducing scrap. Customers may position the sensor in the most optimal point in the system, eliminating concern for positional effects. Reduced susceptibility to application-specific vibration that occurs with changes in pressure minimizes inaccurate pressure readings. Custom calibration typically allows for the removal of additional components associated with signal conditioning from the PCB, reducing PCB size as well as costs often associated with those components. Internal diagnostic functions increase system reliability. Extremely low power consumption (less than 10 mW, typ.), provides extended battery life,

# Board Mount 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.

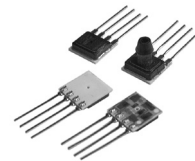
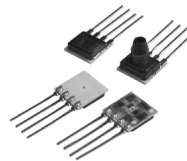


### Ultra-Low Pressure Sensors

#### TruStability® HSC Series

#### TruStability® SSC Series

<b>Signal conditioning</b>	amplified	amplified
<b>Pressure range</b>	±2.5 mbar to ±40 mbar   ±250 Pa to ±4 kPa   ±1 inH <sub>2</sub> O to ±30 inH <sub>2</sub> O	±2.5 mbar to ±40 mbar   ±250 Pa to ±4 kPa   ±1 inH <sub>2</sub> O to ±30 inH <sub>2</sub> O
<b>Device type</b>	differential, gage	differential, gage
<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>Temperature Compensated</b>	yes	yes
<b>Operating temperature range</b>	0 °C to 50 °C [32 °F to 120 °F] (compensated)	-20 °C to 85 °C [-4 °F to 185 °F] (compensated)
<b>Total error band</b>	±1 %FSS to ±3 %FSS depending on pressure range	±2 %FSS to ±5 %FSS depending on pressure range
<b>Accuracy</b>	±0.25 %FSS BFSL	±0.25 %FSS BFSL
<b>Mounting options</b>	DIP, SIP, SMT	DIP, SIP, SMT

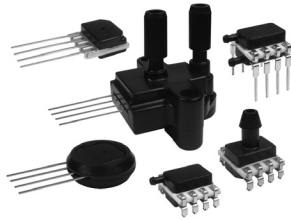


### Ultra-Low Pressure Sensors

#### CPCL Series

#### CPXL Series

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	4 inH <sub>2</sub> O to 10 inH <sub>2</sub> O	4 inH <sub>2</sub> O to 10 inH <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>Total error band</b>	-	-
<b>Accuracy</b>	linearity and hysteresis 0.5% typ.	linearity and hysteresis 0.5% typ.
<b>Mounting options</b>	SIP	SIP



## Ultra-Low Pressure Sensors

### TruStability® NSC Series

### ASDX Series

Signal conditioning	unamplified	amplified
Pressure range	±2.5 mbar to ±40 mbar   ±250 Pa to ±4 kPa   ±1 inH <sub>2</sub> O to ±30 inH <sub>2</sub> O	±5 inH <sub>2</sub> O, ±10 inH <sub>2</sub> O
Device type	differential, gage	differential, bidirectional gage
Output	mV	analog (Vdc), digital (I <sup>2</sup> C or SPI)
Calibrated	no	yes
Temperature compensated	no	yes
Operating temperature range	-40 °C to 85 °C [-40 °F to 185 °F]	0 °C to 85 °C [32 °F to 185 °F] (compensated)
Total error band	-	±2.0 %FSS max.
Accuracy	±0.25% FSS BFSL	-
Mounting options	DIP, SIP, SMT	DIP

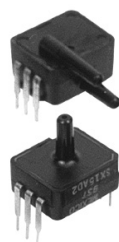


## Ultra-Low Pressure Sensors

### DCXL-DS

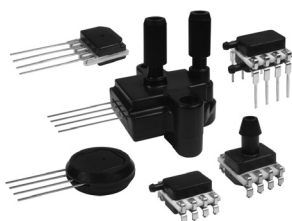
### XCXL Series

Signal conditioning	unamplified	unamplified
Pressure range	±1 inH <sub>2</sub> O to ±30 inH <sub>2</sub> O	±4 inH <sub>2</sub> O to ±10 inH <sub>2</sub> O
Device type	differential	differential
Output	mV	mV
Calibrated	yes	yes
Temperature compensated	yes	yes
Operating temperature range	0 °C to 50 °C [32 °F to 122 °F] (compensated)	0 °C to 70 °C [32 °F to 158 °F] (compensated)
Total error band	-	-
Accuracy	linearity and hysteresis 0.25% max.	linearity and hysteresis 0.5% max.
Mounting options	SIP	SIP



## Ultra-Low Pressure Sensors

	SCXL Series	SDX005IND4 SDX010IND4	SXL Series
<b>Signal conditioning</b>	unamplified	unamplified	unamplified
<b>Pressure range</b>	4 inH <sub>2</sub> O to 10 inH <sub>2</sub> O	±5 inH <sub>2</sub> O to ±10 inH <sub>2</sub> O	±10 inH <sub>2</sub> O
<b>Device type</b>	differential, gage	differential, gage	differential, gage
<b>Output</b>	mV	mV	mV
<b>Calibrated</b>	yes	yes	no
<b>Temperature compensated</b>	yes	yes	no
<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 50 °C [32 °F to 122 °F]
<b>Total error band</b>	-	-	-
<b>Accuracy</b>	linearity and hysteresis 0.2% typ.	linearity and hysteresis 0.2% typ.	linearity and hysteresis 0.2% typ.
<b>Mounting options</b>	SIP	DIP	SIP



## Low Pressure Sensors

	TruStability® HSC Series	TruStability® SSC Series
<b>Signal conditioning</b>	amplified	amplified
<b>Pressure range</b>	±60 mbar to ±10 bar   ±6 kPa to ±1 MPa   ±1 psi to ±150 psi	±60 mbar to ±10 bar   ±6 kPa to ±1 MPa   ±1 psi to ±150 psi
<b>Device type</b>	absolute, differential, gage	absolute, differential, gage
<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>	0 °C to 50 °C [32 °F to 122 °F] (compensated)	-20 °C to 85 °C [-4 °F to 185 °F] (compensated)
<b>Total error band</b>	±1 %FSS	±2 %FSS
<b>Accuracy</b>	±0.25 %FSS BFSL	±0.25 %FSS BFSL
<b>Mounting options</b>	DIP, SIP, SMT	DIP, SIP, SMT

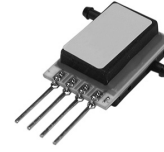
## Ultra-Low Pressure Sensors



XPCL Series

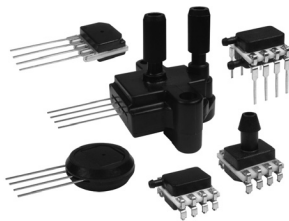


XPXL Series

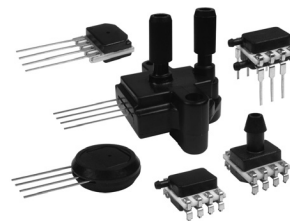


DUXL Series

	XPCL Series	XPXL Series	DUXL Series
<b>Signal conditioning</b>	unamplified	unamplified	unamplified
<b>Pressure range</b>	4 inH <sub>2</sub> O to 10 inH <sub>2</sub> O	4 inH <sub>2</sub> O to 10 inH <sub>2</sub> O	1 inH <sub>2</sub> O to 30 inH <sub>2</sub> O
<b>Device type</b>	differential, gage	differential, gage	differential, gage
<b>Output</b>	mV	mV	mV
<b>Calibrated</b>	yes	no	no
<b>Temperature compensated</b>	yes	no	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]	-25 °C to 85 °C [-13 °F to 185 °F]
<b>Total error band</b>	-	-	-
<b>Accuracy</b>	linearity and hysteresis 0.25% typ.	linearity and hysteresis 0.25% typ.	linearity and hysteresis 0.5% max.
<b>Mounting options</b>	SIP	SIP	SIP



TruStability® TSC Series



TruStability® NSC Series

## Low Pressure Sensors

	TruStability® TSC Series	TruStability® NSC Series
<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	±60 mbar to ±10 bar   ±6 kPa to ±1 MPa   ±1 psi to ±150 psi	±60 mbar to ±10 bar   ±6 kPa to ±1 MPa   ±1 psi to ±150 psi
<b>Device type</b>	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 85 °C [32 °F to 185 °F] (compensated)	40 °C to 85 °C [-40 °F to 185 °F]
<b>Total error band</b>	-	-
<b>Accuracy</b>	0.25 %FSS BFSL	0.25 %FSS BFSL
<b>Mounting options</b>	DIP, SIP, SMT	DIP, SIP, SMT

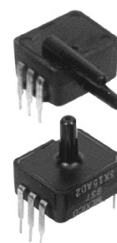
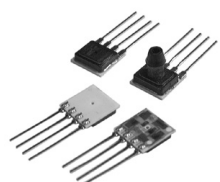


## Low Pressure Sensors

### Basic TBP Series

### Basic NBP Series

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	60 mbar to 10 bar   6 kPa to 1 MPa   1 psi to 150 psi	60 mbar to 10 bar   6 kPa to 1 MPa   1 psi to 150 psi
<b>Device type</b>	gage	gage, absolute
<b>Output</b>	mV	mV
<b>Calibrated</b>	yes	no
<b>Compensated</b>	yes	no
<b>Operating temperature range</b>	0 °C to 85 °C [32 °F to 185 °F] (compensated)	40 °C to 125 °C [-40 °F to 257 °F]
<b>Total error band</b>	-	-
<b>Accuracy</b>	±0.25 %FSS	±0.25 %FSS
<b>Mounting options</b>	DIP, leadless SMT, SMT	DIP, leadless SMT, SMT



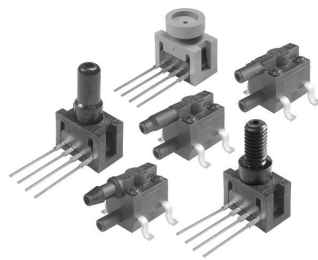
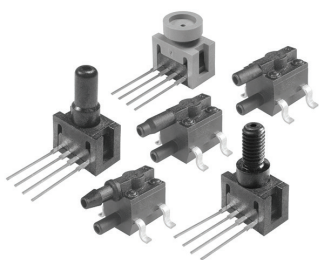
## Low Pressure Sensors

### CPC Series

### SCX Series

### SDX Series

<b>Signal conditioning</b>	unamplified	unamplified	unamplified
<b>Pressure range</b>	1 psi to 150 psi	1 psi to 150 psi	1 psi to 100 psi
<b>Device type</b>	absolute, differential, gage	absolute, differential, gage	absolute, differential, gage
<b>Output</b>	mV	mV	mV
<b>Calibrated</b>	yes	yes	yes
<b>Compensated</b>	yes	yes	yes
<b>Operating temperature range</b>	0 °C to 70 °C [32 °F to 158 °F] (compensated)	0 °C to 70 °C [32 °F to 158 °F] (compensated)	0 °C to 50 °C [32 °F to 122 °F] (compensated)
<b>Total error band</b>	-	-	-
<b>Accuracy</b>	linearity and hysteresis 0.25% typ.	linearity and hysteresis 0.1% typ.	linearity and hysteresis 0.25% typ.
<b>Mounting options</b>	SIP	SIP	DIP



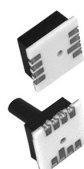
## Low Pressure Sensors

24PC Series

26PC Series

ASDX Series

<b>Signal conditioning</b>	unamplified	unamplified	amplified
<b>Pressure range</b>	0.5 psi to 250 psi (SIP, DIP) 1 psi to 15 psi (SMT)	1 psi to 250 psi (SIP, DIP) 1 psi to 15 psi (SMT)	1 psi to 100 psi
<b>Device type</b>	absolute, differential, wet-wet differential, gage	differential, wet-wet differential, gage	absolute, differential, gage, bidirectional
<b>Output</b>	mV	mV	analog (Vdc), digital (I <sup>2</sup> C or SPI)
<b>Calibrated</b>	no	yes	yes
<b>Compensated</b>	no	yes	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)	0 °C to 85 °C [32 °F to 185 °F] (compensated)
<b>Total error band</b>	-	-	±2.0% FSS max.
<b>Accuracy</b>	linearity & hysteresis 0.5% typ.	linearity & hysteresis 0.25% typ.	-
<b>Mounting options</b>	DIP, SIP, SMT	DIP, SIP, SMT	DIP



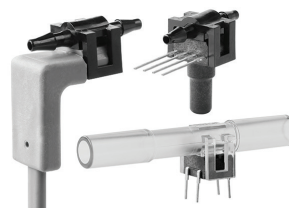
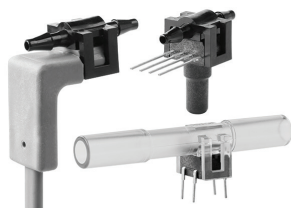
## Low Pressure Sensors

XPC Series

SCC Series

SX Series

<b>Signal conditioning</b>	unamplified	unamplified	unamplified
<b>Pressure range</b>	1 psi to 150 psi	5 psi to 100 psi	1 psi to 150 psi
<b>Device type</b>	absolute, differential, gage	absolute, gage	absolute, gage
<b>Output</b>	mV	mV	mV
<b>Calibrated</b>	yes	no	no
<b>Compensated</b>	yes	yes	no
<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)	-40 °C to 125 °C [-40 °F to 257 °F]
<b>Total error band</b>	-	-	-
<b>Accuracy</b>	linearity and hysteresis 1.0% max.	linearity, hysteresis and repeatability 0.2% typ.	linearity, hysteresis and repeatability 0.2% typ.
<b>Mounting options</b>	SIP	SMT	SMT



## Low Pressure – Flow Through Sensors

### 24PC Flow-Through Series

### 26PC Flow-Through Series

<b>Signal conditioning</b>	unamplified	unamplified
<b>Pressure range</b>	1 psi to 100 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>Total error band</b>	-	-
<b>Accuracy</b>	linearity and hysteresis 0.75% typ.	linearity and hysteresis 0.75% typ.
<b>Mounting options</b>	SIP, DIP	SIP, DIP



and promotes energy efficiency. I<sup>2</sup>C- or SPI-compatible 14-bit digital output (min. 12-bit sensor resolution) accelerates performance through reduced conversion requirements and the convenience of direct interface to microprocessors or microcontrollers; analog output also available. Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package is very small when compared to most board mount pressure sensors. Potential applications include medical (ventilators, anesthesia machines, spirometers, nebulizers, hospital room air pressure) and industrial (VAV (Variable Air Volume) control, static duct pressure, clogged HVAC (Heating, Ventilation, and Air Conditioning) filter detection, HVAC transmitters indoor air quality).

### **TruStability® SSC Series.**

**Features:** Proprietary Honeywell technology • Industry-leading long-term stability, Total Error Band, and accuracy • High burst pressures • High working pressure ranges • Industry-leading flexibility • Excellent repeatability • Onboard signal conditioning • Wide variety of pressure ranges • Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1 requirements • Insensitive to mounting orientation • Custom calibration • Insensitive to vibration • Internal diagnostic functions • Energy efficient • I<sup>2</sup>C- or SPI-compatible digital output or analog output • Small size • RoHS compliant • Protected by multiple global patents • Intended for use with non-corrosive, non-ionic working fluids

**Benefits:** Proprietary Honeywell technology combines high sensitivity with high overpressure and burst pressure to give the customer more flexibility in sensor implementation and reduce the customer design requirements for protecting the sensor without sacrificing the ability to sense very small changes in pressure. Industry-leading long-term stability minimizes system calibration needs, maximizes system performance, and helps support system uptime by eliminating the need to service or replace the sensor during its application life. Industry-leading Total Error Band provides the sensor's true accuracy over a compensated temperature range of -20

°C to 85 °C [-4 °F to 185 °F], eliminating individual sensor testing and calibration (which can increase manufacturing time and process) supporting system accuracy and warranty requirements, helping optimize system uptime, and providing excellent sensor interchangeability. Industry-leading accuracy reduces software needed to correct system inaccuracies, minimizing system design time, supporting system accuracy and warranty requirements, and helping to optimize system uptime. High burst pressures above 415 inH<sub>2</sub>O (1034 mbar) allow the sensor to endure a wide range of conditions while maintaining a high level of sensitivity which measures even the smallest change in pressure, simplifying the design process. High working pressure ranges above 135 inH<sub>2</sub>O (336 mbar) allow the sensors to be used continuously well above the calibrated pressure range. Modular, flexible design with many package styles (with the same industry-leading stability), pressure ports, and options simplify integration into the device manufacturer's application. Onboard signal conditioning typically allows for the removal of signal conditioning components from the PCB, reducing costs and simplifying production processes. Pressure ranges ±2.5 mbar to ±40 mbar | ±250 Pa to ±4 kPa | ±1 inH<sub>2</sub>O to ±30 inH<sub>2</sub>O provide support for many unique applications. Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1 requirements which allows the customer to avoid the thermal and mechanical damage during solder reflow attachment and/or repair that lesser rated products would incur, and allows unlimited floor life when stored as specified (<30 °C/85 %RH), simplifying storage and reducing scrap. Customers may position the sensor in the most optimal point in the system, eliminating concern for positional effects. Reduced susceptibility to application-specific vibration that occurs with changes in pressure minimizes inaccurate pressure readings. Custom calibration typically allows for the removal of additional components associated with signal conditioning from the PCB, reducing PCB size as well as costs often associated with those components. Internal diagnostic

functions increase system reliability. Extremely low power consumption (less than 10 mW, typ.) reduces power consumption, provides extended battery life, and promotes energy efficiency. I<sup>2</sup>C- or SPI-compatible 14-bit digital output (min. 12-bit sensor resolution) accelerates performance through reduced conversion requirements and the convenience of direct interface to microprocessors or microcontrollers; analog output also available. Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package is very small when compared to most board mount pressure sensors. Potential applications include medical (ventilators, anesthesia machines, spirometers, nebulizers, hospital room air pressure) and industrial (VAV (Variable Air Volume) control, static duct pressure, clogged HVAC (Heating, Ventilation, and Air Conditioning) filter detection, HVAC transmitters indoor air quality).

### **TruStability® NSC Series.**

**Features:** Industry-leading long-term stability, accuracy and flexibility • Small size • Excellent repeatability • Extremely low power consumption • Low operating voltage • Sensitive • Virtually insensitive to mounting orientation • Ratiometric analog output • Infinite resolution • Fast response time • RoHS compliant

**Benefits:** Allows customers the flexibility of sensor self-calibration. Industry-leading long-term stability minimizes system calibration needs and maximizes system performance. Industry-leading accuracy reduces software needed to correct system inaccuracies, minimizing system design time. Industry-leading flexibility, due to numerous package styles, pressure ports, and options, which simplifies integration into the device manufacturer's application. Single side liquid media option allows the end customer to use one port of the sensor with condensing humidity or directly with non-corrosive liquid media. Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package is very small when compared to most board mount pressure sensors. Provides excellent repeatability, high accuracy and reliability under many demanding conditions. Extremely low

power consumption (operating supply voltage as low as 1.8 Vdc) which reduces power consumption, provides extended battery life and promotes energy efficiency. Sensitive: meets specified pressure level requirements, providing enhanced sensitivity and accuracy over the range. Potential medical applications include respiratory breathing circuits such as nebulizers, spirometers and patient monitoring; hospital gas supply; and precise sampling/gas flow such as blood analysis, gas chromatography and analytical instrument sampling systems. Potential industrial applications include pneumatic components such as valves, pumps and actuators; pneumatic systems such as HVAC transmitters, pneumatic automated assembly equipment and pneumatic operator control systems; gas collection/delivery; and precise sampling/gas flow applications such as barometry, gas chromatography and analytical instrument sampling systems.

#### **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.

#### **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.

#### **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.

#### **SSL 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.

#### **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.

#### **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® 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 or I<sup>2</sup>C or SPI digital 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 • SMT, SIP and DIP packages • Absolute, differential, and gage types • Pressure ranges from 60 mbar to 10 bar | 6 kPa to 1 MPa | 1 psi to 150 psi • Custom calibration available • Various pressure port options • Liquid media option

**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.

These sensors are intended for use with non-corrosive, non-ionic gases, such as air and other dry gases, as well as non-corrosive, non-ionic liquids. 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.

#### **TruStability® 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 or I<sup>2</sup>C or SPI digital 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 • SMT, SIP and DIP packages • Absolute, differential, gage and compound types • Pressure ranges from 60 mbar to 10 bar | 6 kPa to 1 MPa | 1 psi to 150 psi • Custom calibration available • Various pressure port options • Liquid media option

**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. These sensors are intended for use with non-corrosive, non-ionic gases, such as air and other dry gases, as well as non-corrosive, non-ionic liquids. 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.

### **TruStability® TSC Series.**

**Features:** Industry-leading long-term stability • Industry-leading accuracy • Industry-leading flexibility • Insensitive to mounting orientation • Small size • Repeatability • Supports lean manufacturing • Extremely low power consumption • Absolute, differential and gage types • Pressure ranges from 60 mbar to 10 bar | 6 kPa to 1 MPa | 1 psi to 150 psi • RoHS and ISO9001 compliance

**Benefits:** Even after long-term use and thermal extremes, these sensors perform substantially better relative to stability than any other pressure sensor available in the industry today which minimizes system calibration needs, maximizes system performance and helps support system uptime by eliminating the need to service or replace the sensor during its application life. Extremely tight accuracy down to  $\pm 0.25\%$  FSS BFSL reduces software needed to correct system inaccuracies, minimizing system design time, and supports system accuracy and warranty requirements. Modular, flexible design with numerous package styles, pressure ports, and options simplifies integration into the device manufacturer's application. Single side wet media option allows the end customer to use one port of the sensor with condensing humidity or directly with non-corrosive liquid media. Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package is very small when

compared to most board mount pressure sensors which occupies less area on the PCB and typically allows for easy placement on crowded PCBs or in small devices. Provides excellent repeatability, high accuracy and reliability under many demanding conditions. J-STD-020-D MSL 1 unlimited shelf life after packaging is opened, system can be calibrated within one hour after reflow solder and is compatible with modern lead-free and no-clean solder processes. Operating supply voltage as low as 1.5 Vdc which reduces power consumption, provides extended battery life, and promotes energy efficiency. Potential medical applications include nebulizers, spirometers, patient monitoring equipment, therapeutic hospital beds, hospital gas supply, oxygen concentrators, blood analysis, gas chromatography, and analytical instruments. Potential industrial applications include valves, pumps, actuators, HVAC transmitters, automated pneumatic assembly equipment, pneumatic operator control systems, industrial gas supply, barometry, gas chromatography, and analytical instrument sampling systems.

### **TruStability® NSC Series.**

**Features:** Industry-leading long-term stability, accuracy and flexibility • Small size • Excellent repeatability • Extremely low power consumption • Low operating voltage • Sensitive • Virtually insensitive to mounting orientation • Ratiometric analog output • Infinite resolution • Fast response time • RoHS compliant

**Benefits:** Allows customers the flexibility of sensor self-calibration. Industry-leading long-term stability minimizes system calibration needs and maximizes system performance. Industry-leading accuracy reduces software needed to correct system inaccuracies, minimizing system design time. Industry-leading flexibility, due to numerous package styles, pressure ports, and options, which simplifies integration into the device manufacturer's application. Single side liquid media option allows the end customer to use one port of the sensor with condensing humidity or directly with

non-corrosive liquid media. Miniature 10 mm x 10 mm [0.39 in x 0.39 in] package is very small when compared to most board mount pressure sensors. Provides excellent repeatability, high accuracy and reliability under many demanding conditions. Extremely low power consumption (operating supply voltage as low as 1.8 Vdc) which reduces power consumption, provides extended battery life and promotes energy efficiency. Meets specified pressure level requirements, providing enhanced sensitivity and accuracy over the range. Potential medical applications include respiratory breathing circuits such as nebulizers, spirometers and patient monitoring; hospital gas supply; and precise sampling/gas flow such as blood analysis, gas chromatography and analytical instrument sampling systems. Potential industrial applications include pneumatic components such as valves, pumps and actuators; pneumatic systems such as HVAC transmitters, pneumatic automated assembly equipment and pneumatic operator control systems; gas collection/delivery; and precise sampling/gas flow applications such as barometry, gas chromatography and analytical instrument sampling systems.

### **Basic TBP Series**

**Features:** Cost-effective sensors with many options • Small package size • Wide operating temperature range of -40 °C to 125 °C [-40 °F to 257 °F] • Media compatibility options • ROHS AND ISO 9001 compliance • Many package styles, pressure ranges, silicone gel coating and porting options • Supports lean manufacturing • Manufacturing excellence • Reliable supply chain • Designed to Six Sigma standards • Supporting documentation

**Benefits:** Helps customers to meet their specific application needs. Package size of 7 mm x 7 mm [0.276 in x 0.276 in], which is very small when compared to most board mount pressure sensors, occupies less space on the PCB (printed circuit board) and typically allows for easy placement on crowded PCBs or in small devices. Choice of no gel coating



system can be calibrated within one hour after reflow solder, and compatible with modern lead-free and no-clean solder processes. Honeywell has more than 100 years of manufacturing and engineering excellence. Honeywell's effective inventory management and dependable supply chain are there throughout your product life cycle. Six Sigma standards provide the highest level of product quality, performance and consistency, provides confidence that the sensor will perform to specification. Honeywell's website provides technical materials to assist you in your application needs. Potential medical applications include hospital beds, oxygen concentrators, wound therapy, and blood pressure monitoring. Potential industrial applications include HVAC transmitters, air movement control, environmental control, leak detection, industrial controls, pneumatic controls, and other commercial applications.

#### **Basic NBP Series.**

**Features:** Cost-effective • Honeywell brand • Small size • Durable • Flexible • Robust

**Benefits:** Cost-effective pressure sensing solution with a variety of options that allow customers to meet their specific application needs. The Honeywell brand provides manufacturing excellence, fast response to request for quotes and samples, reliable supply chain, Six Sigma standards design, and supporting documentation. Small package size (as small as 7 mm x 7 mm [0.276 in x 0.276 in]) is very small when compared to most board mount pressure sensors, occupying less space on the PCB and typically allowing for easy placement on crowded PCBs or in small devices. Wide operating temperature range (-40 °C to 125 °C [-40 °F to 257 °F]), gel or non-gel coating media compatibility options, and ISO 9001 compliance allow for use in tough environments. Numerous package styles, pressure ranges, housings, gel coating, and porting options simplify integration into the device manufacturer's application. Reflow mounting J-STD-020D, MSL 1 and rapid stabilization after reflow soldering allow calibration immediately after

mounting. Potential medical applications include hospital beds, oxygen concentrators, wound therapy, and blood pressure monitoring. Potential industrial applications include HVAC transmitters, air movement control, environmental control, level indicators, leak detection, industrial controls, pneumatic controls, and other commercial applications.

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

**Features:** True wet/wet differential sensing • Miniature package • Operable after exposure to frozen conditions • Choice of termination for gage sensors • DIP and SMT packages

**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 • SIP and DIP packages

**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.

#### **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.

#### **SCC Series.**

**Features:** Temperature compensated • Reduced cost • Small size • SMT package

**Benefits:** Designed for potential applications where sensing element is integral to OEM equipment. 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 • SMT package • High-impedance bridge • Low noise • Low power consumption for battery power

**Benefits:** Designed for potential applications where sensing element is integral to OEM equipment. 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.

### **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.

**Warranty.** 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 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.

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