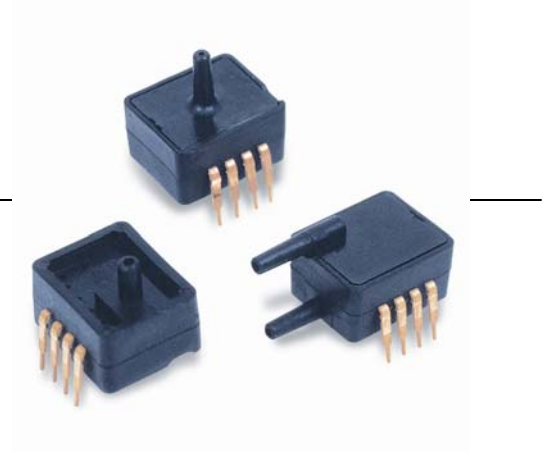


## ASDX Series

### Pressure Sensors 0 psi to 1 psi through 0 psi to 100 psi



#### DESCRIPTION

The ASDX Series is an amplified version of Honeywell's proven performer and industry leading SDX Series sensor. The ASDX sensor's footprint is slightly larger than the SDX; however, it offers a high level output (4.0 Vdc span) on a very cost-effective basis. This series is fully calibrated and temperature compensated with on-board Application Specific Integrated Circuitry (ASIC).

These DIP (Dual In-line Package) sensors are designed for use with non-corrosive, non-ionic working fluids; such as air and dry gases.

#### FEATURES

- ASIC-enhanced output
- Wide compensated temperature range 0 °C to 85 °C [32 °F to 185 °F]
- Available in absolute, differential and gage types
- Pressure ranges from 0 psi to 1 psi through 0 psi to 100 psi
- Accuracy  $\pm 2.0\%$  max. V full scale
- Quantization step of 3 mV
- Response time of 8 ms

Sensors are available to measure absolute, differential and gage pressures. The absolute sensors have an internal vacuum reference and an output voltage proportional to absolute pressure. The differential sensors allow application of pressure to either side of the sensing diaphragm and may be used for differential or gage measurements. Bidirectional versions are also available.

All ASDX Series sensors are accurate to within  $\pm 2.0\%$  full scale and are designed for operation from a single 5.0 Vdc supply.

#### POTENTIAL APPLICATIONS

- Flow calibrators
- Ventilation and air flow monitors
- Gas flow instrumentation
- Dialysis equipment
- Sleep apnea monitoring and therapy equipment
- Barometry
- HVAC controls
- Pneumatic controls

# ASDX Series

**TABLE 1. GENERAL SPECIFICATIONS**

Supply voltage (Vs) <sup>(1)</sup>	4.75 Vdc to 5.25 Vdc
Maximum supply voltage <sup>(1)</sup>	6.50 Vdc (max.)
Consumption current	6 mA (typ.)
Output current (sink)	2 mA (max.)
Output current (source)	2 mA (max.)
Lead temperature	2 s to 4 s at 250 °C [482 °F]
Compensated temp. range	0 °C to 85 °C [32 °F to 185 °F]
Operating temp. range	-20 °C to 105 °C [-4 °F to 221 °F]
Storage temp. range	-40 °C to 125 °C [-40 °F to 257 °F]
Vibration	10 g at 20 Hz to 2000 Hz
Shock	100 g for 11 ms
Life	1 million cycles minimum

**Note:**  
 1. The sensor is not reverse polarity protected. Incorrect application of excitation voltage or ground to the wrong pin can cause electrical failure. Application of supply voltage above the maximum can cause electrical failure.

**TABLE 2. PRESSURE RANGE SPECIFICATIONS**

Catalog Listing	Pressure Range	Burst Pressure <sup>(1)</sup>	Sensitivity
ASDX001	0 psi to 1 psi	5 psi	4.00 V/psi
ASDX005	0 psi to 5 psi	20 psi	0.80 V/psi
ASDX015	0 psi to 15 psi	30 psi	0.267 V/psi
ASDX030	0 psi to 30 psi	60 psi	0.133 V/psi
ASDX100	0 psi to 100 psi	150 psi	0.040 V/psi

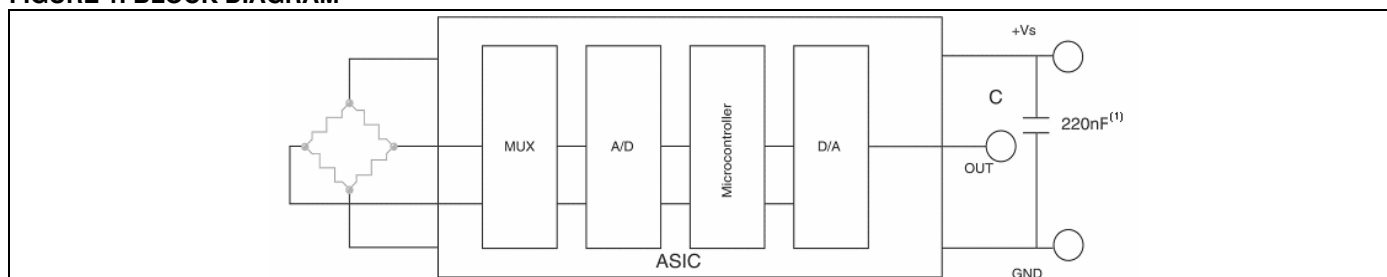
**Note:**  
 1. If the maximum burst pressure is exceeded, even momentarily, the package may leak or burst, or the pressure sensing die may fracture.

**TABLE 3. PERFORMANCE SPECIFICATIONS<sup>(1)</sup>**

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Note
Zero pressure offset	Voff	0.420	0.500	0.580	Vdc	–
Full scale span	Vfss		4.00	–	Vdc	2
Output at FS pressure	Vfso	4.420	4.500	4.580	Vdc	–
Accuracy	–	–	–	±2.0	%V	3
Response time	–	–	8	–	ms	4
Quantization step	–	–	3	–	mV	5

**Notes:**  
 1. Reference conditions (unless otherwise noted): Supply voltage,  $V_s = 5.0 \pm 0.01$  Vdc;  $T_a = 25$  °C [77 °F]. Output is ratiometric within the supply voltage range (Vs).  
 2. Span is the algebraic difference between the output voltage at the specified pressure and the output at zero pressure. Span is ratiometric to the supply voltage.  
 3. Accuracy is the combined errors from offset and span calibration, linearity, pressure hysteresis, and temperature effects. Linearity is the measured deviation based on a straight line. Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure. Calibration errors include the deviation of offset and full scale from nominal values.  
 4. Response time for a 0 psi to full-scale pressure step change, 10% to 90% rise time.  
 5. The smallest change in the output voltage, given any change in pressure.

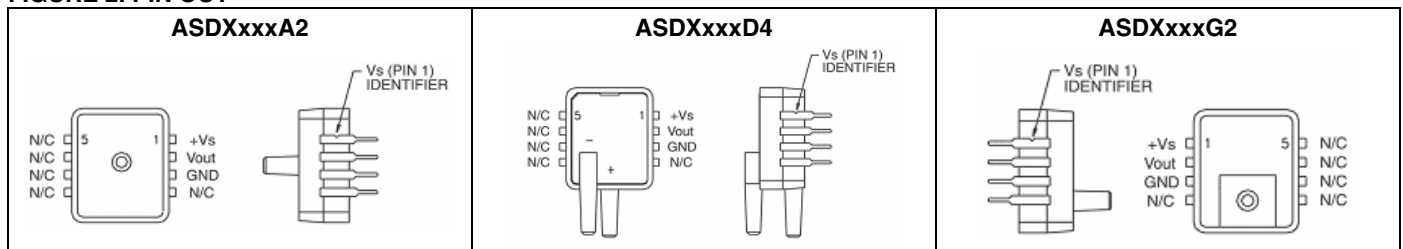
**FIGURE 1. BLOCK DIAGRAM**



**Note:**  
 1. 220 nF capacitor is required between +Vs and GND. 15 nF capacitor between Vout and ground is optional.

# Pressure Sensors, 0 psi to 1 psi through 1 psi to 100 psi

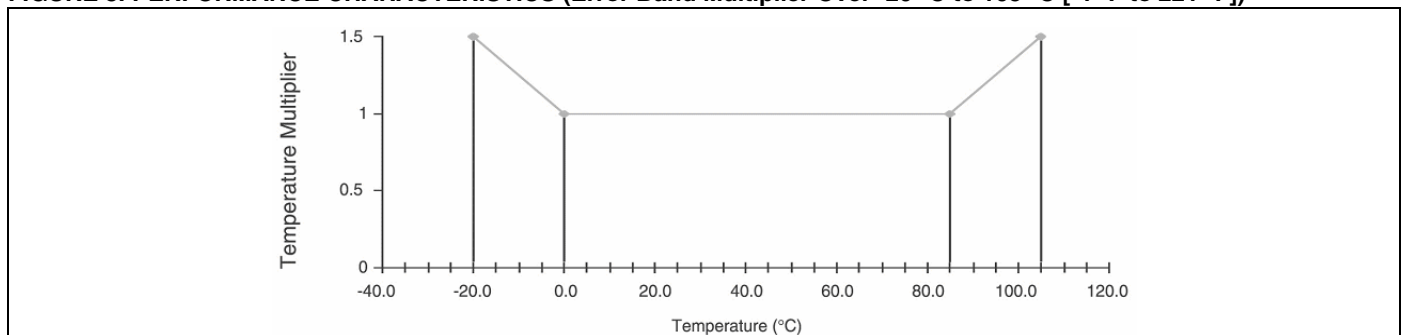
**FIGURE 2. PIN OUT<sup>(1,2)</sup>**



**Notes:**

1. N/C means no connection. Connecting to ground will damage the sensor.
2. Pins 4, 5, 6, 7 and 8 are internal connections and should not be connected to external circuitry or ground.

**FIGURE 3. PERFORMANCE CHARACTERISTICS (Error Band Multiplier Over -20 °C to 105 °C [-4 °F to 221 °F])**



**FIGURE 4. DIMENSIONAL DRAWINGS (For reference only: mm [in.])**

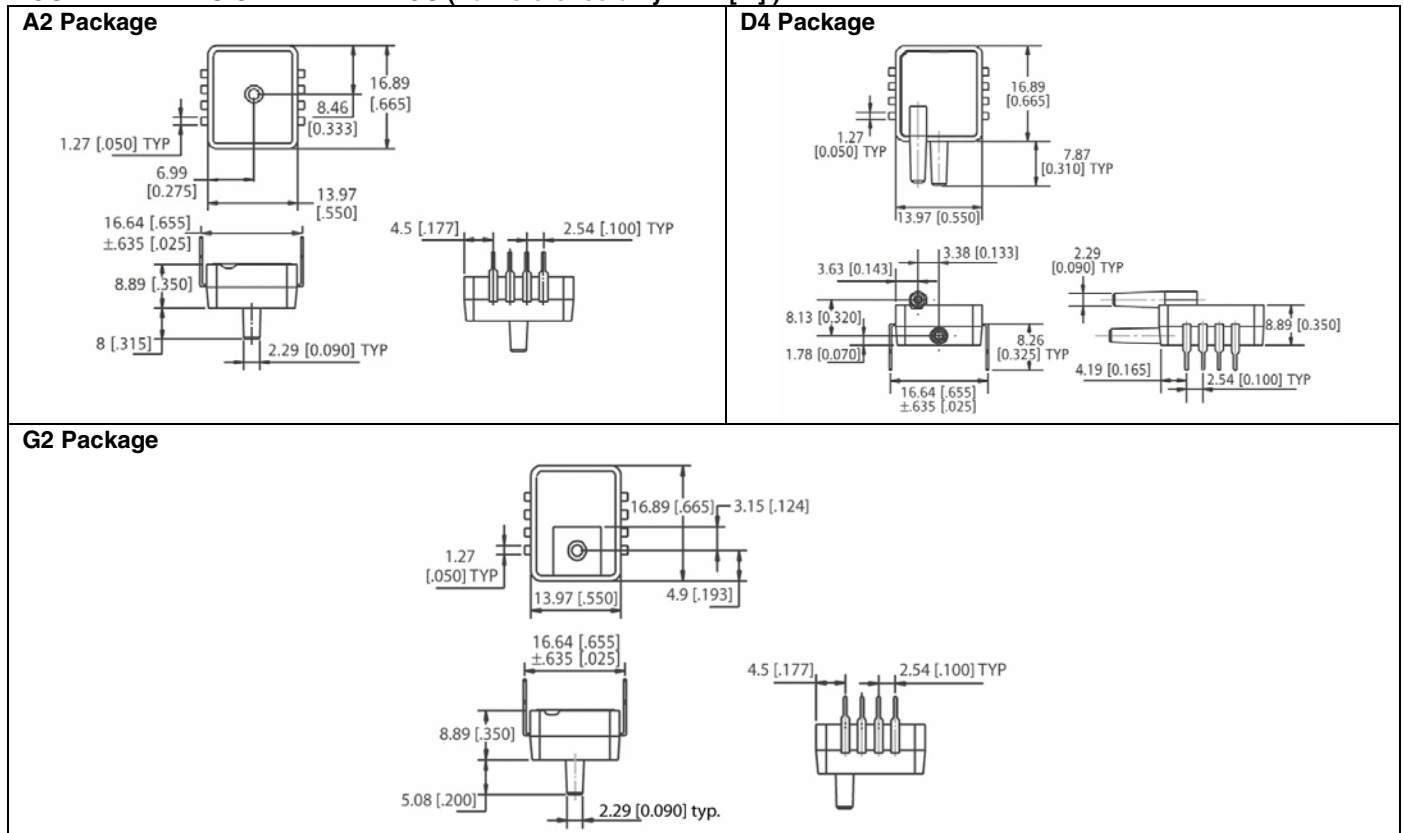
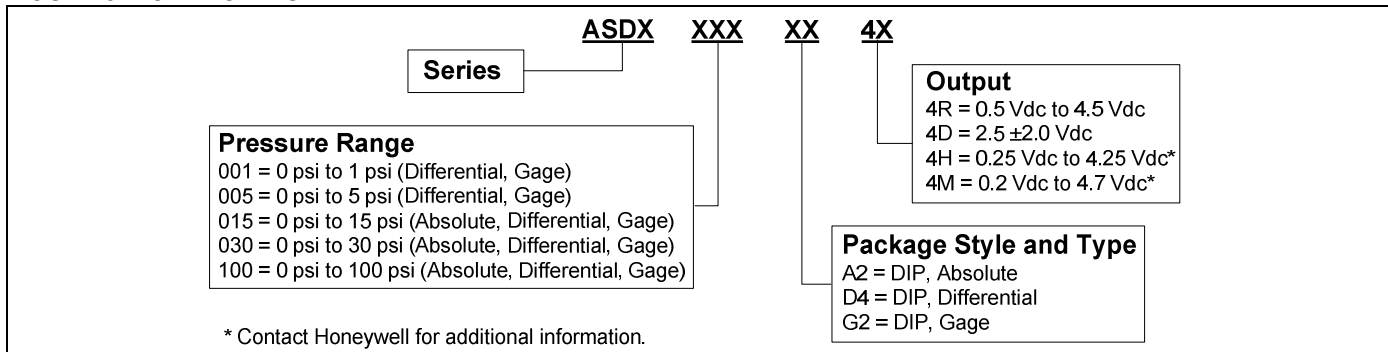


FIGURE 5. NOMENCLATURE TREE



ORDER GUIDE

Absolute Catalog Listing	Differential <sup>(1)</sup> Catalog Listing	Gage Catalog Listing	Bidirectional Catalog Listing	Pressure Range
-	ASDX001D44R	ASDX001G24R	-	0 psi to 1 psi
-	ASDX005D44R	ASDX005G24R	-	0 psi to 5 psi
ASDX015A24R	ASDX015D44R	ASDX015G24R	-	0 psi to 15 psi
ASDX030A24R	ASDX030D44R	ASDX030G24R	-	0 psi to 30 psi
ASDX100A24R	ASDX100D44R	ASDX100G24R	-	0 psi to 100 psi
-	-	-	ASDX001D44D	±1 psi
-	-	-	ASDX005D44D	±5 psi
-	-	-	ASDX015D44D	±15 psi
-	-	-	ASDX030D44D	±30 psi
-	-	-	ASDX100D44D	±100 psi

Note:

1. May also be used in gage applications.

**⚠ WARNING**  
**PERSONAL INJURY**  
 DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.  
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E-mail: info.sc@honeywell.com

Internet: www.honeywell.com/sensing

Phone and Fax:

Asia Pacific +65 6355-2828; +65 6445-3033 Fax  
 Europe +44 (0) 1698 481481; +44 (0) 1698 481676 Fax  
 Latin America +1-305-805-8188; +1-305-883-8257 Fax  
 USA/Canada +1-800-537-6945; +1-815-235-6847  
 +1-815-235-6545 Fax

Sensing and Control  
 Honeywell  
 1985 Douglas Drive North  
 Golden Valley, Minnesota 55422  
[www.honeywell.com/sensing](http://www.honeywell.com/sensing)

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