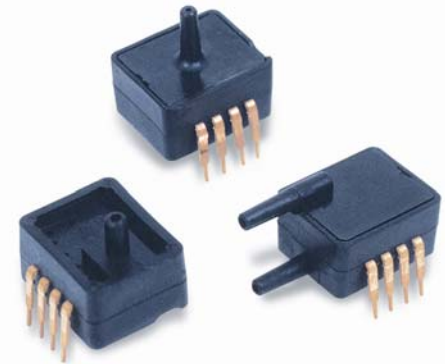


ASDX Series

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) ⁽¹⁾	4.75 Vdc to 5.25 Vdc
Maximum supply voltage ⁽¹⁾	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 ⁽¹⁾	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.

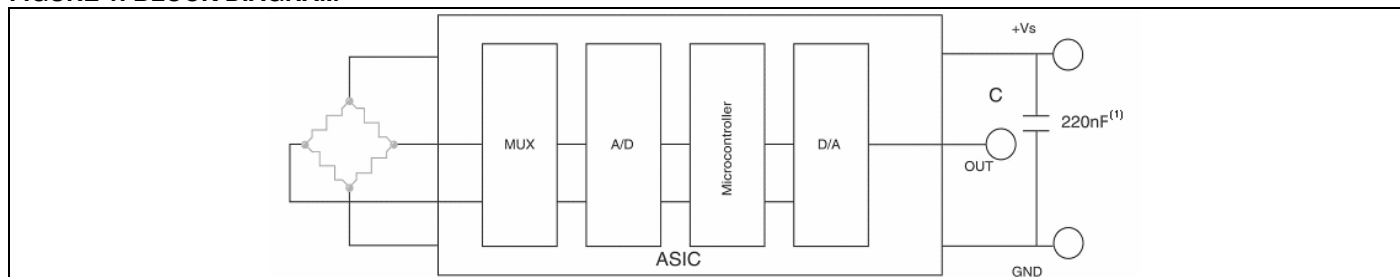
TABLE 3. PERFORMANCE SPECIFICATIONS⁽¹⁾

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.

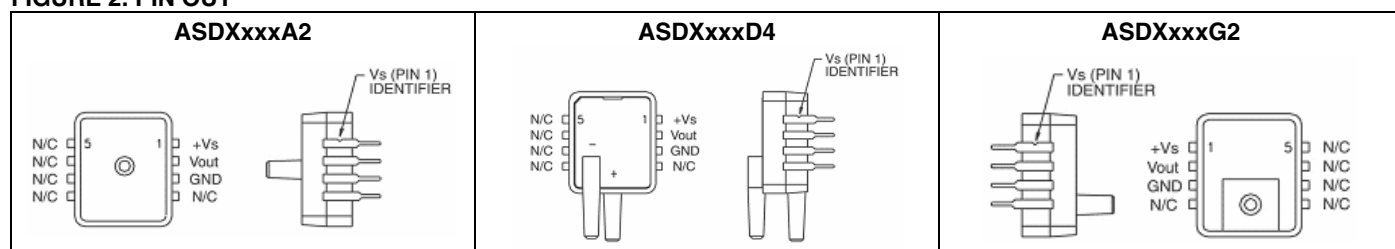
FIGURE 1. BLOCK DIAGRAM



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^(1, 2)

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.

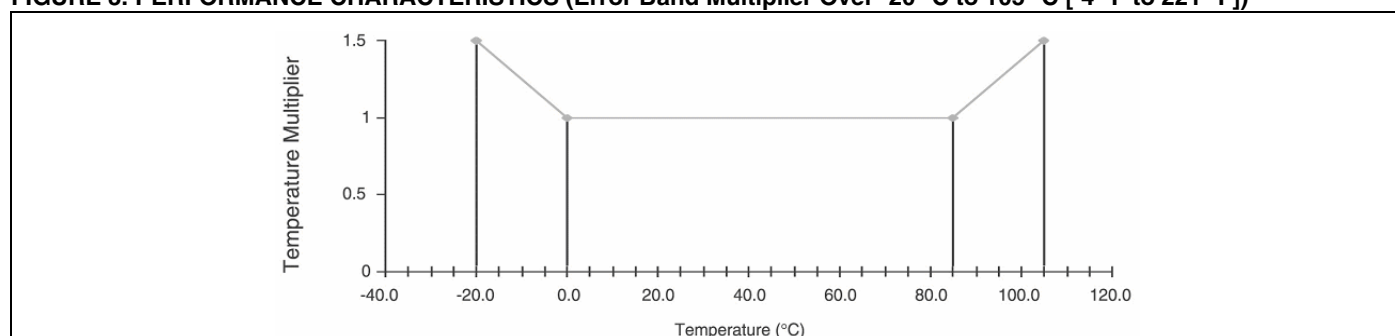
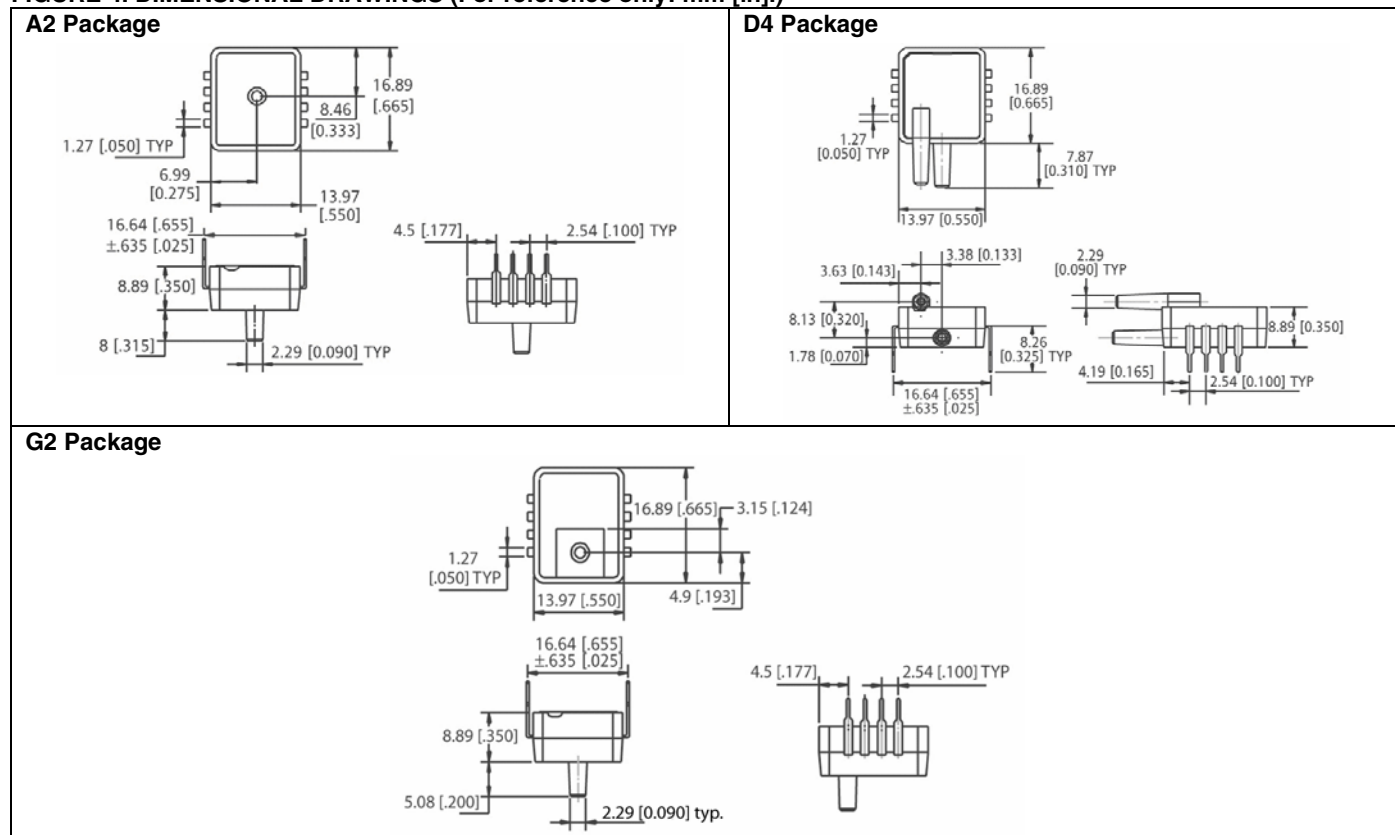
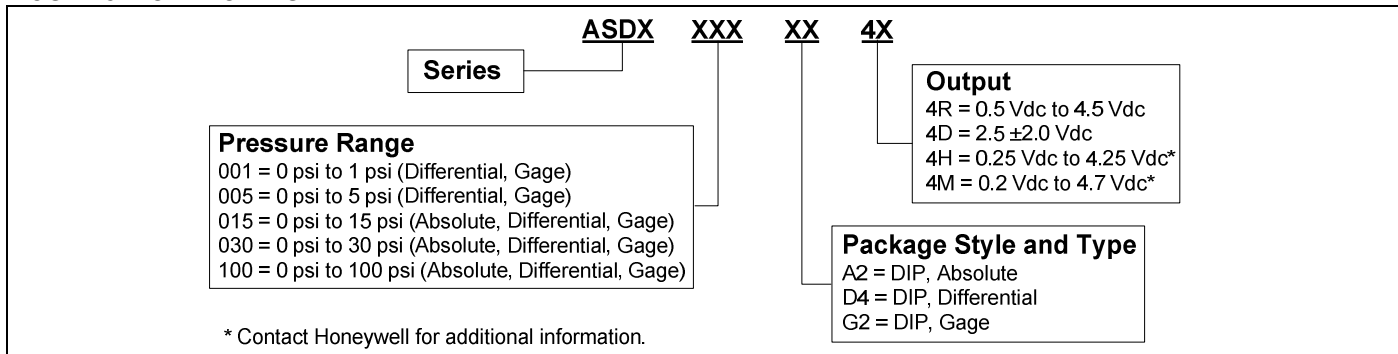
FIGURE 3. PERFORMANCE CHARACTERISTICS (Error Band Multiplier Over -20 °C to 105 °C [-4 °F to 221 °F])

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


FIGURE 5. NOMENCLATURE TREE



ORDER GUIDE

Absolute Catalog Listing	Differential ⁽¹⁾ 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.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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

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

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

SALES AND SERVICE

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

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

008090-6-EN IL50 GLO Printed in USA

October 2008

Copyright © 2008 Honeywell International Inc. All rights reserved.

Honeywell