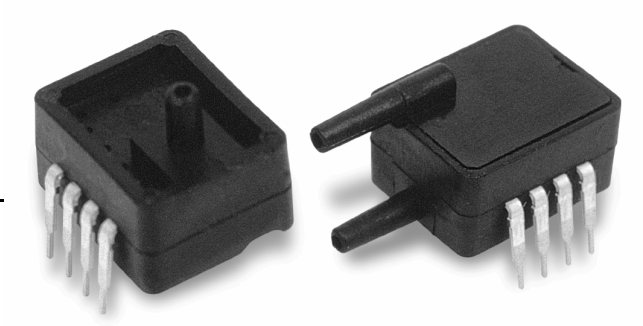
Honeywell

ASDXL Series

Microstructure Pressure Sensors
0 in to ±5 in H_2O, 0 in to 10 in H_2O, 0 in to ±10 in H_2O



DESCRIPTION

The ASDXL Series pressure sensors are fully calibrated and temperature compensated with on-board Application Specific Integrated Circuitry (ASIC). This ASDXL sensor is in a DIP format (Dual In-line Package) and provides digital correction of sensor offset, sensitivity, temperature coefficients and non-linearity. The ASDXL Series has an analog output that is ratiometric with supply voltage over the compensated supply range with 11-bit resolution.

All ASDXL sensors are accurate to within ±2.5 % Full Scale Span (FSS) and are intended for use with non-corrosive, non-ionic working fluids such as air and dry gases. (Contact factory for media compatibility on G2/D4 packages).

This series is designed and manufactured in accordance with ISO 9001 standards and is compliant with the WEEE and RoHS directives.

FEATURES

- Available in differential and gage packages
- Calibrated and temperature compensated output
- Analog output with 11-bit resolution
- Pressure ranges from 0 in to ±5 in H_2O, 10 in H_2O, ±10 in H_2O
- Response time of 8 ms
- DIP package
- ASIC-enhanced output

POTENTIAL APPLICATIONS

- Medical equipment
- HVAC controls
- Pneumatic controls

ASDXL Series
0 in to ±5 in H_2O, 0 in to 10 in H_2O, 0 in to ±10 in H_2O

GENERAL SPECIFICATIONS

Characteristic	Parameter	Characteristic	Parameter
Supply voltage (Vs)	4.75 Vdc to 5.25 Vdc	Lead soldering temperature	4 s at 250 °C [482 °F]
Maximum supply voltage	6.50 Vdc max.	Vibration	10 g at 20 Hz to 2000 Hz
Current consumption	6 mA typ.	Shock	100 g for 11 ms
Output current - sink	2 mA max.	Life	1 million cycles min.
Output current - source	2 mA max.	Position sensitivity	50 μV/V/g typical

ENVIRONMENTAL SPECIFICATIONS

Characteristic	Range
Compensated	0 °C to 85 °C [32 °F to 185 °F]
Operating	-20 °C to 105 °C [-4 °F to 221 °F]
Storage	-40 °C to 125 °C [-40 °F to 257 °F]

PRESSURE RANGE SPECIFICATIONS

Listing	Pressure Range	Burst Pressure [1]
ASDXL05	0 in to ±5 in H_20	3 PSI
ASDXL10	0 in to 10 in H_20	3 PSI
	0 in to ±10 H_20	

PERFORMANCE CHARACTERISTICS 4D [2]

Characteristic	Min.	Typ.(5)	Max.	Unit
Full scale span (FSS) [3,4]	–	4.000	–	V
Zero pressure offset [4]	2.400	2.500	2.600	V
Output at full scale pressure (P2) [4,5]	4.400	4.500	4.600	V
Output at full scale pressure (P1) [4,5]	0.400	0.500	0.600	V
Accuracy [6]	–	–	±2.5	% FSS
Quantization error [7]	2.44	–	–	mV
Response time [8]	–	8	11	ms

PERFORMANCE CHARACTERISTICS 4R [2]

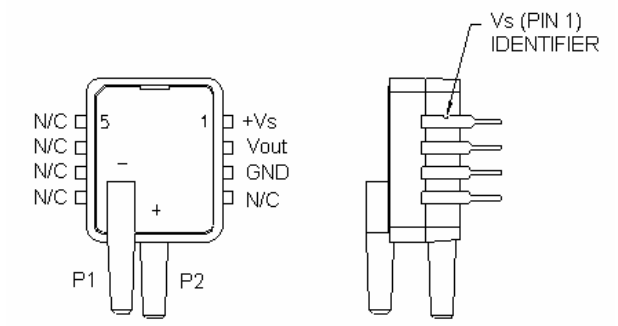
Characteristic	Min.	Typ.	Max.	Unit
Full scale span (FSS) [3,4]	–	4.000	–	V
Zero pressure offset [4]	0.400	0.500	0.600	V
Output at full scale pressure [4]	4.400	4.500	4.600	V
Accuracy [6,7]	–	–	±2.5	% FSS
Quantization error [7]	2.44	–	–	mV
Response time [8]	–	8	11	ms

Notes:

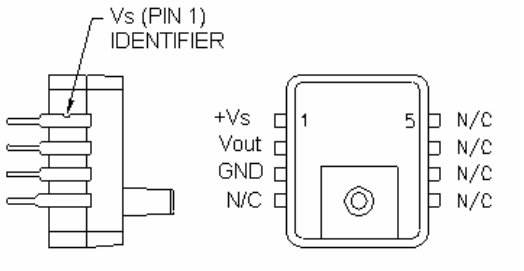
1. If burst pressure is exceeded, even momentarily, the package may leak or the pressure sensing die may fracture.
2. Reference conditions (unless otherwise noted): supply voltage, V_S=5.0 ±0.01 Vdc, Ta=25 °C [77 °F].
3. Span is the algebraic difference between the output voltage at the specified pressure and the output at zero pressure.
4. Output is ratiometric within the supply voltage range (Vs).
5. Output of the device when maximum positive pressure is applied on the backside (P2) or the front side (P1) of the sensing element.
6. Accuracy is the combined errors from offset and span calibration, linearity, pressure hysteresis, and temperature effects. Calibration errors include the deviation of offset and full scale from nominal values 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 and temperature.
7. Minimum step size in the output due to a change in the input pressure.
8. Response time for 0 PSI to full scale pressure step change, 10% to 90% rise time.
9. 220 nF capacitor required between +Vs and GND.

ELECTRICAL CONNECTIONS [1,2,3]

ASDXLYYD4ZZ



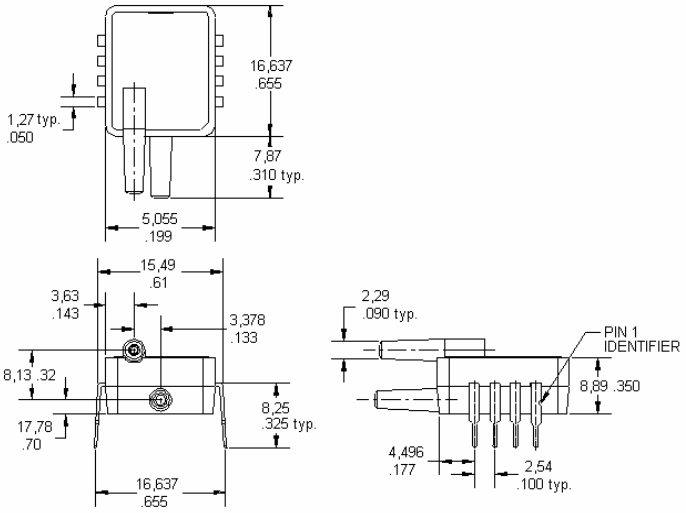
ASDXLYYG2ZZ



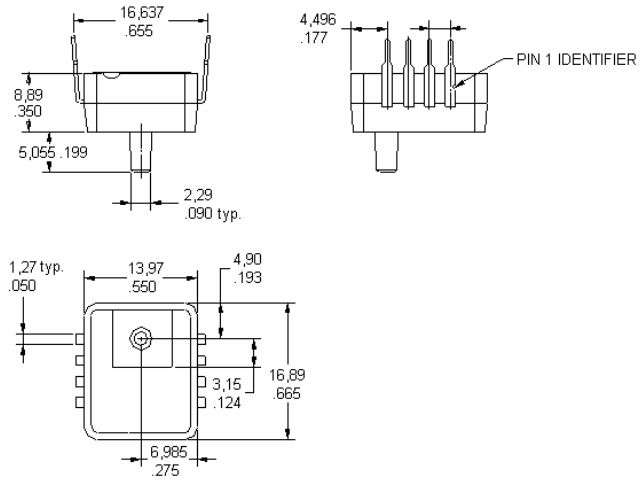
Notes:
1. N/C means no connection. Connecting to ground or other potential may damage sensor
2. Capacitor 220 nF required between +Vs and GND.
3. The sensor is not reverse polarity protected. Incorrect application of excitation voltage or ground to the wrong pin can cause electrical failure. Application of supply voltage above the maximum can cause electrical failure.

DIMENSIONS (For reference only, mm/in.)

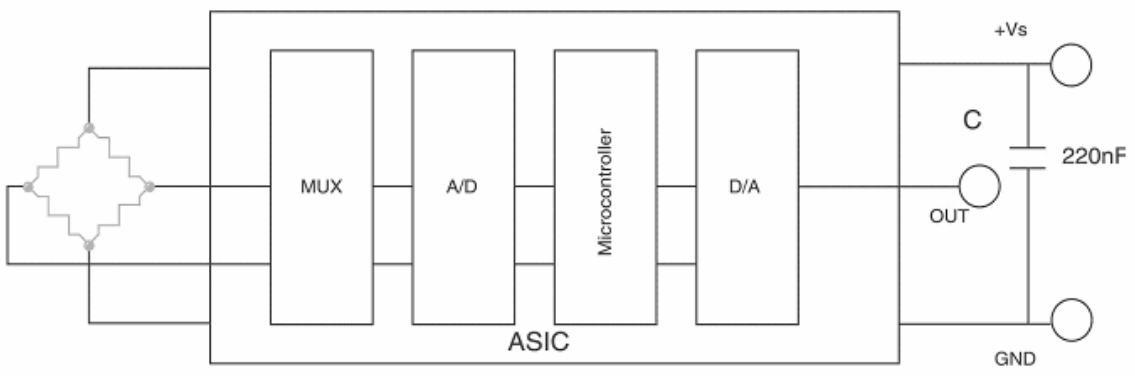
D4 Package



G2 Package



BLOCK DIAGRAM



ORDERING INFORMATION

Pressure Range	Gage	Differential	Bidirectional
0 in to ±5 in H_2O	–	–	ASDXL05D44D
0 in to 10 in H_2O	ASDXL10G24R	ASDXL10D44R	–
0 in to ±10 in H_2O	–	–	ASDXL10D44D

⚠ 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.

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008141-2-EN IL50 GLO Printed in USA
June 2006
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