

ASDX Series

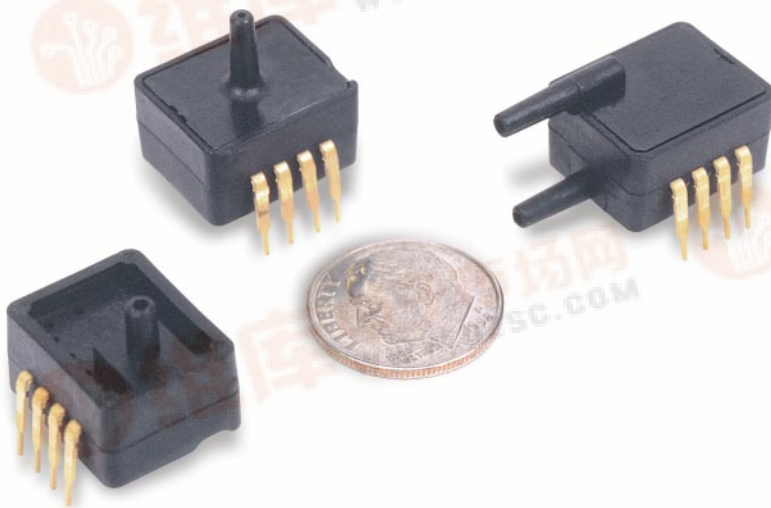
0 to 1 psi through 0 to 100 psi Pressure Transducers

APPLICATIONS

- Medical Instrumentation
- Barometry
- HVAC Controls
- Pneumatic Controls

FEATURES

- Piezoresistive Sensor
- Precision ASIC Conditioning
- High Level Output
- Temperature Compensated



This ASDX series is an amplified version of SenSym ICT's proven performer and industry leading SDX series sensor. This amplified ASDX device is in a package with the slightly larger footprint as the SDX but it offers a high level (4.0 V span) output on a very cost effective basis. This family is fully calibrated and temperature compensated using an on-board ASIC. These sensors are intended for use with non-corrosive, non-ionic working fluids; such as air and dry gases.

Devices are available to measure absolute, differential, and gage pressures from 1 psi (ASDX01DN) through 100 psi (ASDX100). The absolute devices have an internal vacuum reference and an output voltage proportional to absolute pressure. Differential devices allow application of pressure to either side of the sensing diaphragm and can be used for gage or differential measurements.

All ASDX devices are accurate to within +/- 2.0%. The devices are characterized for operation from a single 5 volt supply. The sensor is designed and manufactured according to standards laid down in ISO 9001.

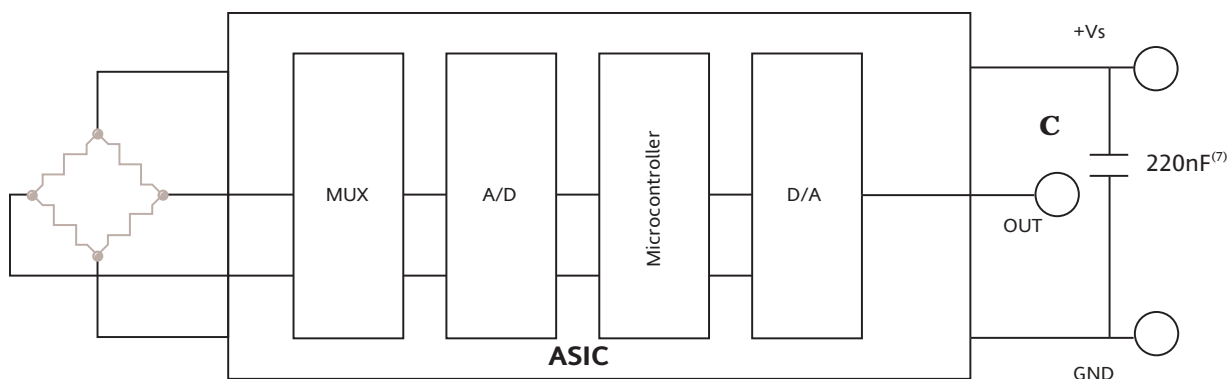
Contact your local SenSym ICT representative or the factory for additional details.



Sensor Systems

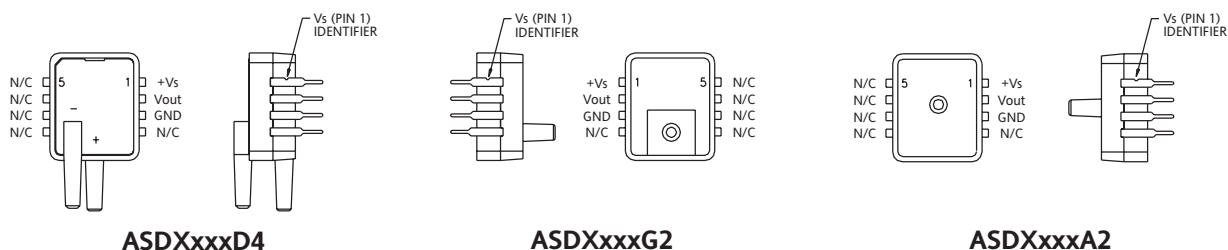
ASDX Series

BLOCK DIAGRAM



ELECTRICAL CONNECTIONS⁽⁸⁾

Pin Out



MAXIMUM RATINGS

Supply Voltage (Vs)*	4.75V to 5.25Vdc
Maximum Supply Voltage*	6.50 Vdc (max.)
Consumption Current	6 mA (typ)
Output Current - sink	2 mA (max.)
Output Current - source	2 mA (max.)
Lead Temperature (2-4 Sec.)	250°C

***Note:** 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.

ENVIRONMENTAL SPECIFICATIONS (ALL DEVICES)

Temperature Ranges:

Compensated:	0°C to + 85°C
Operating:	-20°C to +105°C
Storage:	-40°C to +125°C

Vibration:	10G at 20-2000 Hz
Shock:	50G for 11 ms
Life:	1 Million cycles minimum

SPECIFICATION
NOTES

Note 1: Reference Conditions (unless otherwise noted): Supply voltage, $V_S=5.0 \pm 0.01$ Vdc; $T_a=25^\circ\text{C}$. Output is ratiometric within the supply voltage range (V_S).

Note 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.

Note 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.

Note 4: Response time for a 0 psi to full scale pressure step change, 10% to 90% rise time.

Note 5: If maximum burst pressure is exceeded, even momentarily, the package may leak or burst, or the pressure sensing die may fracture.

Note 6: The smallest change in the output voltage, given any change in pressure.

Note 7: Capacitor 220nF required between $+V_S$ and GND pin.

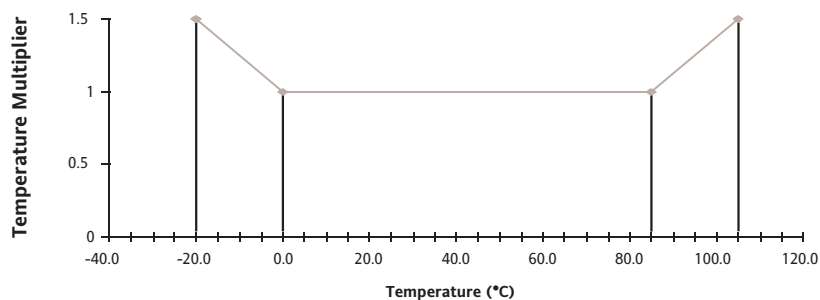
Note 8: Pins 4, 5, 6, 7 and 8 are internal device connections and should not be connected to external circuitry or ground.

PRESSURE RANGE SPECIFICATIONS

SenSym Part No.	Pressure Range	Burst Pressure ⁽⁵⁾	Sensitivity
ASDX001	0 – 1 PSI	20 PSI	4.00 V/PSI
ASDX005	0 – 5 PSI	20 PSI	0.80 V/PSI
ASDX015	0 – 15 PSI	30 PSI	0.267 V/PSI
ASDX030	0 – 30 PSI	60 PSI	0.133 V/PSI
ASDX100	0 – 100 PSI	150 PSI	0.040 V/PSI

PERFORMANCE CHARACTERISTICS⁽¹⁾

Characteristic	Symbol	Min	Typ	Max	Units
Zero Pressure Offset	Voff	0.420	0.500	0.580	V
Full Scale Span ⁽²⁾	Vfss		4.00		V
Output at FS Pressure	Vfso	4.420	4.500	4.580	V
Accuracy ⁽³⁾	–	–	–	±2.0	%Vfss
Response Time ⁽⁴⁾		–	8	–	ms
Quantization Step ⁽⁶⁾		–	3	–	mV

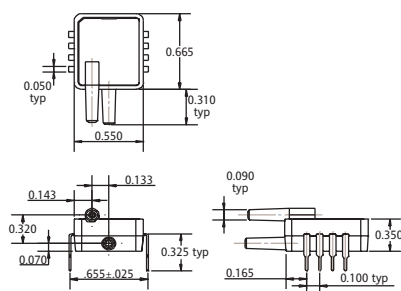
PRESSURE TRANSDUCER
PERFORMANCE CHARACTERISTICSError Band Multiplier Over -20°C to $+105^\circ\text{C}$ 

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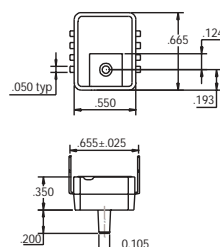
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PHYSICAL DIMENSIONS

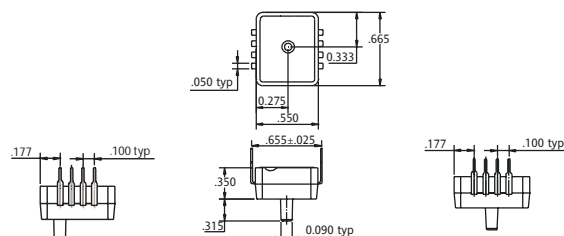
D4 Package



G2 Package

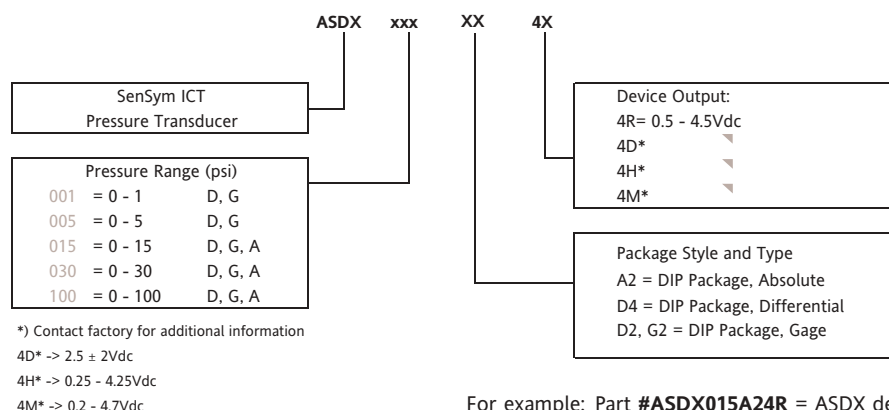


A2 Package



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ORDERING INFORMATION - PART # DESCRIPTION



For example: Part #ASDX015A24R = ASDX device, 15psi absolute, A2 Package, 0.5 – 4.5V Output

To order, use the following part number(s)

Pressure Range	Absolute	Gage	Differential/Gage
0 – 1 PSI	–	ASDX001G24R	ASDX001D44R
0 – 5 PSI	–	ASDX005G24R	ASDX005D44R
0 – 15 PSI	ASDX015A24R	ASDX015G24R	ASDX015D44R
0 – 30 PSI	ASDX030A24R	ASDX030G24R	ASDX030D44R
0 – 100 PSI	ASDX100A24R	ASDX100G24R	ASDX100D44R



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