

# ASCX SERIES COMPATIBLE PRESSURE SENSORS

COMPATIBLE TO SENSYM ASCX SERIES



## Features

- 5 Vdc Supply
- High Level Voltage Output
- Ratiometric 4.5 V Output
- Temperature Compensated
- Calibrated Zero and Span
- MULTIPLE Pressure Ranges

## Applications

- Medical Instrumentation
- Environmental Instrumentation
- HVAC Instrumentation
- Pneumatic Controls

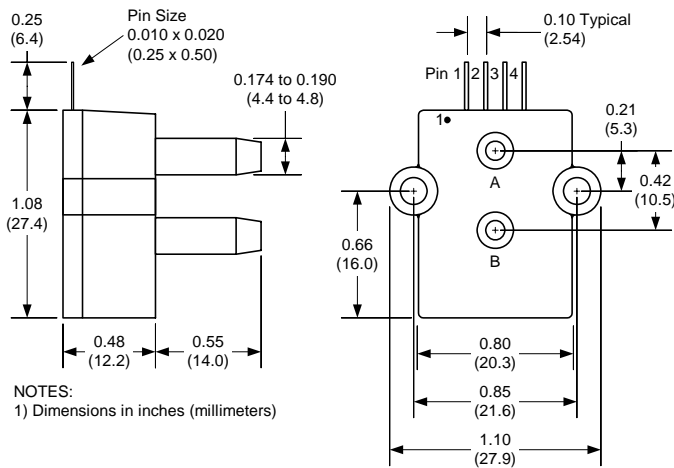
## General Description

The Amplified line of middle pressure sensors is based upon a proprietary package technology to reduce errors. This model provides a ratiometric 4.5-volt output with superior output characteristics. The sensor housing has been designed specifically to reduce package induced parasitic stress and strain. In addition the sensor utilizes a silicon, micromachined, stress concentration enhanced structure to provide a very linear output to measured pressure.

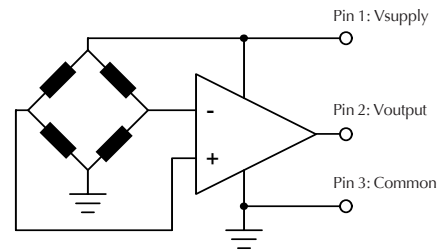
These calibrated and temperature compensated sensors give an accurate and stable output over a wide temperature range. Each sensor is internally compensated using an ASIC compensation technique. This series is intended for use with non-corrosive, non-ionic working fluids such as air, dry gases and the like.

The output of the device is ratiometric to the supply voltage over a supply voltage range of 4.5 to 5.5 volts.

## Physical Dimensions



## Equivalent Circuit



- Pin 1: Vsupply
- Pin 2: Voutput
- Pin 3: Common
- Pin 4: Do not connect

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## Maximum Ratings

Supply Voltage, $V_s$	+4.5 to +5.5 Vdc
Lead Soldering Temperature (2-4 sec.)	250 °C
Quiescent Current <sup>(6)</sup>	7.5 mA

## Environmental Specifications

Compensated Temperature	0 to 70°C
Operating Temperature	-25 to 105°C
Storage Temperature	-55 to 125°C
Humidity Limits (non condensing)	0 to 95% RH

## Pressure Ranges

Part Number	Operating Pressure	Proof Pressure	Burst Pressure
1 PSI-D-4V-ASCX	0 - 1 PSID	5 PSI	10 PSI
5 PSI-D-4V-ASCX	0 - 5 PSID	15 PSI	30 PSI
15 PSI-D-4V-ASCX	0 - 15 PSID	45 PSI	75 PSI
15 PSI-A-4V-ASCX	0 - 15 PSIA	45 PSI	75 PSI
30 PSI-D-4V-ASCX	0 - 30 PSID	100 PSI	150 PSI
30 PSI-A-4V-ASCX	0 - 30 PSIA	100 PSI	150 PSI
100 PSI-D-4V-ASCX	0 - 100 PSID	150 PSI	150 PSI
100 PSI-A-4V-ASCX	0 - 100 PSIA	150 PSI	150 PSI

## Performance Characteristics for 1/5 PSI-D-4V-ASCX

Parameter <sup>(1)</sup>	Minimum	Nominal	Maximum	Units
Output Span <sup>(5)</sup>	4.43	4.50	4.57	Volt
Span Shift (0 °C to 70 °C)	-	±0.2	±1.5	%Span
Offset Voltage @ zero pressure	0.18	0.25	0.32	Volt
Offset Shift (0 °C to 70 °C) <sup>(2)</sup>	-	±0.5	±1.5	%Span
Combined Linearity and Hysteresis Error <sup>(4)</sup>	-	±0.1	±0.5	%Span
Repeatability <sup>(7)</sup>	-	±0.2	±0.5	% Span
Response Time <sup>(8)</sup>	-	100	-	uSec

## Performance Characteristics for 15/30/100 PSI-x-4V-ASCX

Parameter <sup>(1)</sup>	Minimum	Nominal	Maximum	Units
Output Span <sup>(5)</sup>	4.45	4.50	4.55	Volt
Span Shift (0 °C to 70 °C)	-	±0.2	±1.0	%Span
Offset Voltage @ zero pressure	0.20	0.25	0.30	Volt
Offset Shift (0 °C to 70 °C) <sup>(2)</sup>	-	±0.5	±1.0	%Span
Combined Linearity and Hysteresis Error <sup>(4)</sup>	-	±0.1	±0.5	%Span
Repeatability <sup>(7)</sup>	-	±0.2	±0.5	% Span
Response Time <sup>(8)</sup>	-	100	-	uSec

### Specification Notes

- 1) ALL PARAMETERS ARE MEASURED AT 5.0 VOLT EXCITATION, FOR THE NOMINAL FULL SCALE PRESSURE AND ROOM TEMPERATURE UNLESS OTHERWISE SPECIFIED. PRESSURE MEASUREMENTS ARE WITH POSITIVE PRESSURE APPLIED TO PORT B. ABSOLUTE DEVICES ARE WITH PRESSURE APPLIED TO PORT A.
- 2) SHIFT IS RELATIVE TO 25°C.
- 4) MEASURED AT ONE-HALF FULL SCALE RATED PRESSURE USING BEST STRAIGHT LINE CURVE FIT FOR THE SPAN INDICATED.
- 5) THE VOLTAGE ADDED TO THE OFFSET VOLTAGE AT FULL SCALE PRESSURE. NOMINALLY THE OUTPUT VOLTAGE RANGE IS 0.25 TO 4.75 VOLTS FOR MINUS TO PLUS FULL SCALE PRESSURE.
- 6) PARAMETER IS COMPUTED AS MAXIMUM FOR DESIGN REFERENCE AND IS NOT TESTED.
- 7) MAXIMUM DIFFERENCE IN OUTPUT AT ANY PRESSURE WITHIN THE OPERATING PRESSURE RANGE AND COMPENSATED TEMPERATURE RANGE AFTER: A) 1000 TEMPERATURE CYCLES AND B) 1.0 MILLION PRESSURE CYCLES.
- 8) RESPONSE TIME FOR A ZERO TO FULL SCALE PRESSURE STEP CHANGE, 10% TO 90% RISE TIME.

ASCX SERIES COMPATIBLE REV A

DS-0023 Rev A