



**Acuity Incorporated**  
Fremont, California  
USA 94539

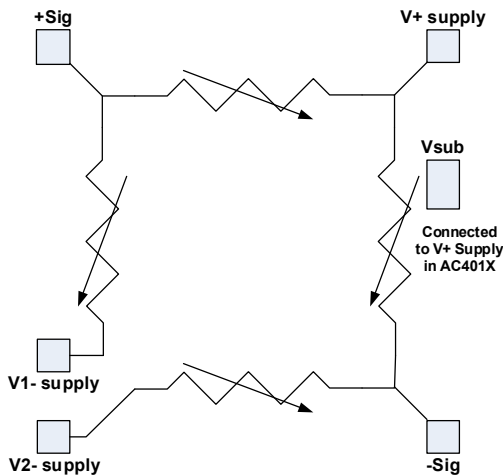
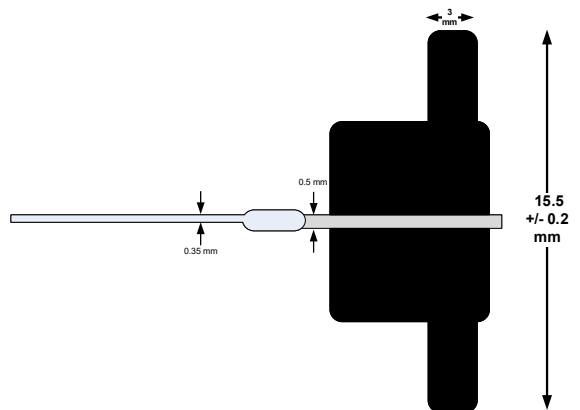
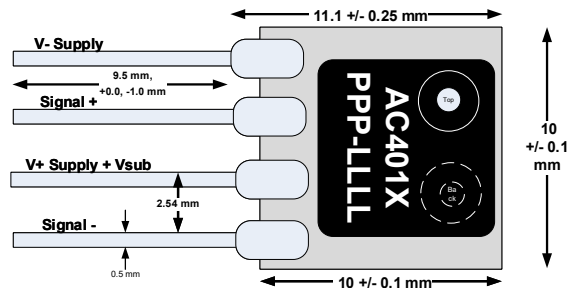
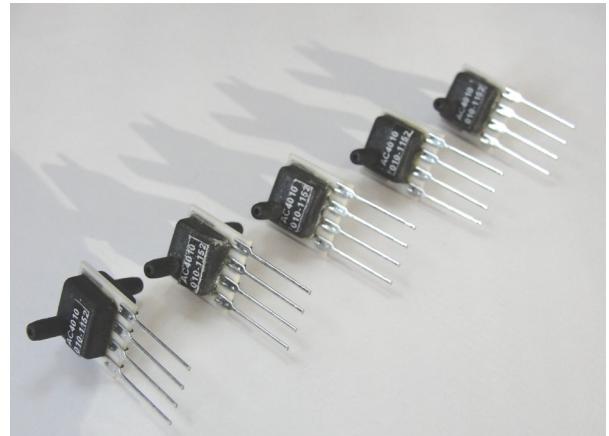
# Acuity Series AC4010 2 mbar Packaged Sensor Die

**2 mbar, 0.8 inches H<sub>2</sub>O, 200 Pa**

The AC401X series packaged pressure die is a single in-line package (SIP) with 4 pins and differential pressure ports. It is meant for applications where a simple package is needed but where additional signal processing will likely be used to connect the sensor to other electronics.

The package houses an Acuity AC3070 ultra-low pressure sensor. The pin-outs and housing are identical to the higher-pressure range versions of the AC4010. Only the die has been changed to achieve the 2-mbar range.

Suitable for a wide range of uses, it is particularly designed for low-pressure differential sensing in such applications as HVAC, air-flow, and a variety of industrial pressure and flow applications.



**Equivalent Circuit Diagram**

## Acuity AC401X Low-Pressure Packaged Pressure Die

**+ Sig** increases and **-Sig** decreases when pressure is applied to the top of the package.

Top side is label side and side with the larger solder-pads.



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Specification 2 mbar, 0.8 inches H <sub>2</sub> O, 200 Pa	Acuity Low Pressure Sensor – AC4010				Note
Electrical	Min	Nominal	Max		
<b>Resistance</b>					
Bridge resistance - 3.5k	3.25	3.70	4.25	kohms	1
TCR	2300	2800	3100	ppm/degree C	2
Resistance Ratiometricity	-1.0	0.1	1.0	%	3
<b>Offset</b>					
Offset - No Pressure	-100.0	0.0	25.0	mV	1
Offset Ratiometricity	-0.2	0	0.2	mV/V	3
TCO	-25	2	25	microV/V/degree C	2
<b>Leakage</b>					
Current Leakage - individual	0.1	1.2	20	nA	4
<b>Sensitivity</b>					
Span	<b>12</b>	<b>18</b>	<b>26</b>	<b>mV/mbar at 5 volts</b>	5
TCS	-2400	-1800	-1400	ppm/degree C	2
Pressure Nonlinearity	-0.75	0.15	0.75	%	6
Pressure Nonlinearity - F/B	-1.25	0.15	1.25	%	8
<b>Mechanical Pressure</b>					
<b>Full Scale Pressure Ranges</b>	<b>1</b>			<b>mBar</b>	9
Overpressure - Burst	>100			<b>mBar</b>	10

**Note**

- 1 Measured at 5.0 volts
- 2 Measured at +25 and +70 °C, normalized by reading at 25 °C
- 3 Measured at -2.5 and 5.0 Volts, normalized by reading at 5.0 volts
- 4 Measured from Vsub substrate contact to any Resistor Pad at 10 V
- 5 Full scale output at 5 Volt drive and rated pressure
- 6 1/2 TBNL (Terminal Base Nonlinearity at 0, 50%, and 100% FS) with topside pressure
- 8 Ratio of sensitivity with +FS and - FS pressures applied
- 9 For custom pressure ranges, consult Acuity.
- 10 For the AC401X package, the Vsub is tied to V+ Supply.

**Ordering Information:**

**AC4010-PPP**

where

PPP = 2P0 for 1 mbar

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