



Acuity Series AC4010 1 mbar Packaged Sensor Die

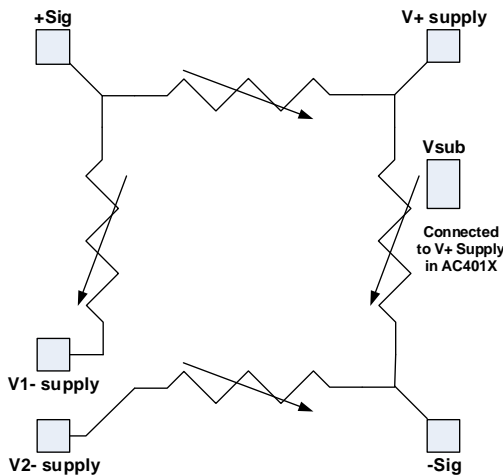
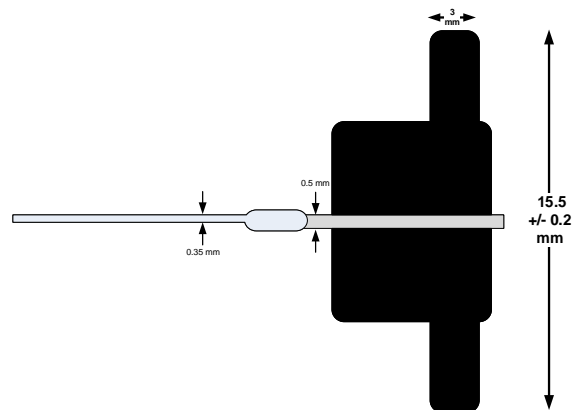
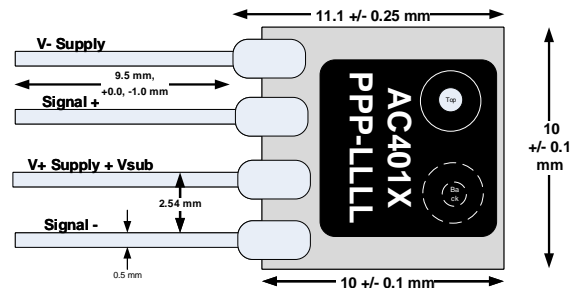
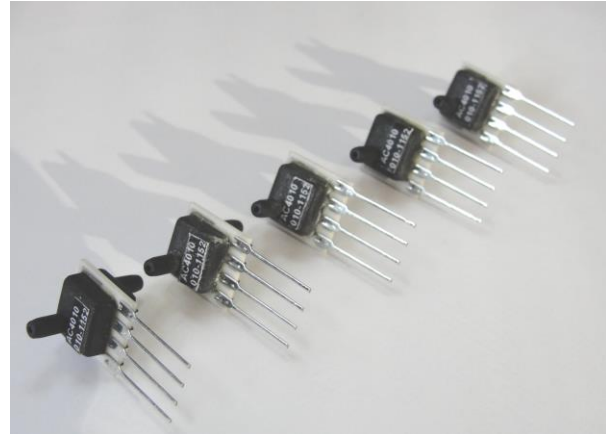
Acuity Incorporated
Fremont, California
USA 94539

1 mbar, 0.4 inches H₂O, 100 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 1 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.



Acuity Incorporated
 Fremont, California
 USA 94539

Specification 1 mbar, 0.4 inches H ₂ O, 100 Pa	Acuity Low Pressure Sensor – AC4010				Note
Electrical	Min	Nominal	Max		
Resistance					
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
Offset					
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
Leakage					
Current Leakage - individual	0.1	1.2	20	nA	4
Sensitivity					
Span	12	18	26	mV/mbar at 5 volts	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
Mechanical Pressure					
Full Scale Pressure Ranges	1			mBar	9
Overpressure - Burst	>100			mBar	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 = 1P0 for 1 mbar

Acuity reserves the right to make changes to its products and specifications at any time, without notice. All sales are made pursuant to Acuity's standard terms and conditions of sale. While the information in this publication has been checked, Acuity makes no representations or warranties other than as specifically set forth in the terms and conditions of sale. Acuity assumes no responsibility for the use of any information or products described herein, conveys no license under any patent or other right, and makes no representation that the information or products are free of patent infringement. Acuity does not recommend the use of any of its products in life support or other critical applications. Products are not authorized for use in such applications and customer assumes the full risk of any such use. Acuity and the Acuity logo are trademarks of Acuity, Inc. © Copyright Acuity, Incorporated.