



Acuity Series AC4010 1 mbar Packaged Sensor Die

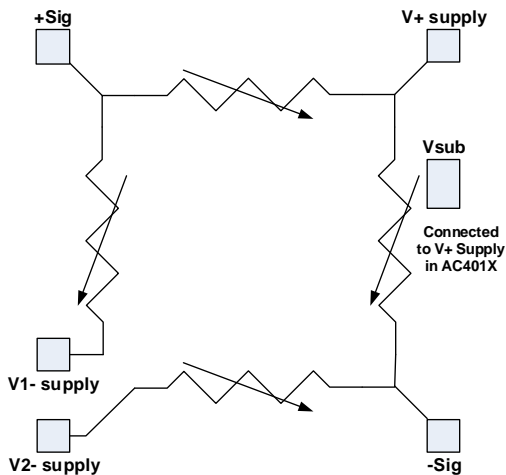
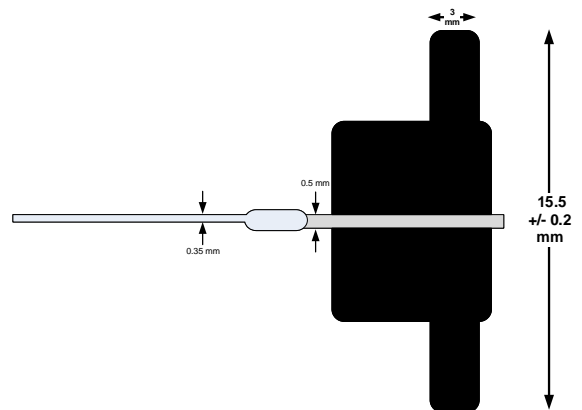
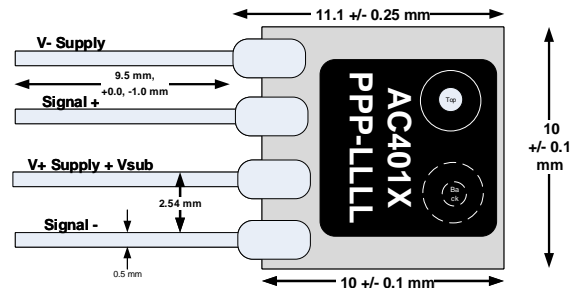
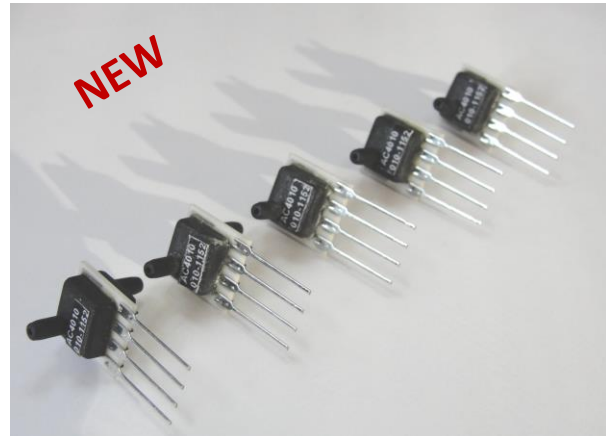
Acuity Incorporated
Fremont, California
USA 94539

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.



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NEW

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	>150			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. This prevents the use of the AC401X AC driven applications. This option can be left out on custom orders. Consult the factory.

Ordering Information:

AC4010-PPP

where

$$PPP = 1P0 \text{ for 1 mbar}$$

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