

NPC-410 Series

Medium Pressure Sensors



Applications

- Industrial automation
- Air flow monitors
- Process control
- Medical equipment
- Underground cable leak detection

Features

- Solid state reliability
- $\pm 0.1\%$ accuracy
- PCB mountable package
- DIP package
- Individual device traceability

Description

The NPC-410 Series of solid state pressure sensors are designed to provide a cost effective solution for applications that require long-term stability and high volume. Packaged in a dual-in-line configuration, the NPC-410 Series is intended for printed circuit board mounting. Optional pressure port and lead configurations give superior flexibility in low profile applications where pressure connection orientation is critical.

The NPC-410 Series is based on NovaSensor's advanced SenStable[®] piezoresistive sensing technology. The latest techniques in silicon micromachining have been used to ion implant piezoresistive strain gages into a Wheatstone bridge configuration, which is integrally formed on a micromachined diaphragm.

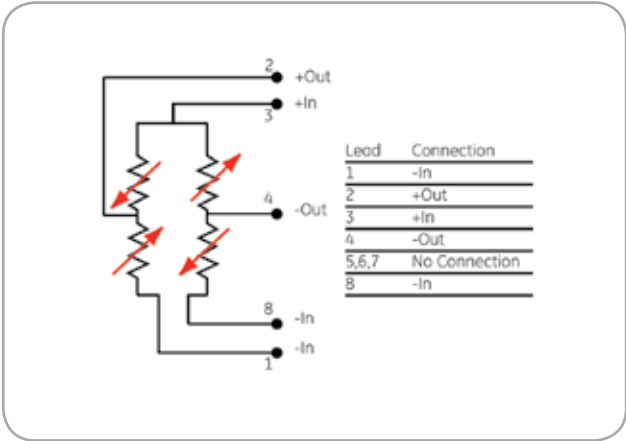
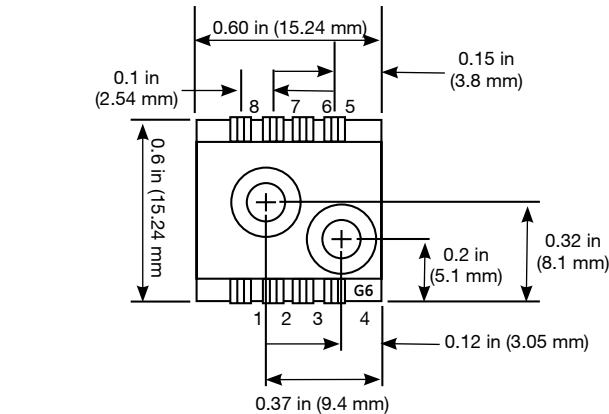
Constant current or constant voltage can be used for sensor excitation. Offset and sensitivity temperature compensation and calibration can be achieved by adding external resistors. Additionally, the NPC-410 series is available in pressure ranges from 0 psi to 5 psi (0 bar to 0.34 bar) through 0 psi to 100 psi (0 bar to 7 bar). Please contact the NovaSensor for other pressure ranges.

NPC-410 Specifications

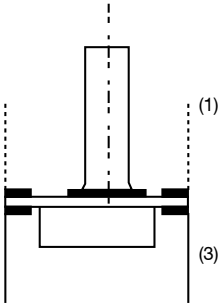
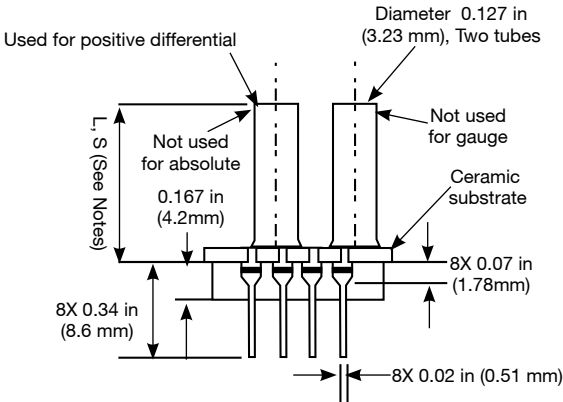
Pressure Ranges

- Gauge and Differential: 5, 15, 30, 50 and 100 psi (0.34, 1, 2, 3.4 and 7 bar)
- Absolute: 15, 30, 50 and 100 psi (1.03, 2.06, 6.89 bar)

Parameter	Value	Units	Notes
Environmental			
Temperature Range			
Operating ⁽⁹⁾	-40 to 257	°F	(-40°C to 125°C)
Storage	-67°F to 302	°F	(-55°C to 150°C)
Mechanical			
Weight	0.005	lb	(2.5 g)
Media Compatibility			
Positive differential and gage ports	Compatible with exposed materials		6
Absolute and negative differential ports	Dry gases only		



NPC-410 Series schematic diagram



1. Tube length; L = 0.490, S=0.325, N = No tube.
2. Lead pins can be either be in the same or the opposite direction of the pressure tube. Option (1) has the leads in the "Up" position, the same direction as the tube. Option (3) has the leads in the "Down" position, the opposite direction of the tube.

NPC-410 Series package diagram

NPC-410 Specifications

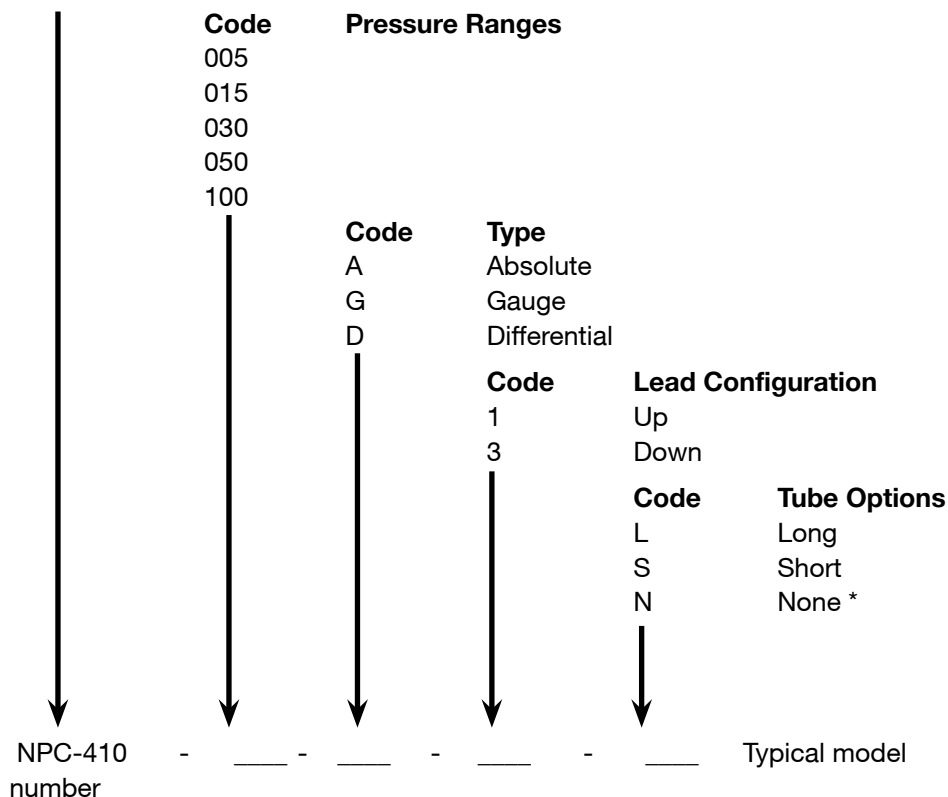
Parameter	Units	Minimum	Type	Maximum	Notes
Performance Parameters(1)					
Full Scale Output (FSO)	mV	105	125	155	
Zero Pressure Output	mV	-50	0	50	2
Linearity	%FSO	—	—	0.1	3, 7
Pressure Hysteresis	%FSO	—	—	0.1	
Input and Output Impedance	Ω	2500	4000	6000	
Thermal Accuracy—Span	%FSO	—	1.5	—	2,4
Thermal Accuracy—Zero	%FSO	—	0.5	—	2,4
Coefficient-Resistance Temperature	%/°C	—	0.3	—	4
Thermal Hysteresis—Zero	%FSO	—	0.1	—	4
Pressure Overload	Rated	—	—	3X	5

1. Ambient temperature = 77°F (25°C), unless otherwise noted Supply current = 1.5 mA.
2. External resistors can be added to reduce temperature errors and calibrate the offset and FSO.
3. Best fit straight line.
4. Temperature range 32°F to 140°F (0°C to 60°C), reference to 77°F (25°C).
5. 3X or 200 psi (13.78 bar) maximum, whichever is less.
6. Exposed materials are pyrex, ceramic, silicon, epoxy, RTV and stainless steel.
7. 5 psi (0.34 bar) specifications: Linearity: 0.25 ±%FSO.

Ordering Information

The code number to be ordered may be specified as follows:

NPC-410



* Order NPC-410-XXXG-XN in place of NPC-410-XXXD-XN

