

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.

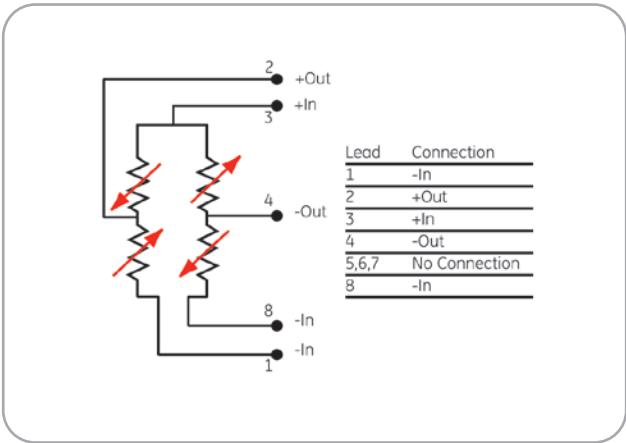
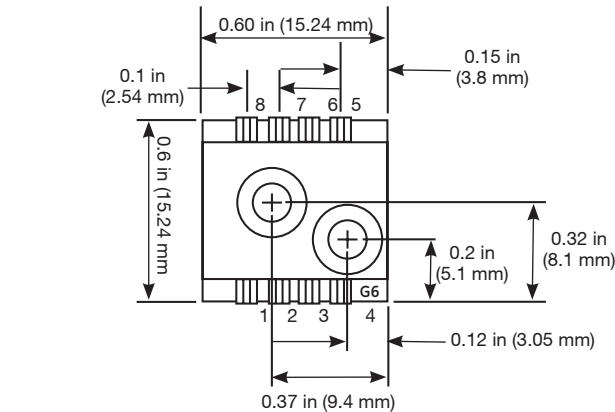
Constant current or constant voltage can be used for sensor excitation. Offset and sensitivity temperature compensation and calibration can be achieved by adding external resistors. Additionally, the NPC-410 series is available in pressure ranges from 0 psi to 5 psi (0 bar to 0.34 bar) through 0 psi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

NPC-410 Specifications

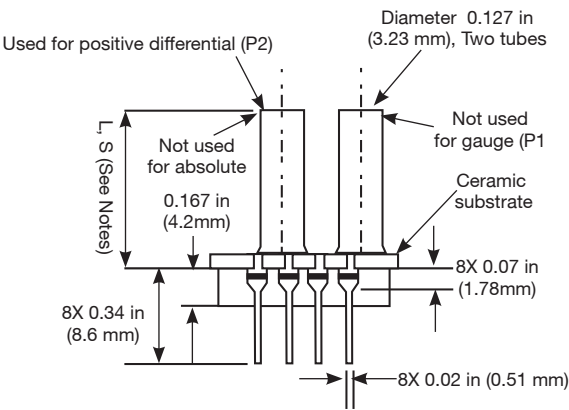
Pressure Ranges

- 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



NPC-410 Series package 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.
3. Gauge and differential pressure devices are tested by applying pressure to the positive differential port (P2) and venting to atmosphere the reference port (P1). Absolute pressure devices use only P1 to apply vacuum or pressure.

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. Gauge and differential pressure devices are tested by applying pressure to the positive differential port (P2) and venting to atmosphere the reference port (P1).
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

Code	Pressure Ranges	Code	Type	Code	Lead Configuration	Code	Tube Options
005	5 psi (34.5 kPa)	A	Absolute	1	Up	L	Long
015	15 psi (100 kPa)	G	Gauge	3	Down	S	Short
030	30 psi (200 kPa)	D	Differential			N	None *
050	50 psi (345 kPa)						
100	100 psi (700 kPa)						

NPC-410 - ____ - ____ - ____ - ____ Typical model number

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

Warranty

Amphenol Advanced Sensors warrants its products against defects in material and workmanship for 12 months from the date of shipment. Products not subjected to misuse will be repaired or replaced. Amphenol Advanced Sensors reserves the right to make changes without further notice to any products herein. NovaSensor makes no warranty, representation or guarantee regarding the suitability of its products for any particular application, nor does Amphenol Advanced Sensors assume any liability arising out of the application or use of any product or circuit and specifically disclaims all liability without limitation consequential or incidental damages. The foregoing warranties are exclusive and in lieu of all other warranties, whether written, oral, implied or statutory. No implied statutory warranty of merchantability or fitness for particular purpose shall apply.

Mouser Electronics

Authorized Distributor

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