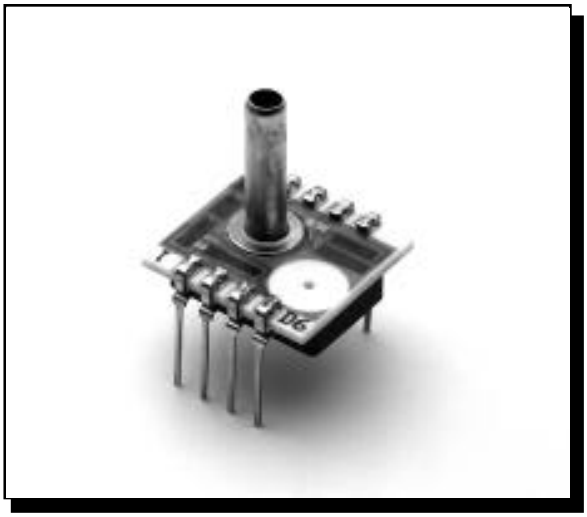
NPC-1210 Series

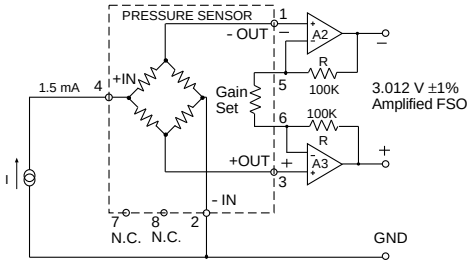
Solid State
Pressure Sensor
Low-Medium Pressure

The NPC-1210 series of solid state pressure sensors are designed to provide a cost effective solution for applications that require calibrated performance over a wide temperature range. Packaged in a dual-in-line configuration, the NPC-1210 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-1210 series is based on Lucas NovaSensor®'s advanced SenStable® piezoresistive sensing technology. Silicon micromachining techniques are used to ion implant piezoresistive strain gages into a Wheatstone bridge configuration. The NPC-1210 offers the added advantage of superior temperature performance over the temperature compensated range of 0°C to +60°C. A gain set resistor is included to normalize the FSO for field interchangeability. Additionally, the NPC-1210 series is available in pressure ranges from 0 to 5 through 0 to 100 psi. Please contact the factory for other pressure ranges.



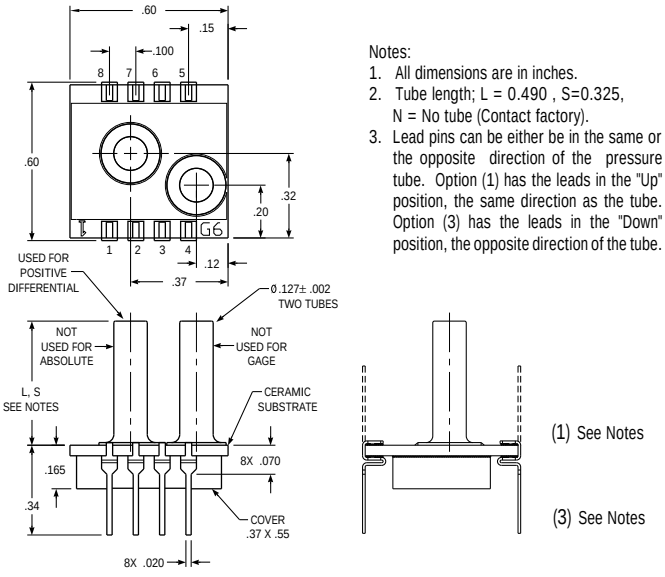
Schematic Diagram



Lead	Connection
1	- OUT
2	- IN
3	+OUT
4	+IN
5, 6	Gain Set Resistor
7, 8	No Connection

$$A_V = 1 + \frac{2 \times R}{\text{Gain Set}}$$

Package Diagram



Notes:
1. All dimensions are in inches.
2. Tube length; L = 0.490 , S=0.325, N = No tube (Contact factory).
3. 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.

APPLICATIONS
- Industrial automation
- Air flow monitors
- Process control
- Liquid level
- Medical equipment
- Water measurement
- Underground cable leak detection

FEATURES
- 100 mV Full-scale Output
- ±0.1% accuracy
- Interchangeable
- Temperature Compensated 0°C to 60°C
- PCB mountable package
- Media compatible
- DIP package
- Solid state reliability
- Individual device traceability

PRESSURE RANGES
- Gauge and Differential
  5, 15, 30, 50 and 100 psi
- Absolute
  15, 30, 50 and 100 psi

Lucas VARITY

PARAMETER	VALUE	UNITS	NOTES
ENVIRONMENTAL			
Temperature			
Operating	–40 to +125	°C	–40 to +257°F
Compensated	0 to +60	°C	+32 to +140°F
Storage	–55 to +150	°C	-67 to +302°F
MECHANICAL			
Weight	2.5	grams	
Media Compatibility:	Positive differential and gage ports Absolute, negative differential ports	Compatible with wetted materials Dry gases only	7

PERFORMANCE (Note 1)

Parameter	Units	Min.	Typ.	Max.	Notes
Full Scale Output (FSO)	mV	75	100	150	2, 3
Zero Pressure Output	±mV	—	—	2	3
Linearity	±%FSO	—	—	0.1	4, 8
Pressure Hysteresis	±%FSO	—	—	0.1	
Input Impedance	Ω	2500	4000	6000	
Output Impedance	Ω	4000	5000	6000	
Thermal Accuracy–Span	±%FSO	—	—	0.5	3, 5, 8
Thermal Accuracy–Zero	±%FSO	—	—	0.5	3, 5, 8
Temperature Coefficient–Resistance	%/°C	—	0.22	—	5
Thermal Hysteresis–Zero	±%FSO	—	0.1	—	5
Input Excitation	mA	—	1.5	2.0	
Pressure Overload	Rated	—	—	3X	6

Notes:
1. Supply current = 1.5mA and ambient temperature = 25°C,unless otherwise noted.
2. Output span of unamplified sensor.
3. Compensation resistors are an integral part of the sensor package; no additional external resistors are required. Pins 7 and 8 must be kept open. The NPC-1210 is interchangeable only when used with the gain set resistor shown in the Schematic Diagram.
4. Best fit straight line
5. Temperature range 0-60°C, reference to 25°C.
6. 3X or 200 psi maximum, whichever is less.
7. Wetted materials are pyrex, ceramic, silicon, epoxy, RTV and nickel.
8. Call factory for 5 PSI spec.

ORDERING INFORMATION

N P C – 1210 – XXX X -Y Z

- NovaSensor
- Pressure
- Ceramic
- Model 1210
- Pressure Range (psi)
  005, 015, 030, 050, 100
- Type:
  D = Differential
  A = Absolute
  G = Gage
- Lead Configuration:
  1 - Up, 3 - Down
- Tube Option:
  L = Long, S = Short,
  N = None

Sales Terms: Lucas NovaSensor standard sales terms apply. Prices and specifications are subject to change without notice.

Warranty: Lucas NovaSensor warrants its products against defects in material and workmanship for 12 months from date of shipment. Products not subjected to misuse will be repaired or replaced. THE FOREGOING IS IN LIEU OF ANY OTHER EXPRESSED OR IMPLIED WARRANTIES. Lucas NovaSensor reserves the right to make changes to any product herein and assumes no liability arising out of the application or use of any product or circuit described or referenced herein.

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