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Features

- 100 mV full scale (FS) Output
- ±0.1% accuracy
- Interchangeable
- Temperature compensated 32°F to 140°F (0°C to 60°C)
- PCB mountable package
- DIP package
- Solid-state reliability
- Individual device traceability
- ±0.5% static accuracy

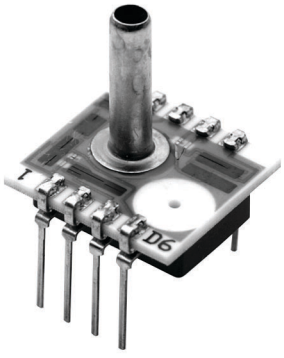
Applications

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

NPC-1210 Series

NovaSensor Medium/Low Pressure Sensors

NPC-1210 Series is a NovaSensor product. NovaSensor has joined other GE high–technology sensing businesses under a new name—GE Industrial, Sensing.



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NCP-1210 Series Specifications

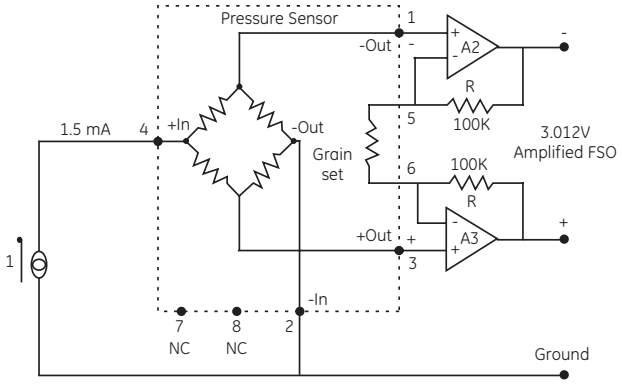
Description

The NPC-1210 medium pressure 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 medium pressure series is based on 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 Series offers the added advantage of superior temperature performance over the temperature compensated range of 32°F to 140°F (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 psi (0 to 0.34 bar) through 0 to 100 psi (0 to 6.89 bar). Please contact NovaSensor for other pressure ranges.

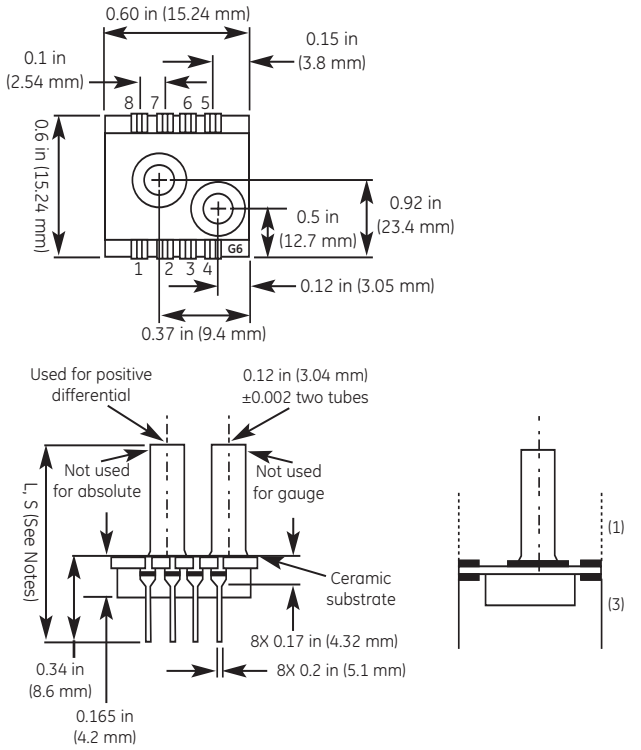
The NPC-1210 low pressure series of solid-state pressure sensors are designed to provide the same cost effective solution as NovaSensor®'s other NPC-1210 Series pressure ranges. Packaged in a dual-in-line configuration, this NPC-1210 series is intended for printed circuit board mounting.

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 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 Series offers the added advantage of superior temperature performance over the temperature compensated range of 32°F to 140°F (0°C to 60°C). A gain set resistor is included to provide field interchangeability. The low pressure NPC-1210 series is available in pressure ranges from 0 in to 10 in of water (0 to 1 psi; 0 to 0.06 bar).



Lead	Connection
1	-Out
2	-In
3	+Out
4	+In
5,8	Gain-Set Resistor
7,8	No Connection

NPC-1210 Series schematic diagram



1. *Tube length; L = 0.490, S=0.325, N = No tube.*
2. *Lead pins can be either 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 from the tube.*

NPC-1210 Series package diagram

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NCP-1210 Series Specifications

Medium Pressure Sensors

Pressure Ranges

- Gauge and differential: 5, 15, 30, 50 and 100 psi (0.34, 1.03, 2.06, 3.44, and 6.89 bar)
- Absolute: 15, 30, 50 and 100 psi (1.03, 2.06, 6.89 bar); 5 psi (0.34 bar): call GE

Parameter	Value	Units	Notes
Environmental			
Temperature Range			
Operating	–40° to 257°	°F	(-40°C to 125°C)
Compensated	32° to 140°	°F	(0°C to 60°C)
Storage	–67°F to 302°	°F	(–55°C to 150 °C)
Mechanical			
Weight	0.005	lb	(2.5 g)
Media Compatibility	Compatible with exposed materials		7
Positive differential and gauge ports	Dry gases only		
Absolute. negative differential ports	Dry gases only		

Parameter	Units	Minimum	Typical	Maximum	Notes
Performance Parameters *					
FS 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	—	0.2	—	5
Thermal Hysteresis–Zero	±%FSO	—	0.1	—	5
Input Excitation	mA	—	1.5	2.0	
Pressure Overload	Rated	—	—	3X	6

** 1. Supply current = 1.5 mA and ambient temperature = 77°F (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. Maximum gain-set resistor mismatch is 2%.
4. Best fit straight line.
5. Temperature range 32°F to 140°F (0°C to 60°C), reference to 77°F (25°C).
6. 3X or 200 psi (13.78 bar) maximum, whichever is less.
7. Exposed materials are pyrex, ceramic, silicon, epoxy, RTV, and stainless steel..
8. 5 psi (0.34 bar) spec.: Linearity: 0.25 ±%FSO, TC-span: 0.75 ±%FSO, TC-zero: 0.75 ±%FSO.

Low Pressure Sensors

Pressure Ranges

- Gauge and differential: 10 in (254 mm) H_20, 1 psi (0.06 bar)

Parameter	Value	Units	Notes
Environmental			
Temperature Range			
Operating	–40° to 257°	°F	(-40°C to 125°C)
Compensated	32° to 140°	°F	(0°C to 60°C)
Storage	–67° to 302°	°F	(-55°C to 150°C)
Mechanical			
Weight	0.005	lb	(2.5 g)
Media Compatibility			
Positive differential and gauge ports	Compatible with exposed materials		6
Absolute. negative differential ports	Dry gases only		

Parameter	Units	Minimum	Typical	Maximum	Notes
Performance Parameters *					
FSO 10 in (250 mm)	mV	25	50	70	2, 3
FSO 1 psi (0.06 bar)	mV	50	75	110	2, 3
Zero Pressure Output	mV	-2	—	2	3
Linearity	±%FSO	-0.5	—	0.5	4
Pressure Hysteresis	±%FSO	-0.1	—	0.1	
Input Impedance	Ω	2500	4000	6000	
Output Impedance	Ω	4000	5000	6000	
Thermal Accuracy–Span	±%FSO	-1.0	—	1.0	3, 5
Thermal Accuracy–Zero	±%FSO	-1.25	—	1.25	3, 5
Temperature Coefficient–Resistance	%/°C	—	0.22	—	5
Thermal Hysteresis–Zero	±%FSO	—	0.1	—	5
Pressure Overload	psi (bar)	5 (0.34)	—	—	

**1. Supply current = 1.5 mA and ambient temperature = 77°F (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. Maximum gain-set resistor mismatch is 2%.
4. Best fit straight line.
5. Temperature range 32°F to 140°F (0°C to 60°C), reference to 77°F (25°C).
6. Exposed materials are ceramic, silicon, epoxy, RTV and stainless steel.

Warranty

GE 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. GE Sensing reserves the right to make changes without further notice to any products herein. GE makes no warranty, representation or guarantee regarding the suitability of its products for any particular application, nor does GE assume any liability arising out of the application or use of any product or circuit and specifically disclaims and 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.

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NCP-1210 Series Specifications

Ordering Information

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

NPC-1210 (Medium Pressure)

Code	Pressure Range
005	005 psi (0.3 bar)
015	015 psi (1 bar)
030	030 psi (3.4 bar)
050	050 psi (3.4 bar)
100	100 psi (7 bar)

Code	Type
D	Differential
A	Absolute
G	Gauge

Code	Lead Configurations
1	Up
3	Down

Code	Tube Options
L	Long
S	Short
N	None

NPC-1210 - ___ - ___ - ___ - ___ **Typical model number**

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

NPC-1210 (Low Pressure)

Code	Pressure Range
10W	10 inH_2O (25 mbar)
001	1 psi (69 mbar)

Code	Type
D	Differential
G	Gauge

Code	Lead Configurations
1	Up
3	Down

Code	Tube Options
L	Long
S	Short

NPC-1210 - ___ - ___ - ___ - ___ **Typical model number**

920-303A

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