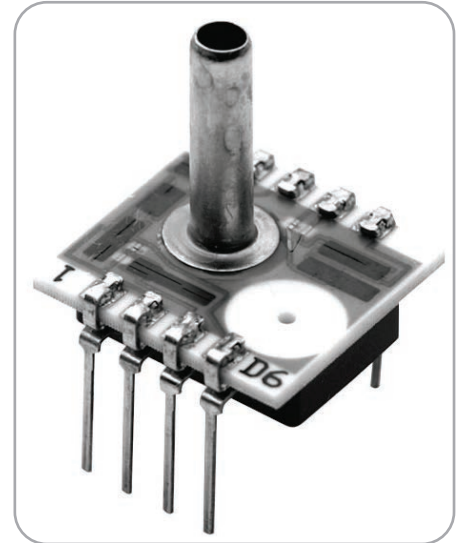


NPC-1210 Series

Medium/Low Pressure Sensors



Features

- High sensitivity
- High accuracy
- Interchangeable
- Temperature Compensated: 0°C to 60°C (32°F to 140°F)
- PCB-mountable package
- Dual In-line Package (DIP)
- Solid-state reliability
- Individual device traceability

Applications

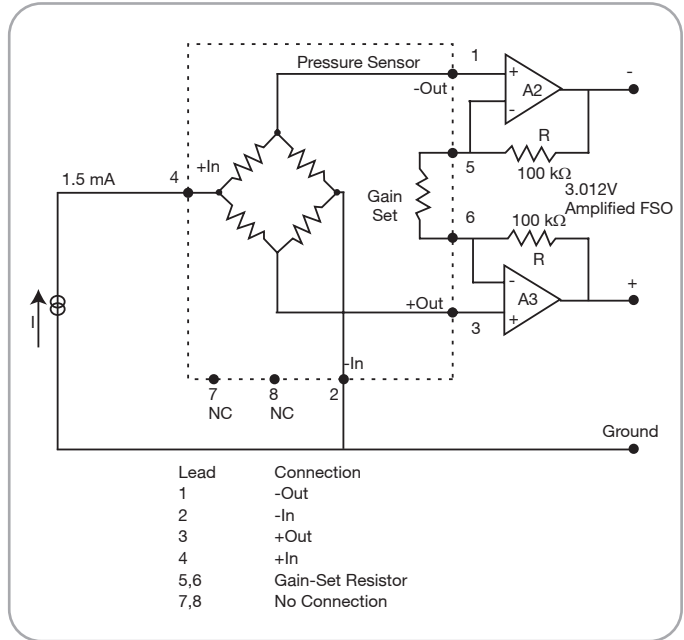
- Industrial Automation
- Air Flow Monitors
- Process Control
- Medical Equipment
- Underground Cable Leak Detection
- Ventilation
- Respirator Monitoring

NPC-1210 Series Specifications

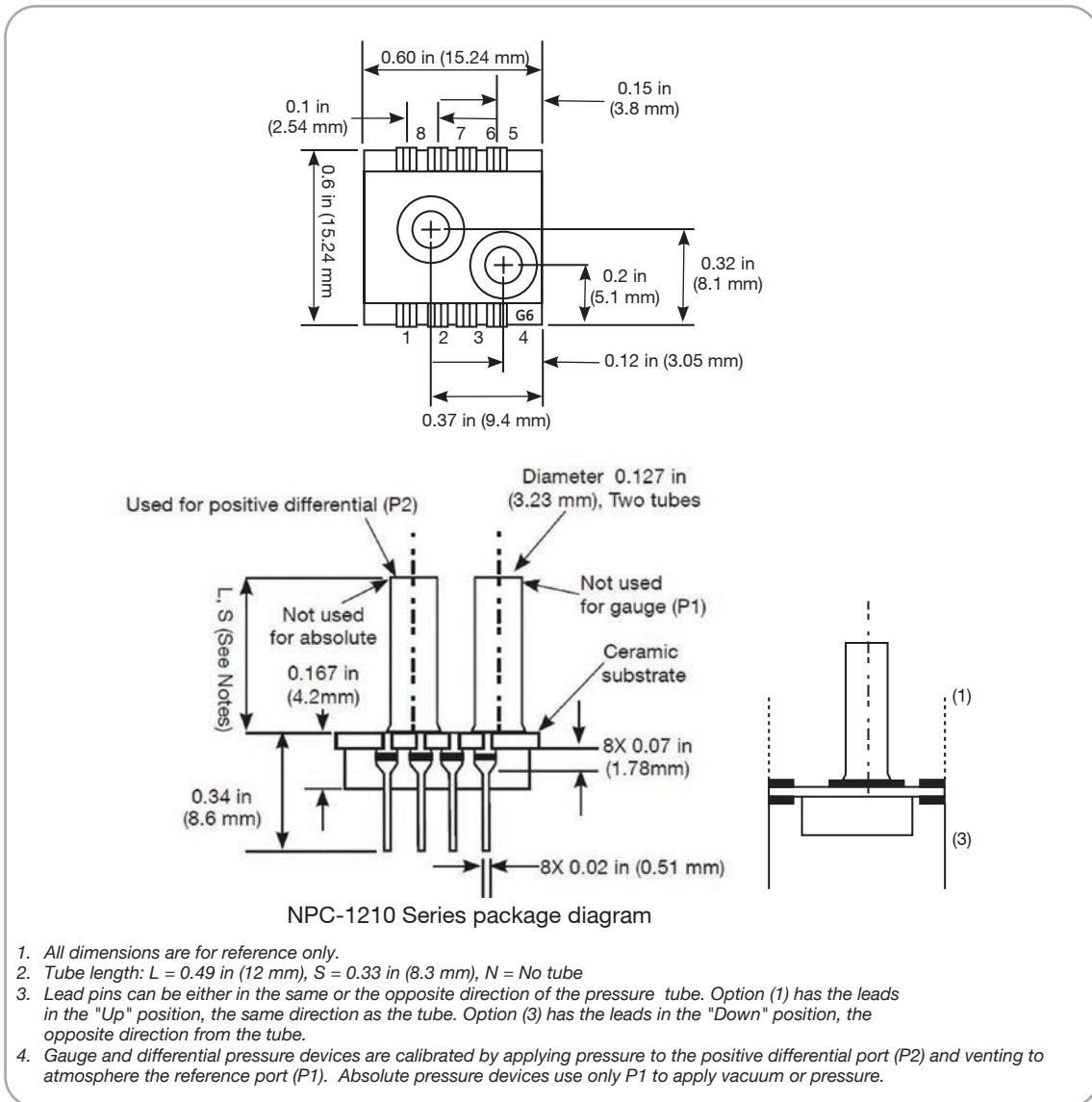
Description

The NPC-1210 series of solid-state pressure sensors is designed to provide a cost-effective solution for applications that require calibrated performance over a wide temperature range. Packaged in a dual-inline configuration, the NPC-1210 Series is intended for printed circuit board mounting. Optional pressure port and lead configurations provide 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 0°C to 60°C (32°F to 140°F). A gain set resistor is included to normalize the FSO for field interchangeability.



NPC-1210 Series Schematic Diagram



NPC-1210 Series Specifications

Medium Pressure Sensors

Pressure Ranges

- Gauge and Differential:
 - 5 psi (34 kPa, 0.34 bar)
 - 15 psi (100 kPa, 1.0 bar)
 - 30 psi (210 kPa, 2.1 bar)
 - 50 psi (340 kPa, 3.4 bar)
 - 100 psi (690 kPa, 6.9 bar)
- Absolute:
 - 15 psi (100 kPa, 1.0 bar)
 - 30 psi (210 kPa, 2.1 bar)
 - 50 psi (340 kPa, 3.4 bar)
 - 100 psi (690 kPa, 6.9 bar)
- For other pressure ranges, please contact NovaSensor.

Parameter	Value	Units	Notes
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Environmental			
Temperature Range			
Operating	-40 to 125	°C	(-40° to 257°F)
Compensated	0 to 60	°C	(32°F to 140°F)
Storage	-55 to 150	°C	(-67 to 302 °F)

Mechanical

Weight	2.5	g	(0.005 lb)
Media Compatibility	Compatible with exposed materials		7
Positive differential and gauge ports	Dry gases only		
Absolute and negative differential ports	Dry gases only		

Parameter	Units	Minimum	Typical	Maximum	Notes
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Performance Parameters *					
FS Output (FSO)	mV	75	100	150	2, 3
Zero Pressure Output	mV	-2	—	2	3
Linearity	%FSO	-0.1	—	0.1	4, 8
Pressure Hysteresis	%FSO	-0.1	—	0.1	
Input Impedance	Ω	2500	4000	6000	
Output Impedance	Ω	4000	5000	6000	
Thermal Accuracy–Span	%FSO	-0.5	—	0.5	3, 5, 8
Thermal Accuracy–Zero	%FSO	-0.5	—	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, 9

Low Pressure Sensors

Pressure Ranges

- Gauge and Differential:
 - 10 in H₂O (2.5 kPa, 0.025 bar)
 - 1 psi (6.9 kPa, 0.069 bar)

Parameter	Value	Units	Notes
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Environmental			
Temperature Range			
Operating	-40 to 125	°C	(-40° to 257°F)
Compensated	0 to 60	°C	(32°F to 140°F)
Storage	-55 to 150	°C	(-67 to 302 °F)

Mechanical

Weight	2.5	g	(0.005 lb)
Media Compatibility	Compatible with exposed materials		7
Positive differential and gauge ports	Dry gases only		
Absolute and negative differential ports	Dry gases only		

Parameter	Units	Minimum	Typical	Maximum	Notes
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Performance Parameters *					
FSO 10 inH ₂ O	mV	25	50	70	2, 3
FSO 1 psi	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
Input Excitation	mA	—	1.5	2.0	
Pressure Overload	psi (bar)	5 (0.34)	—	—	—

- *Supply current = 1.5 mA and ambient temperature = 77°F (25°C), unless otherwise noted. Gauge and differential pressure devices are calibrated by applying pressure to the positive differential port (P2) and venting to atmosphere the reference port (P1).
- Output span of unamplified sensor.
- 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%.
- Best fit straight line.
- Temperature range 32°F to 140°F (0°C to 60°C), reference to 77°F (25°C).
- 3X or 200 psi (13.78 bar) maximum, whichever is less.
- Exposed materials are pyrex, ceramic, silicon, epoxy, RTV, and stainless steel.
- 5 psi (0.34 bar) spec.: Linearity: 0.25 ±%FSO, TC-span: 0.75 ±%FSO, TC-zero: 0.75 ±%FSO, otherwise noted.
- Port 1 is limited to 60 PSIG for differential and absolute pressure sensors. Contact factory for 50 PSIA/D and 100 PSIA/D units.

