

NPI-19 Series

NovaSensor Low Pressure Sensors



Features

- Solid state, high reliability
- 316L stainless steel, ISO sensor design
- $\pm 0.5\%$ static accuracy
- Temperature compensated 32°F to 158°F (0°C to 70°C)
- 125 mV typical FSO on current version
- 75 ± 1 mV FSO on voltage version
- Thermal errors less than 2% FSO
- Two standard ranges:
0 to 2.5 psig (0 to 172 mBar)
0 to 5 psig (0 to 345 mBar)
- Standard configurations include:
0.74 in (19 mm) diameter x 0.28 in (7.1 mm) long cylinder with o-ring seals
- Custom configurations and other pressure ranges available. Please consult the factory.

Applications

- Process control systems
- Hydraulic systems and valves
- Biomedical instruments
- Refrigeration and HVAC controls
- Appliances and consumer electronics
- Ship and marine systems
- Aircraft and avionic systems

NPI media isolated sensors are designed to operate in hostile environments and yet give the outstanding sensitivity, linearity, and hysteresis of a silicon sensor. The piezoresistive sensor chip is housed in a fluid-filled cylindrical cavity and isolated from measured media by a stainless steel diaphragm and body. The NPI Series employs SenStable® processing technology, providing excellent output stability. It is available in either a constant current or constant voltage version.

The modular design allows for a variety of pressure port modules, which are hermetically welded to the sensor header module. There are other standard port styles available. Please consult NovaSensor for more details.

NPI-19 Series Specifications

Operating				
Constant Current (1.5 mA)			Constant Voltage (10 V)	
General	Value	Notes	Value	Notes
Pressure Ranges				
2.5 PSI	0 to 2.5 psi (0 to 172 mbar)	17.2 kPa	0 to 2.5 psi (0 to 172 mbar)	17.2 kPa
5 PSI	0 to 5 psi (0 to 345 mbar)	34.5 KPa	0 to 5 psi (0 to 345 mbar)	34.5 KPa
Maximum Overpressure	3x pressure	rated	3x pressure	rated
Electrical @ 77°F (25°C) unless otherwise stated				
Input Excitation	1.5 mA maximum	2 mA maximum	10 VDC	12 VDC
Insulation Resistance	$10^8 \Omega$	@ 50 VDC	$10^8 \Omega$	@ 50 VDC
Input Impedance	4000 Ω	typical	10,000 Ω	typical
Output Impedance	5000 Ω	$\pm 20\%$	5000 Ω	$\pm 20\%$
Bridge Impedance	5000 Ω	$\pm 20\%$	5000 Ω	$\pm 20\%$
Environmental				
Compensated Temperature	32°F to 158°F	(0°C to 70°C)	32°F to 158°F	(0°C to 70°C)
Operating Temperature	14°F to 176°F	(-10°C to 80°C)	14°F to 176°F	(-10°C to 80°C)
Storage Temperature	-40°F to 257°F	(-40°C to 125°C)	-40°F to 257°F	(-40°C to 125°C)
Mechanical				
Weight	0.02 lb (10 g)	NPT-19A-XXX	0.02 lb (10 g)	NPT-19A-XXX
Media Compatibility	All corrosive media compatible with 316 L stainless steel		All corrosive media compatible with 316 L stainless steel	
Case and Diaphragm Material	316L stainless steel			316L stainless steel
Recommended O-Ring	NPI-19A; 0.66 in x 0.039 in (16.76 mm x 1 mm)		NPI-19A; 0.66 in x 0.039 in (16.76 mm x 1 mm)	

Compensated Performance (1.5 mA)					(10 VDC)				
Parameter Notes	Units	Minimum	Type	Maximum	Units	Minimum	Type	Maximum	
Offset	mV	-2	± 1	2	mV	-2	± 1	2	
Full Scale Output									
2.5 PSI	mV	50	125	200	mV	72	75	78	
5 PSI	mV	50	125	200	mV	74	75	76	
Static Accuracy	%FSO	-0.5	0.1	0.5	%FSO	-0.5	0.1	0.5	2
Thermal Accuracy of Offset									
2.5 PSI	%FSO	-2	± 0.5	2	%FSO	-2	± 0.5	2	3
5 PSI	%FSO	-1.5	± 0.5	1.5	%FSO	-1.5	± 0.5	1.5	3
Thermal Accuracy of FSO									
2.5 PSI	%FSO	-2	± 0.5	2	%FSO	-2	± 0.5	2	3
5 PSI	%FSO	-1.0	± 0.5	1.0	%FSO	-1.0	± 0.5	1.0	3
Thermal Repeatability									
2.5 PSI	%FSO	-0.3	0.1	0.3	%FSO	-0.2	0.1	0.2	3
5 PSI	%FSO	-0.2	0.1	0.2	%FSO	-0.2	0.1	0.2	3

1. Performance with offset, thermal accuracy of offset, and thermal accuracy of FSO compensation resistors. All values measured at 77°F (25°C) and at 1.5 mA constant current or 10 VDC, unless otherwise noted.

2. Includes Linearity (BFSL), pressure hysteresis and repeatability errors.

3. 32°F to 158°F (0°C to 70°C) with reference to 77°F (25°C).

4. Consult factory for vacuum applications.

NPI-19 Series Specifications

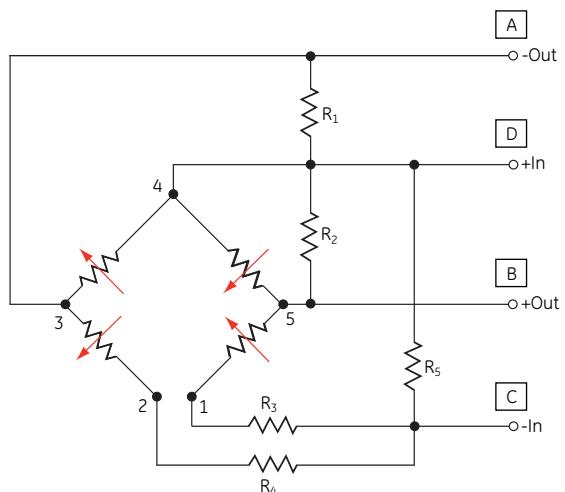
Ordering Information

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

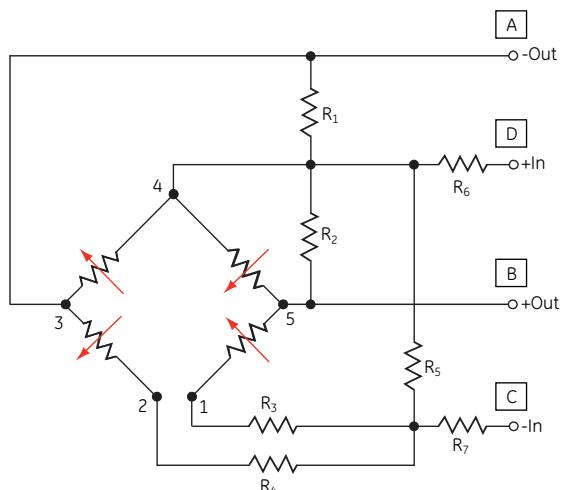
NPI-19 NovaSensor Pressure Type (ISO Sensor)

Code	Pressure Port Type
A	No port, o-ring seal
Code	Pressure Range
021	2.5 psi (172 mbar), 1.5 mA
002	2.5 psi (172 mbar), 10 V
031	5 psi (345 mbar), 1.5 mA
005	5 psi (345 mbar), 10 V
Code	Description
G	Gauge
H	Tolerance
V	Constant Current Supply (1.5 mA) Constant Voltage Supply (10 VDC)

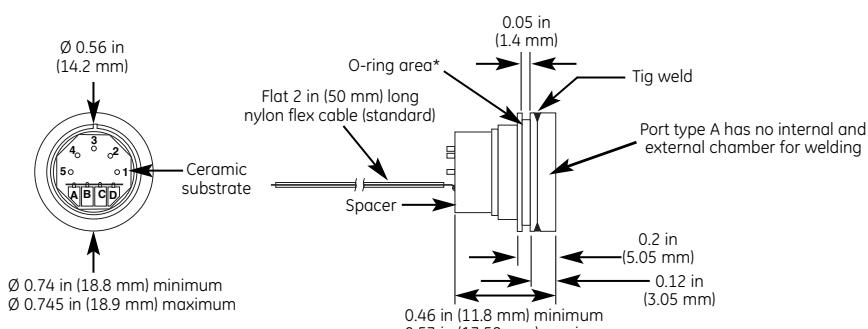
NPI-19 - _____ - _____ - _____ - Typical model number



Pin number 4 connected to chip substrate.
Constant current schematic diagram



Constant voltage schematic diagram



*Uses o-ring 0.66 in ID x 0.039 in (16.76 mm x 1 mm) cross section.

Amphenol

Advanced Sensors

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[NPI-19A-200GAV](#) [NPI-19A-021GH \(1.5 mA\)](#) [NPI-19A-031GH \(1.5 mA\)](#) [NPI-19-200GV](#) [NPI-19-300GV](#) [NPI-19-050GV](#)



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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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