



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.

Amphenol
Advanced Sensors

NPI-19 Series Specifications

Operating				
Constant Current (1.5 mA)			Constant Voltage (10 V)	
	Value	Notes	Value	Notes
General				
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 Ω	@ 50 VDC	10 ⁸ Ω	@ 50 VDC
Input Impedance	4000 Ω	typical	10,000 Ω	typical
Output Impedance	5000 Ω	±20%	5000 Ω	±20%
Bridge Impedance	5000 Ω	±20%	5000 Ω	±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
Thermal Accuracy of Offset										
2.5 PSI			%FSO	-2	±0.5	2	%FSO	-2	±0.5	2
5 PSI			%FSO	-1.5	±0.5	1.5	%FSO	-1.5	±0.5	1.5
Thermal Accuracy of FSO										
2.5 PSI			%FSO	-2	±0.5	2	%FSO	-2	±0.5	2
5 PSI			%FSO	-1.0	±0.5	1.0	%FSO	-1.0	±0.5	1.0
Thermal Repeatability										
2.5 PSI			%FSO	-0.3	0.1	0.3	%FSO	-0.2	0.1	0.2
5 PSI			%FSO	-0.2	0.1	0.2	%FSO	-0.2	0.1	0.2

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

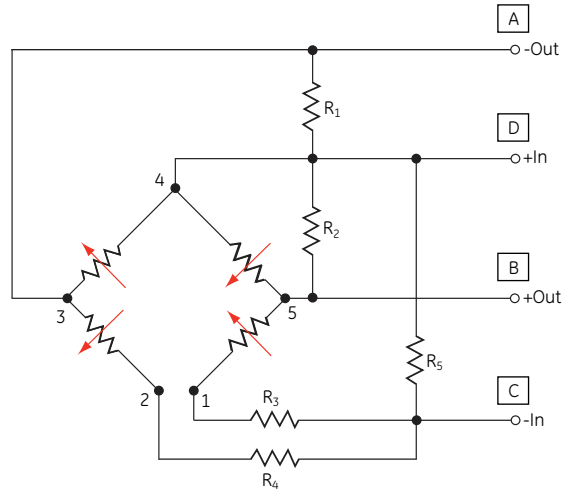
Ordering Information

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

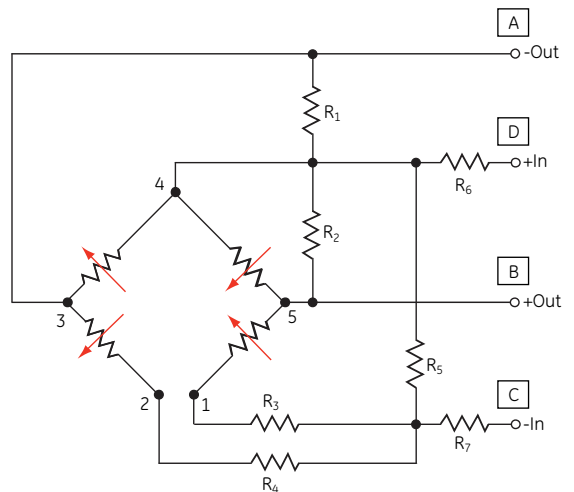
NPI-19 NovaSensor Pressure Type (ISO Sensor)

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

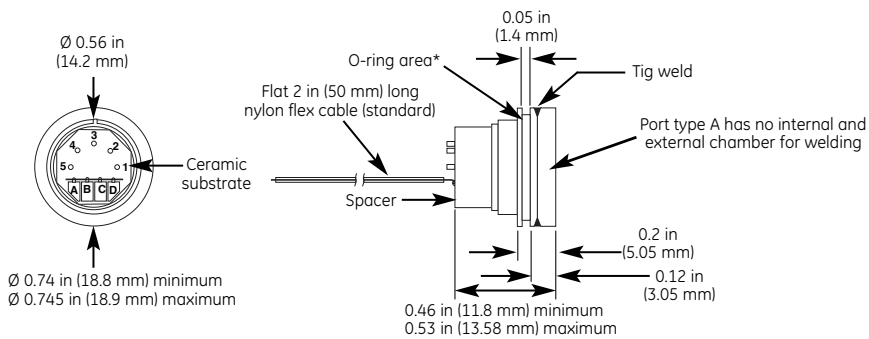
NPI-19 - ____ - ____ - ____ - ____ Typical model number



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

www.amphenol-sensors.com

© 2014 Amphenol Corporation. All Rights Reserved. Specifications are subject to change without notice.
Other company names and product names used in this document are the registered trademarks or
trademarks of their respective owners.

AAS-920-298B-06/2014