

NPI-12 Series

Stainless Steel Media Isolated Sensors



Applications

- Low-cost media isolation
- 0.20 mV/V/psi sensitivity
- Operating temperature 50°F to 104°F (10°C to 40°C)
- 5 VDC excitation
- Four-pin connector
- Solid state reliability

Features

- Level sensing
- Automotive systems
- Process control
- Pneumatic controls
- Hydraulic systems

NPI-12 Series Specifications

Description

The NPI-12 Series of solid state, media isolated pressure sensors are designed to provide a cost effective solution for applications that detect tube blockages and pump performance. The NPI-12 Series is intended to mount adjacent to flexible tubing to sense tube expansion. Cleanliness is assured with the NPI-12 Series stainless steel finish.

The NPI-12 Series incorporates state-of-the-art IsoSensor technology, which gives the OEM user the best in price and performance. They are designed to operate in hostile environments while providing outstanding sensitivity, linearity and hysteresis. The piezoresistive sensor chip is housed in a fluid filled cavity and isolated from the measured media by a stainless steel diaphragm and body. As with all NovaSensor silicon sensors, the NPI-12 Series employs SenStable® processing technology, which provides excellent output stability.

The NPI-12 Series offers many features with superior performance. The pressure sensitivity is calibrated at 0.20 ± 0.01 mV/V/psi. The combined errors of linearity, pressure hysteresis, repeatability and temperature are less than ± 4 %FSO. The maximum overpressure is 50 psi (3.44 bar). A five volt excitation is needed to supply power to the device. The operating temperature range for the NPI-12 Series is 50°F to 104°F (10°C to 40°C), while the storage temperature is -40°F to 158°F (-40°C to 70°C). Electrical connection is accomplished with a 4 pin connector that accepts standard 0.025 in (0.64 mm) square posts on 0.100 in (2.54 mm) centers. A red wire allows for easy recognition of connector orientation.

Parameter	Value	Units	Notes
General			
Pressure Range	15	psig	
Maximum Overpressure	50	psig	

Environmental

Temperature Range			
Operating	50 to 104	°F	(10°C to 40°C)
Storage	-40 to 158 (Dry)	°F	(-40°C to 70°C)

Mechanical

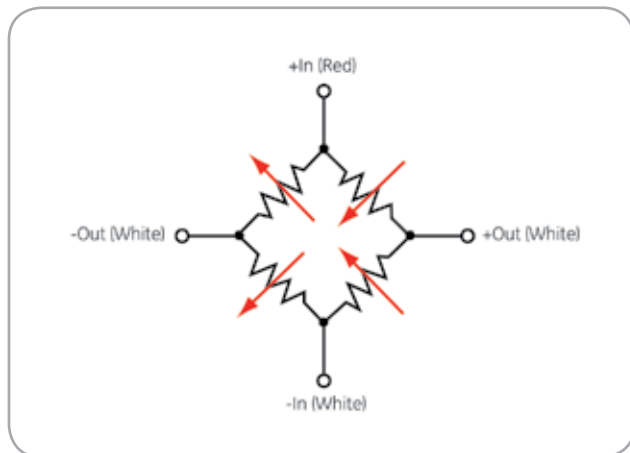
Weight	0.01	lb	(5 g)
Media Compatibility	316L stainless steel		
Diaphragm Dome Height	0.000 to 0.008 in (0.000 mm to 0.20 mm)		1

Electrical(2)

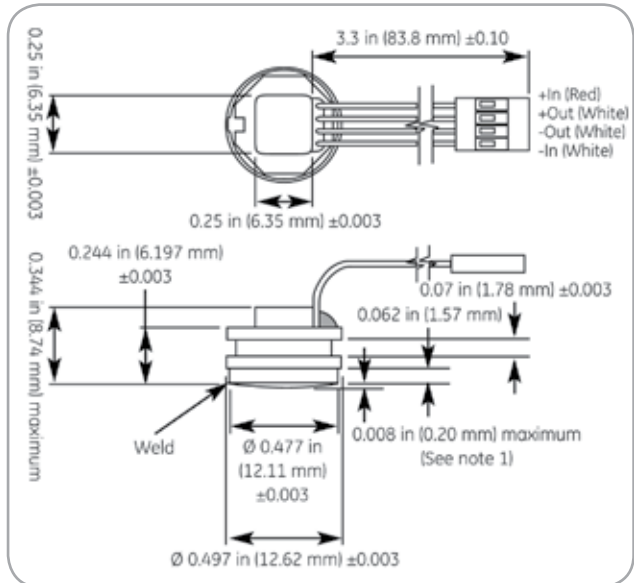
Excitation	5.0	volts	
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Parameter	Units	Min.	Typical	Max.	Notes
Performance Parameters (2)					
Zero Pressure Output	±%FSO	—	—	5	
Sensitivity	mV/V/psi	0.19	0.20	0.21	
Linearity, Hysteresis,					
Temperature Errors	±%FSO	—	—	4.0	3
Response Time (10% to 90%)	ms	—	1.0	—	4

1. Maximum change in diaphragm height relative to the edge of the sensor.
2. Supply current = 5 VDC and ambient temperature = 77°F (25°C), unless otherwise noted.
3. Best fit straight line.
4. For a zero-to-full scale pressure step change.



NPI-12 Series schematic diagram



NPI-12 Series dimensions

NPI-12 Series Specifications

Warranty

NovaSensor 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. NovaSensor reserves the right to make changes without further notice to any products herein. NovaSensor makes no warranty, representation or guarantee regarding the suitability of its products for any particular application, nor does NovaSensor 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.

Ordering Information

Part Number	Description
NPI-12-101GH	15 psi (1.03 bar)

