

# GE Sensing

## Features

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

## Applications

- Low-cost media isolation
- 0.20 mV/V/psi sensitivity
- $\pm 0.1\%$  accuracy
- Operating temperature 50°F to 104°F (10°C to 40°C)
- 5 VDC excitation
- Four-pin connector
- Solid state reliability

# NPI-12 Series NovaSensor Stainless Steel Media Isolated Sensors

NPI-12 Series is a NovaSensor product. NovaSensor has joined other GE high-technology sensing businesses under a new name—GE Industrial, Sensing.



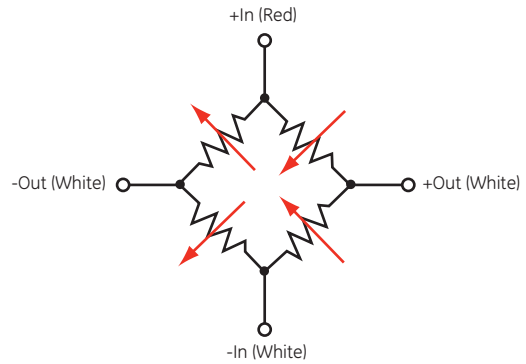
# NPI-12 Series Specifications

## Description

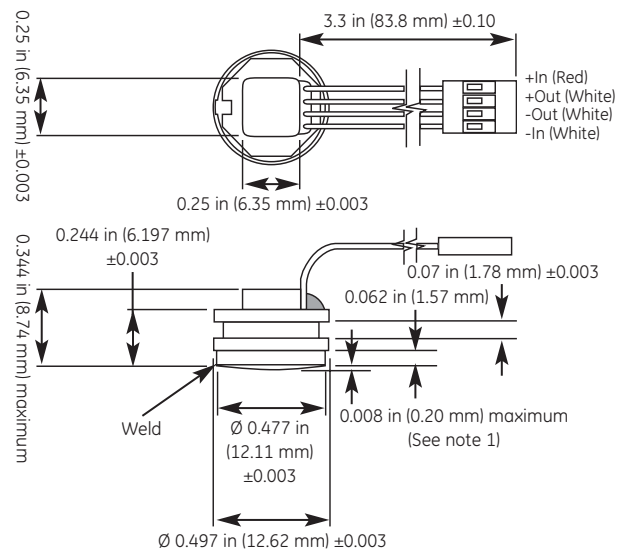
The NPI-12 Series of solid state, media isolated pressure sensors are designed to provide a cost effective solution for applications that detect tube blockages and pump performance. The NPI-12 Series is intended to mount adjacent to flexible tubing to sense tube expansion. Cleanliness is assured with 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<sup>®</sup> processing technology, which provides excellent output stability.

The NPI-12 Series offers many features with superior performance. The pressure sensitivity is calibrated at  $0.20 \pm 0.01$  mV/V/psi. The combined errors of linearity, pressure hysteresis, repeatability and temperature are less than  $\pm 4$  %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.



NPI-12 Series schematic diagram



NPI-12 Series dimensions

| Parameter  | Value                 | Units | Notes           |      |   |
|--|-----------------------|-------|-----------------|------|---|
| <b>General</b>                                       |                       |       |                 |      |   |
| Pressure Range                                       | 15                    | psig  |                 |      |   |
| Maximum Overpressure                                 | 50                    | psig  | rated pressure  |      |   |
| <b>Environmental</b>                                 |                       |       |                 |      |   |
| Temperature Range                                    |                       |       |                 |      |   |
| Operating  | 50 to 104             | °F    | (10°C to 40°C)  |      |   |
| Storage  | -40 to 158 (Dry)      | °F    | (-40°C to 70°C) |      |   |
| <b>Mechanical</b>                                    |                       |       |                 |      |   |
| Weight   | 0.01                  | lb    | (5 g)           |      |   |
| Media Compatibility                                  | 316L stainless steel  |       |                 |      |   |
| Diaphragm Dome Height                                | 0.000 to 0.008        | in    | 1               |      |   |
|  | (0.000 mm to 0.20 mm) |       |                 |      |   |
| <b>Electrical<sup>[2]</sup></b>                      |                       |       |                 |      |   |
| Excitation   | 5.0                   | volts |                 |      |   |
| <b>Parameter Units Minimum Typical Maximum Notes</b> |                       |       |                 |      |   |
| Performance Parameters [2]                           |                       |       |                 |      |   |
| Zero Pressure Output                                 | $\pm$ %FSO            | —     | —               | 5    |   |
| Sensitivity  | mV/V/psi              | 0.19  | 0.20            | 0.21 |   |
| Linearity, Hysteresis,                               | $\pm$ %FSO            | —     | —               | 4.0  | 3 |
| Temperature Errors                                   |                       |       |                 |      |   |
| 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.

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# NPI-12 Specifications

## Ordering Information

**Part Number**  
NPI-12-101GH

**Description**  
15 psi (1.03 bar)

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