

## Nova PI Series

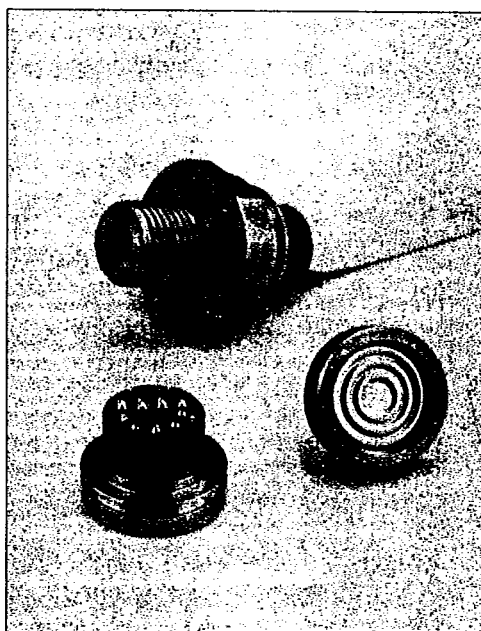
ALL MEDIA  
SOLID STATE SENSOR  
PRESSURE TRANSDUCER

Low Pressure

T-65-13

## FEATURES

- ☐ Solid state, high reliability
- ☐ All media compatible IsoSensor® design
- ☐ High sensitivity, 100mv FSO with 1.0ma excitation
- ☐ 300 series stainless steel, all wetted surfaces
- ☐ Nonlinearity 0.25%FSO max
- ☐ Thermal errors 1.0%FSO max 0 to 70°C
- ☐ Four standard ranges: 0-15 psi to 0-250 psi, gage or absolute. 0-150 and 0-300 psi available
- ☐ Smallest sizes available, standard configurations include: 1/2"-20UNF threaded male port with 1.0" flange  
0.74" diameter x 0.28" wide cylinder with O-Ring seal
- ☐ Modular design: other ports or new OEM package configurations can be accommodated



Actual Size

## APPLICATIONS

- Process Control Systems
- Hydraulic Systems and Valves
- Automobiles and Trucks
- Biomedical Instruments
- Refrigeration and HVAC Controls
- Appliances and Consumer Electronics
- Ship and Marine Systems
- Aircraft and Avionic Systems

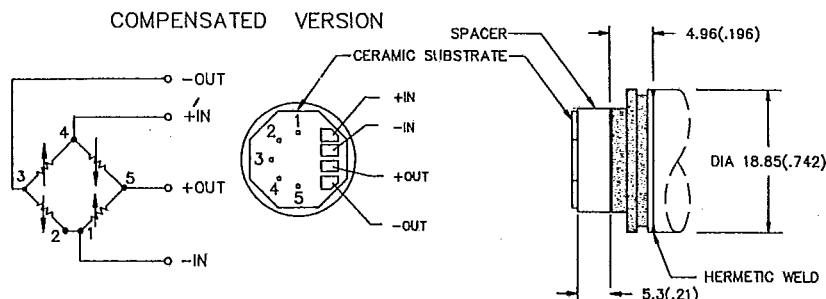
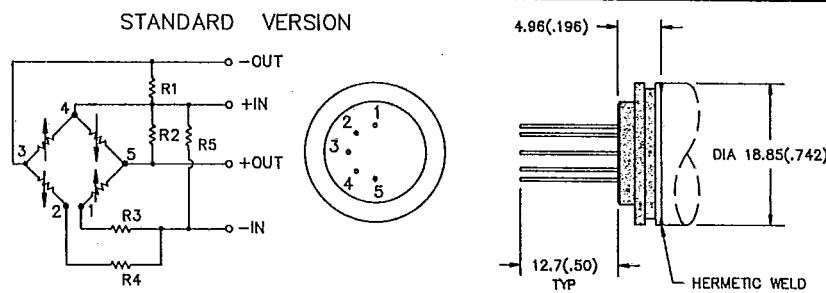
## DESCRIPTION

The Nova PI series incorporates new IsoSensor technology, which gives the OEM user the best in price and performance. They can work in hostile environments yet give the outstanding performance in sensitivity, linearity and stability 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 modular design allows for a variety of pressure port modules which are hermetically welded to the sensor header module. Standard types A and B are shown below.

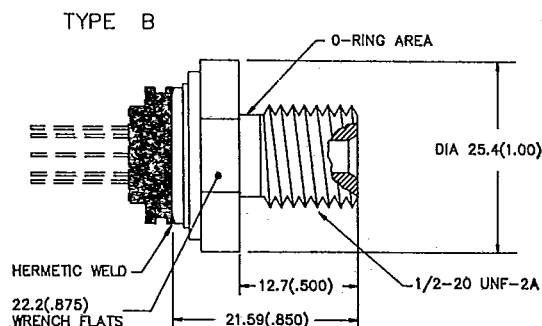
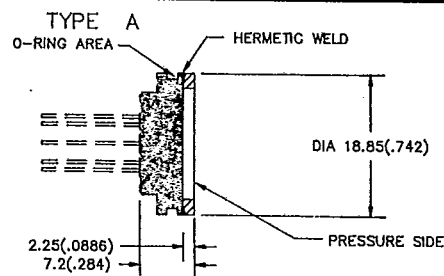
For compensation of temperature effects, the sensors are available in two versions: standard, with compensation resistor values supplied, or compensated, in which the complete resistor network is supplied on a hybrid ceramic substrate. The IsoSensor design has minimized temperature effects to provide 1.0% maximum error over the 0° to 70°C compensated range.

## SENSOR HEADER MODULE



ALL DIMENSIONS ARE IN MM(INCHES)  
A FLAT FLEX CABLE IS OPTIONAL WITH COMPENSATED UNIT

## PRESSURE PORT TYPES



## Low Pressure

## NOVA PI SERIES

## SPECIFICATIONS

T-65-13

## GENERAL

| Parameter       | Abbr. | Value                 | Units | FSO    | Notes     |
|-----------------|-------|-----------------------|-------|--------|-----------|
| Pressure Range* | P     | 0- 100                | kPa   | 100 mV | 0- 15 psi |
|                 | P     | 0- 200                | kPa   | 100 mV | 0- 30 psi |
|                 | P     | 0- 700 <sup>(1)</sup> | kPa   | 100 mV | 0-100 psi |
|                 | P     | 0-1700 <sup>(2)</sup> | kPa   | 100 mV | 0-250 psi |

Note: 1. 150mV FSO when used 0-1000 kPa range

Note: 2. 120mV FSO when used 0-2000 kPa range

Maximum Pressure P<sub>max</sub> 2 times rated pressure

Media Compatibility: all corrosive media compatible with 316 stainless steel

## ELECTRICAL (@ 25°C (77° F) unless otherwise stated)

|                       |                  |       |    |               |
|-----------------------|------------------|-------|----|---------------|
| Input Excitation      | I                | 1.0   | mA | 1.5mA max.    |
| Insulation Resistance | R <sub>iso</sub> | 100   | MΩ | @ 50 Vdc      |
| Bridge Resistance     | R <sub>b</sub>   | 5,000 | Ω  | ± 10% typical |

## ENVIRONMENTAL

| Parameter         | Abbr.          | Value       | Units | Notes          |
|-------------------|----------------|-------------|-------|----------------|
| Temperature Range |                |             |       |                |
| Operating         | T <sub>o</sub> | -40 to +125 | °C    | -40° to +257°F |
| Compensated       | T <sub>c</sub> | 0 to +70    | °C    | +32° to +158°F |

|           |                       |                  |                 |
|-----------|-----------------------|------------------|-----------------|
| Vibration | 10                    | G <sub>rms</sub> | 20 to 2000 Hz   |
| Shock     | 100                   | G                | 11 milliseconds |
| Life      | 100 x 10 <sup>6</sup> | min cycles       |                 |

## MECHANICAL

|                             |   |                 |                              |          |
|-----------------------------|---|-----------------|------------------------------|----------|
| Weight                      | W | <10 max         | gr                           | <0.4 oz. |
| Case and Diaphragm Material |   | 300 series      | stainless steel              |          |
| Recommended O-Ring:         |   | .66 dia. x .039 | for Type A                   |          |
|                             |   | 2-013           | for Type B per I.S.O. 3601/1 |          |

\* Other pressure ranges available upon request; please consult factory.

## PERFORMANCE \*\*

| Parameter                           | Value    | Units | Notes                               |
|-------------------------------------|----------|-------|-------------------------------------|
| Offset                              | ± 2      | mV    |                                     |
| Thermal Accuracy Offset             | ± 1.0    | %FSO  | 0 to +70°C (with reference to 25°C) |
| Thermal Accuracy - Fullscale Output | ± 1.0    | %FSO  | 0 to +70°C (with reference to 25°C) |
| Full Scale Output                   | 100 ± 30 | mV    | @ 1.0 mA excitation                 |
| Nonlinearity                        | ± 0.25   | %FSO  | best fit straight line              |
| Hysteresis                          | ± 0.05   | %FSO  |                                     |
| Repeatability                       | ± 0.05   | %FSO  |                                     |
| Thermal Hysteresis                  | ± 0.2    | %FSO  | 0 to +70°C (typical)                |
| Long Term Stability - Sensitivity   | ± 0.2    | %FSO  | 1 year (typical)                    |
| Long Term Stability - Offset        | ± 0.2    | %FSO  | 1 year (typical)                    |

Notes: Performance specifications stated with temperature compensation resistors.

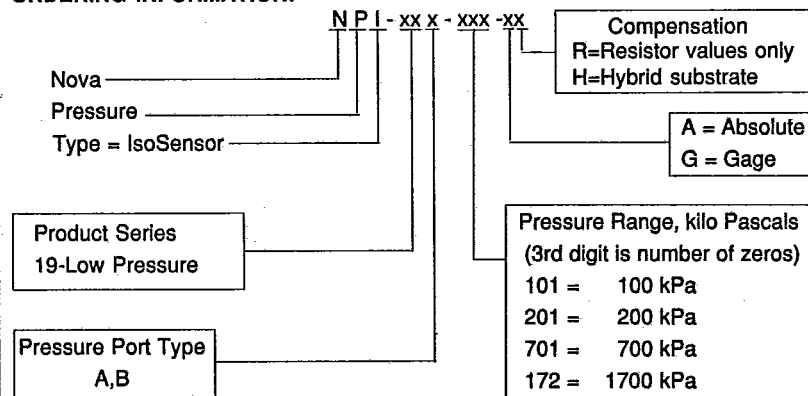
All values are maximum unless otherwise stated.

All values measured in reference to 25°C (77° F) and at 1.0 mA constant current unless otherwise stated.

\*\*Higher performance available upon request.

## ORDERING INFORMATION:

## REPRESENTED BY:



**Ordering Example:** Assume a requirement for absolute pressure transducer with pressure port type A, a 0-700 kiloPascal range, resistor values only. Model number would be: NPI-19A-701AR

**Sales Terms:** Net 30 days FOB Fremont, CA 94539. Prices and specifications are subject to change without notice.

**Warranty:** NovaSensor warrants its products against defects in material and workmanship for 12 months from date of shipment. Products not subjected to misuse will be repaired or replaced. THE FOREGOING IS IN LIEU OF ANY OTHER EXPRESSED OR IMPLIED WARRANTIES. NovaSensor reserves the right to make changes to any product herein and assumes no liability arising out of the application or use of any product or circuit described or referenced herein.

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