# 154N

## Uncompensated

## SPECIFICATIONS

- **316L SS Pressure Sensor**
- **19mm Diameter Package**
- **Absolute and Gage**

The 154N uncompensated is a 19mm small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 154N uncompensated is designed for o-ring mounting and OEM applications requiring compatibility with corrosive media is required.

The sensing package utilizes silicone oil to transfer pressure from the 316L stainless steel diaphragm to the sensing element.

Please refer to the 154N compensated and constant voltage datasheet for more information on different features of the 154N.

## FEATURES

- O-Ring Mount
- -40ºC to +125ºC Operating Temperature Range
- Up to ±0.1% Pressure Non Linearity
- Solid State Reliability

## APPLICATIONS

- Medical Instruments
- Process Control
- Fresh & Waste Water Measurements
- Partial Vacuum Gas Measurement
- Pressure Transmitters
- Tank Level Systems (RV & Industrial)

## STANDARD RANGES

| Range | psia | psig |
|---|---|---|
| 0 to 1 | | • |
| 0 to 5 | • | • |
| 0 to 15 | • | • |
| 0 to 30 | • | • |
| 0 to 50 | • | • |
| 0 to 100 | • | • |
| 0 to 300 | • | • |
| 0 to 500 | • | • |

## PERFORMANCE SPECIFICATIONS

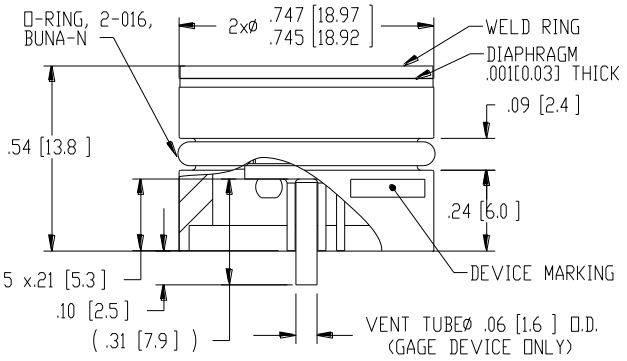
**Supply Current: 1.5mA**
**Ambient Temperature: 25°C (unless otherwise specified)**

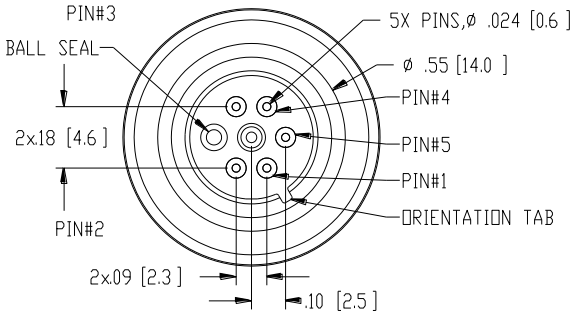
| PARAMETERS | 001PSI | | | 005PSIA | | | 005PSIG & ≥015PSI | | | UNITS | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MIN | TYP | MAX | MIN | TYP | MAX | MIN | TYP | MAX | | |
| Sensitivity | 9 | | 20 | 12 | 15 | 18 | 12 | | 27 | mV/V@Span | |
| Zero Pressure Output | -4.0 | | 8.0 | -10 | | 10 | -6.0 | | 8.0 | mV/V | 1 |
| Pressure Non Linearity | -0.3 | | 0.3 | -0.2 | | 0.2 | -0.1 | | 0.1 | %Span | 2 |
| Repeatability | | ±0.02 | | | ±0.02 | | | ±0.02 | | %Span | |
| Pressure Hysteresis | -0.10 | | 0.10 | -0.10 | | 0.10 | -0.05 | | 0.05 | %Span | 3 |
| Bridge Resistance | 4.4 | | 6.2 | 4.0 | 5.0 | 6.0 | 3.8 | | 5.8 | KΩ | 4 |
| Thermal Hysteresis – Span | -0.25 | ±0.05 | 0.25 | -0.25 | ±0.05 | 0.25 | -0.25 | ±0.05 | +0.25 | %Span | 5 |
| Thermal Hysteresis – Offset | -0.25 | ±0.05 | 0.25 | -0.25 | ±0.05 | 0.25 | -0.25 | ±0.05 | +0.25 | %Span | 5 |
| Temp. Coefficient – Resistance | 2.6 | 3.2 | 3.5 | | 2.4 | | 1.30 | 1.51 | 1.75 | K PPM/°C | 5 |
| Temp. Coefficient – Span | -3.3 | -2.8 | -2.3 | | -2.0 | | -1.65 | -1.25 | -1.0 | K PPM/°C | 5 |
| Temp. Coefficient – Offset | | ±100 | | -30 | | 30 | -80 | | 80 | uV/V/°C | 3, 5 |
| Long Term Stability – Span | | ±0.10 | | | ±0.10 | | | ±0.10 | | %Span/year | |
| Long Term Stability – Offset | | ±0.25 | | | ±0.25 | | | ±0.10 | | %Span/year | 3 |
| Supply Current | 0.5 | 1.5 | 2.0 | 0.5 | 1.5 | 2.0 | 0.5 | 1.5 | 2.0 | mA | |
| Supply Voltage | | 5 | 9.5 | | 5 | 9.5 | | 5 | 9.5 | V | |
| Output Noise (10Hz to 1KHz) | | 1.0 | | | 1.0 | | | 1.0 | | uV p-p | |
| Response Time (10% to 90%) | | 0.1 | | | 0.1 | | | 0.1 | | ms | |
| Insulation Resistance (50Vdc) | 50 | | | 50 | | | 50 | | | MΩ | 6 |
| Pressure Overload | | | 10x | | | 3x | | | 3x | Rated | 7 |
| Pressure Burst | | | 12x | | | 4x | | | 4x | Rated | 8 |
| Operating Temperature | -40 | | +85 | -40 | | +125 | -40 | | +125 | ºC | |
| Storage Temperature | -50 | | +125 | -50 | | +125 | -50 | | +125 | ºC | |
| Media – Pressure Port | Liquids and Gases compatible with 316L Stainless Steel | | | | | | | | | | |

**Notes**

1. Measured at vacuum for absolute (A) and at ambient for gage (G).
2. Non linearity is ±0.2 max for 5 psiG devices.
3. Values for 5psiG devices are as follows:
   Pressure Hysteresis: -0.10 min, +0.10 max
   Temp. Coefficient (Span): -80 min, +80 max
   Long Term Stability (Offset): ±0.25 typ
4. Bridge resistance is measured with both –E pins shorted together.
5. TC values are first order coefficients to a quadratic fit over a temperature range of -20°C to +85°C (0°C to 50°C for 1psi, 0°C to 70°C for 5psi).
6. Between case and sensing element.
7. The maximum pressure that can be applied without changing the transducer's performance or accuracy.
8. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
9. Standard gage units are not recommended for vacuum applications
10. Direct mechanical contact with diaphragm is prohibited. Diaphragm surface must remain free of defects (scratches, punctures, fingerprints, etc.) for device to operate properly. Caution is advised when handling parts with exposed diaphragms. Use protective cap whenever devices are not in use.

## DIMENSIONS

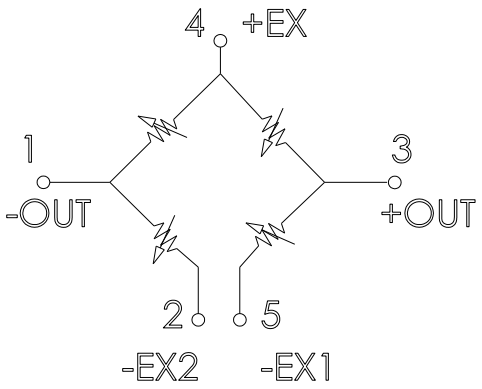



| SENSOR PINOUT | |
|---|---|
| PIN NO. | FUNCTION |
| 1 | -OUT |
| 2 | -EX2 |
| 3 | +OUT |
| 4 | +EX |
| 5 | -EX1 |

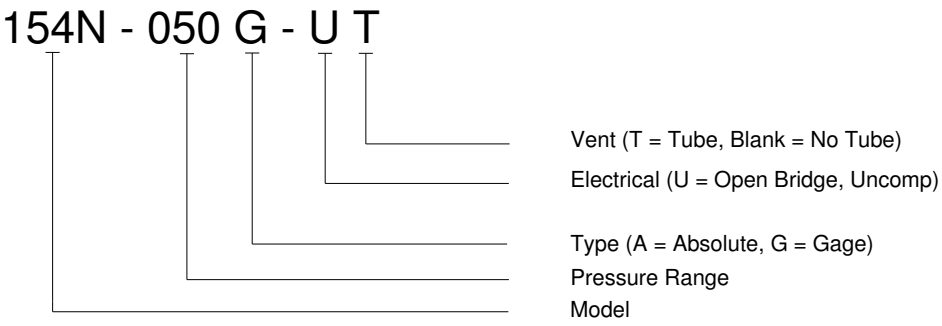
DIMENSIONS ARE INCHES[mm]

## CONNECTIONS




APPLICATION SCHEMATIC

## ORDERING INFORMATION

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