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RoHS

154N

Compensated

SPECIFICATIONS

- **316L SS Pressure Sensor**
- **19mm Diameter Package**
- **0 - 100mV Output**
- **Absolute and Gage**
- **Temperature Compensated**

FEATURES

- O-Ring Mount
- -40ºC to +125ºC Operating
- Temperature Range
- Up to ±0.1% Pressure Non-Linearity
- 1.0% Interchangeable Span
- (provided by gain set resistor)
- Solid State Reliability

APPLICATIONS

- Medical Instruments
- Process Control
- Fresh & Waste Water Measurements
- Refrigeration/Compressors
- Pressure Transmitters
- Hydraulic Controls

The 154N compensated is a 19 mm small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 154N compensated is designed for O-ring mounting and OEM applications where 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. A ceramic substrate is attached to the package that contains laser-trimmed resistors for temperature compensation and offset correction. An additional laser-trimmed resistor is included which can be used to adjust an external differential amplifier and provide span interchangeability to within ±1%.

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

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	•	•

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PERFORMANCE SPECIFICATIONS

Unless otherwise specified: Supply Current: 1.5mA, Ambient Temperature: 25°C

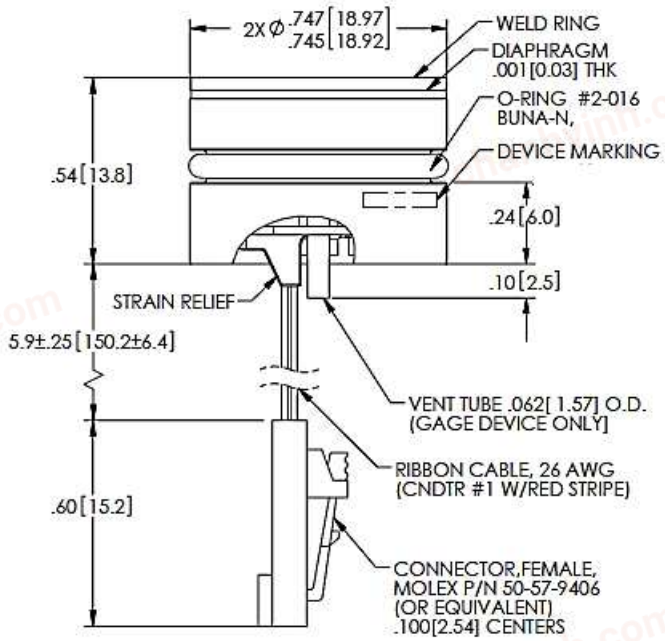
PARAMETERS	≤005PSI			≥015PSI			UNITS	NOTES
	MIN	TYP	MAX	MIN	TYP	MAX		
Span	50	100	150	75	100	150	mV	1
Zero Pressure Output	-2.0	0	2.0	-1.0	0	1.0	mV	2
Pressure Non Linearity		1psi: -0.30 to 0.30 5psi: -0.20 to 0.20		-0.10		0.10	%Span	3
Pressure Hysteresis	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02			±0.02		%Span	
Input Resistance	2.0	3.5	6.5	2.0	3.5	5.8	KΩ	
Output Resistance	4.0		7.0	4.0		6.0	KΩ	
Temperature Error – Span	-1.0		1.0	-0.75		0.75	%Span	4
Temperature Error – Offset	-1.0		1.0		15psi: -0.75 to 0.75 >15psi: -0.50 to 0.50		%Span	4
Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	4
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	4
Long Term Stability – Span		±0.10			±0.10		%Span/Year	
Long Term Stability – Offset		±0.25			±0.10		%Span/Year	
Supply Current	0.5	1.5	2.0	0.5	1.5	2.0	mA	5
Output Load Resistance	5			5			MΩ	6
Insulation Resistance ($50V_{DC}$)	50			50			MΩ	7
Output Noise (10Hz to 1KHz)		1.0			1.0		µV p-p	
Response Time (10% to 90%)		0.1			0.1		ms	
Pressure Overload		1psi: 10X max 5psi: 3X max				3X	Rated	
Pressure Burst		1psi: 12X max 5psi: 4X max				4X	Rated	8
Compensated Temperature		1psi: 0 to 50 5psi: 0 to 70		-20		+85	°C	
Operating Temperature	-20		+70	-40		+125	ºC	9
Storage Temperature	-50		+125	-50		+125	ºC	9
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel							
Media – Reference Port	Compatible with Silicon, Pyrex, Gold, Fluorosilicone Rubber, and 316/316L Stainless Steel							

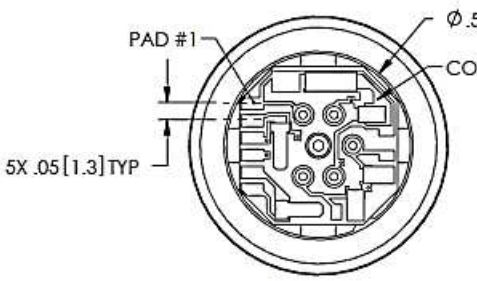
Notes

1. For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
2. Measured at vacuum for absolute (A), ambient for gage (G).
3. Best fit straight line.
4. Over the compensated temperature range with respect to 25°C.
5. Guarantees output/input ratiometricity.
6. Load resistance to reduce measurement errors due to output loading.
7. Between case and sensing element.
8. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
9. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.
10. Standard gage units are not recommended for vacuum applications. For vacuum applications below 1/2 atmosphere, consult factory.
11. Device Marking:
    Each part shall be identified with Model Number, Pressure Range, Type, Lot Number, Serial Number and Date Code.
12. Shipping/Packaging:
    The stainless steel diaphragm is protected by a plastic cap. Each unit will be packaged individually in a plastic vial with anti-static foam.

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DIMENSIONS

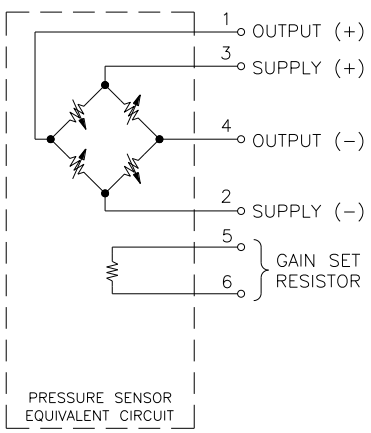




VIEW SHOWN W/O CABLE
AND CONNECTOR FOR CLARITY

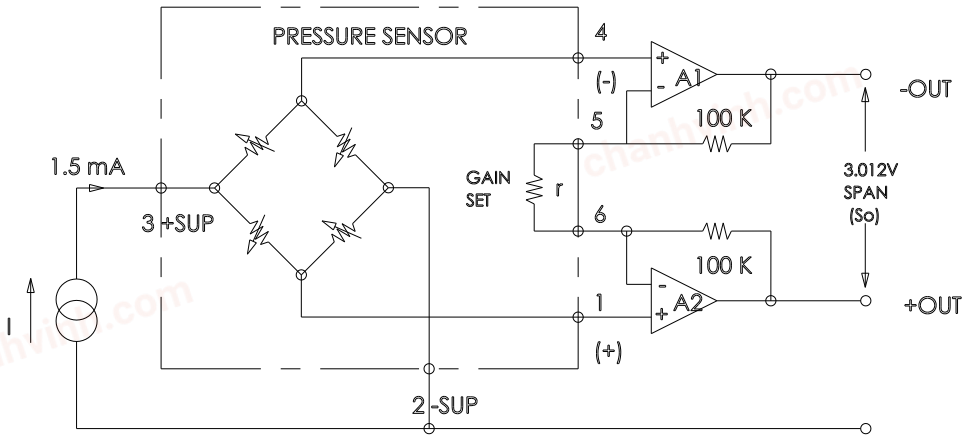
PAD NO	FUNCTION
1	+OUT
2	-EX
3	+EX
4	-OUT
5	GAIN
6	

CONNECTIONS



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APPLICATION SCHEMATIC



ORDERING INFORMATION

154N – 030 A – P T

Pressure Range [psi]
001 (Gage Only)
005
015
030
050
100
300
500

Pressure Type	
G	Gage
A	Absolute

Vent	
T	Tube
[Blank]	No Tube

Electrical	
P	Solder Pads
R	Ribbon cable
C	Cable w/ Connector

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