

85

Vacuum Gage (Compensated)

SPECIFICATIONS

- **316L SS Pressure Sensor**
- **Small Profile**
- **0 - 100mV Output**
- **Vacuum Gage**
- **Temperature Compensated**

The 85 vacuum gage is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 85 vacuum gage is offered in a weldable package or with a variety of threaded fittings such as 1/4 and 1/8NPT, 1/4BSP as well as custom process fittings.

The 85 vacuum gage is designed for OEM applications where compatibility with corrosive media is required. The sensing package utilizes silicon 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 85 uncompensated, compensated and constant voltage datasheets for more information on different features of the 85.

FEATURES

- Weldable and Threaded Process Fittings
- -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
- Partial Vacuum Gas Measurement
- Pressure Transmitters
- Tank Level Systems (RV & Industrial)

STANDARD RANGES

Range	psiv
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)

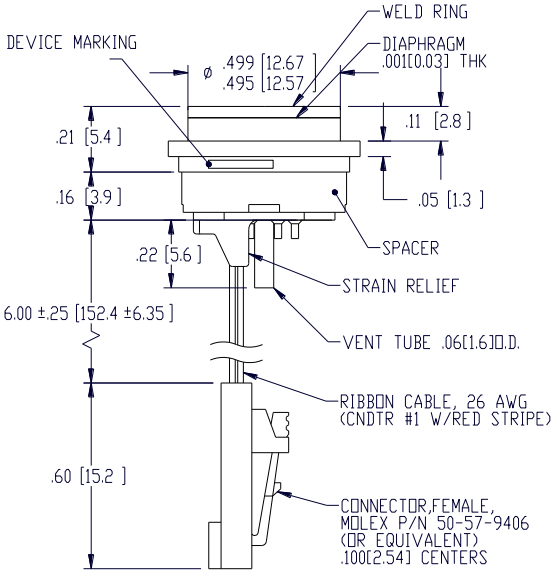
PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	75	100	150	mV	1
Zero Pressure Output	-1.0	0	1.0	mV	2
Pressure Non Linearity	-0.20		0.20	%Span	3
Pressure Hysteresis	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02		%Span	
Input Resistance	2000	3500	5800	Ω	
Output Resistance	4000		6000	Ω	
Temperature Error – Span	-1.0		1.0	%Span	4
Temperature Error – Offset	-1.0		1.0	%Span	4,5
Thermal Hysteresis – Span	-0.25	±0.05	0.25	%Span	4
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	%Span	4
Long Term Stability – Span		±0.10		%Span/year	
Long Term Stability – Offest		±0.10		%Span/year	
Supply Current	0.5	1.5	2.0	mA	6
Output Load Resistance	5			MΩ	7
Insulation Resistance (50Vdc)	50			MΩ	8
Output Noise (10Hz to 1KHz)		1.0		µV p-p	
Response Time (10% to 90%)			0.1	ms	
Pressure Overload			3X	Rated	
Pressure Burst			4X	Rated	9
Compensated Temperature	-20		+85	ºC	
Operating Temperature	-40		+125	ºC	10
Storage Temperature	-50		+125	ºC	10
Media – Pressure Port	Liquids and Gases compatible with 316L Stainless Steel				

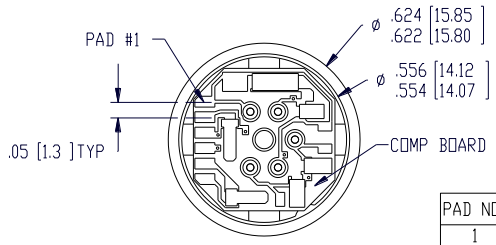
Notes

1. For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
2. Measured at ambient for vacuum gage (V).
3. Best fit straight line. For pressure range 15 - 100psi, PNL is ±0.1 %Span.
4. Over the compensated temperature range with respect to 25°C.
5. 15psi range sensors have a temperature error – offset of ±1.5% (max).
6. Guarantees output/input ratiometricity.
7. Load resistance to reduce measurement errors due to output loading.
8. Between case and sensing element.
9. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
10. Maximum temperature range for product with standard cable and connector is -20 to +105°C.

DIMENSIONS

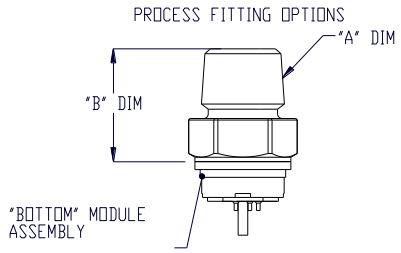
DIMENSIONS ARE IN INCHES [mm]

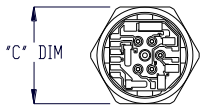




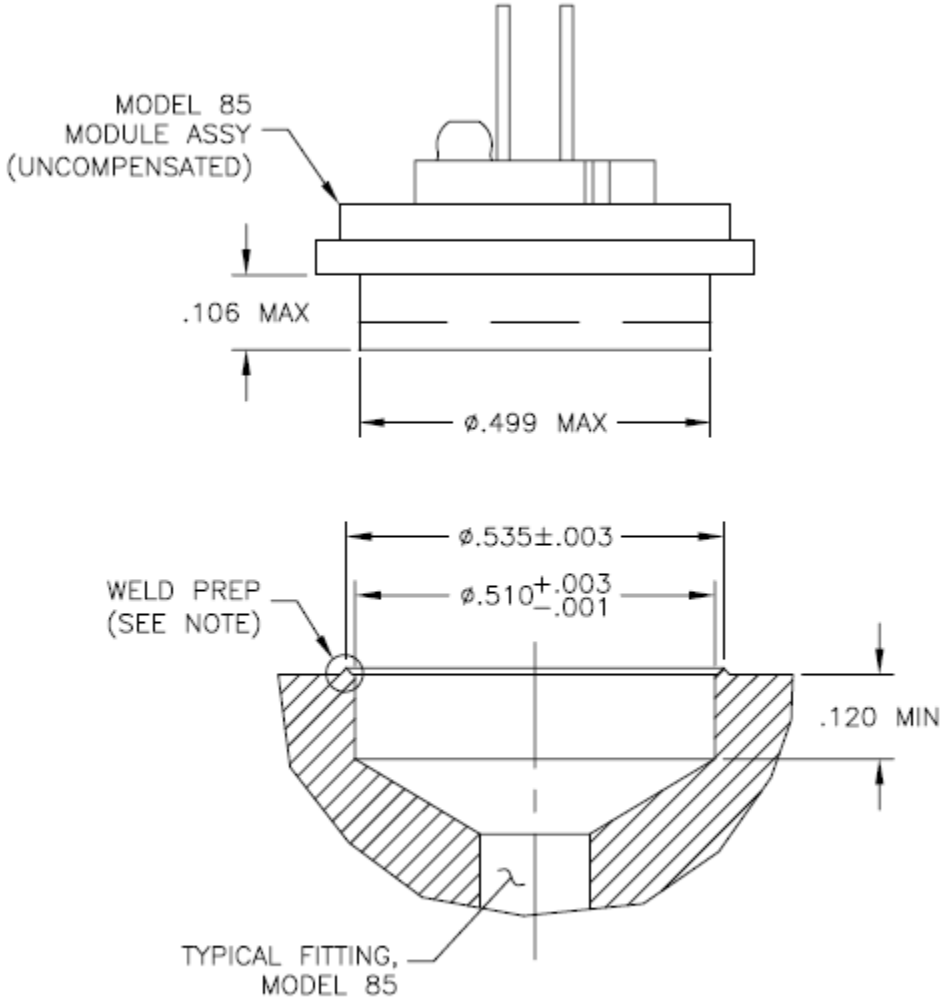
VIEW SHOWN W/O CABLE
AND CONNECTOR FOR CLARITY

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



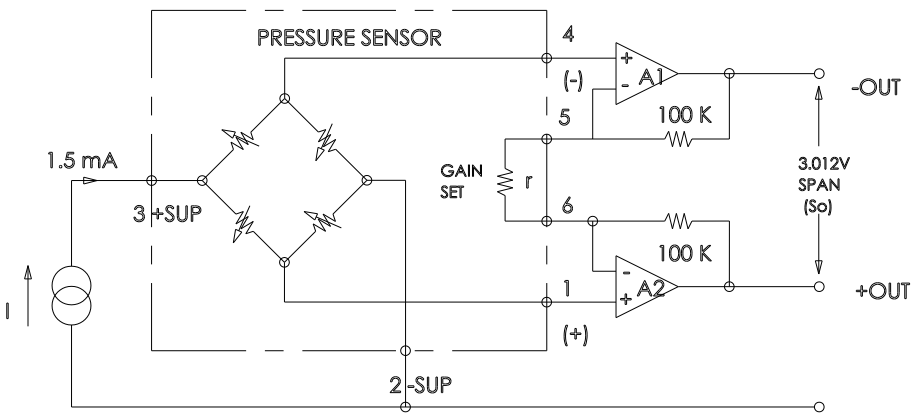


FITTING DIMENSIONS				
FITTING TYPE	MEAS PART NO.	"A" DIM	"B" DIM	"C" DIM
1	IC-7050	1/4-18 NPT	.99[25.1]	7/8[22.2] HEX
2	IC-7049	1/8-27 NPT	.96[24.4]	7/8[22.2] HEX
3	IC-7048	7/16-20 UNF	.81[20.6]	7/8[22.2] HEX
4	IC-6754	1/4-18 NPT	.73[18.5]	5/8[15.9] HEX
5	IC-5010	1/4-19 BSP	.76[19.3]	3/4[19.0] HEX
8	IC-6800	1/8-27 NPT	.60[15.2]	5/8[15.9] HEX
9	IC-7124	1/4-19 BSP	.94[23.9]	7/8[22.2] HEX
NOTE : FTG TYPE '4' ASSEMBLY SHOWN ALL DIMS ARE FOR REFERENCE				



NOTE: WELD PREP SHOWN IS FOR RESISTANCE WELD. ACTUAL GEOMETERY VARIES PER CUSTOMER REQUIREMENTS.

APPLICATION SCHEMATIC



ORDERING INFORMATION

85 – 030 V – 3 R T

Pressure Range [Psi]
015
030
050
100
300
500

Vent	
T	Tube
[Blank]	No Tube

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

Pressure Type	
V	Vacuum Gage

Fitting Type	
[Blank]	No Fitting, Weldable
1	1/4 NPT, 7/8 Hex
2	1/8 NPT, 7/8 Hex
3	7/16 UNF, 7/8 Hex
4	1/4 NPT, 5/8 Hex
5	1/4 BSP, 3/4 Hex
8	1/8 NPT, 5/8 Hex
9	1/4 BSP, 7/8 Hex

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