Model 89 UltraStable™ (Compensated)

- **316L SS Pressure Sensor**
- **High Pressure**
- **0 - 100mV Output**
- **Absolute and Sealed Gage**

DESCRIPTION

The Model 89 UltraStable™ is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The Model 89 UltraStable™ features 5/16-32 UNEF threads and can be welded in place. It can also be packaged in a variety of threaded fittings such as 1/4 and 1/8NPT, 1/4BSP as well as custom process fittings. Contact factory for threaded fitting options.

The Model 89 UltraStable™ is designed for high pressure 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. For devices with leads, please see uncompensated datasheet.

FEATURES

- Threaded Process Fittings or O-Ring Mount
- -40ºC to +125ºC Operating Temperature Range
- ±0.25% Pressure Non Linearity
- Solid State Reliability

APPLICATIONS

- Hydraulic Controls
- Process Control
- Pressure Calibrators
- Refrigeration/Compressors

STANDARD RANGES

Range	psia	psis
0 to 1000	•	•
0 to 3000	•	•
0 to 5000	•	•

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PERFORMANCE SPECIFICATIONS

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

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Full Scale Output Span	75	125	210	mV	1
Zero Pressure Output	-1.0		1.0	mV	
Pressure Non Linearity	-0.25		0.25	%Span	2
Pressure Hysteresis	-0.1		0.1	%Span	
Input Resistance	3000	4000	5000	Ω	
Output Resistance	4000		6000	Ω	
Temperature Error – Span	-0.75		0.75	%Span	3
Temperature Error – Zero	-0.75		0.75	%Span	3
Thermal Hysteresis – Span	-0.25		0.25	%Span	3
Thermal Hysteresis – Zero	-.025		0.25	%Span	3
Long Term Stability – Zero/Span		±0.1		%Span/yr	
Supply Current	0.5	1.5	2.0	mA	
Output Load Resistance	5			MΩ	4
Insulation Resistance (50Vdc)	50			MΩ	5
Pressure Overload			3X	Rated	6
Pressure Burst			4X	Rated	7
Operating Temperature	-40		+125	ºC	8
Compensated Temperature Range	-20		+85	ºC	3
Storage Temperature	-50		+125	ºC	8
Weight			9	grams	
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel				

Notes

1. Calculated at FSP, 3000psi and 5000psi parts are tested at 2500psi.
2. Best fit straight line between 0 and FSP.
3. Over the compensated temperature range with respect to +25°C.
4. Load resistance to reduce measurement errors due to output loading.
5. Between case and sensing element.
6. 3X or 10,000psi, whichever is less.
7. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
8. Maximum temperature range for this product with standard cable and connector is -20°C to +105°C.

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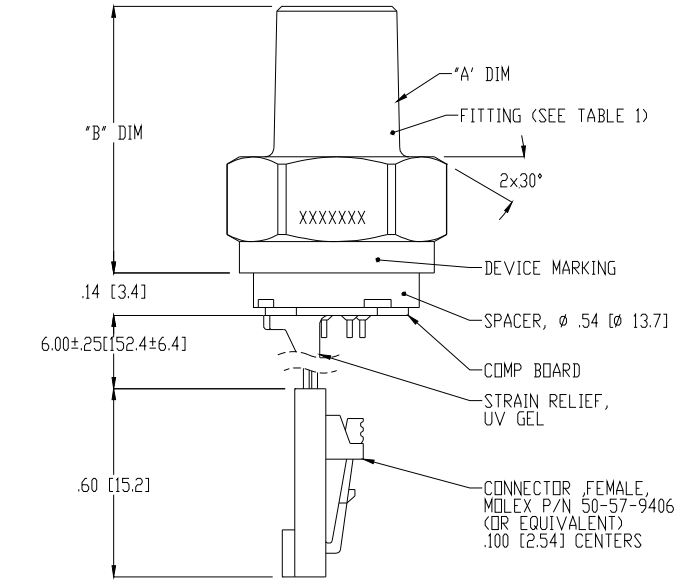
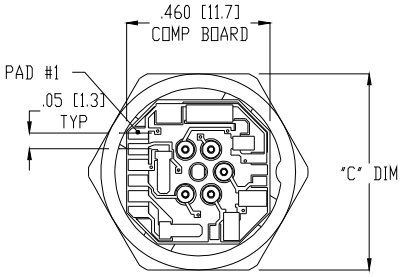
DIMENSIONS

DIMENSIONS ARE IN INCHES [mm]

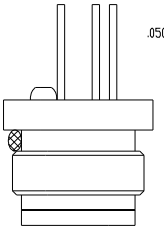




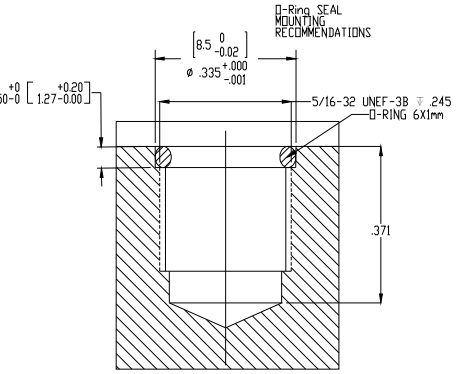
VIEW SHOWN W/O CABLE
AND CONNECTOR FOR CLARITY

TABLE 1: FITTING DIMENSION			
FITTING TYPE	"A" DIM	"B" DIM	"C" DIM
1	1/4-18 NPT	.93[23.6]	7/8 [22.2] HEX
2	1/8-27 NPT	.91[23.1]	7/8 [22.2] HEX
3	7/16-20 UNF	.77[19.6]	7/8 [22.2] HEX
4	1/4-18 NPT	.82[20.8]	5/8 [15.9] HEX
5	1/4-19 BSP	.82[20.8]	3/4 [19.0] HEX
8	1/8-27 NPT	.69[17.5]	5/8 [15.9] HEX
9	1/4-19 BSP	.89[22.6]	7/8 [22.2] HEX

NOTE : FITTING TYPE "4" ASSEMBLY SHOWN
ALL DIMS ARE FOR REFERENCE ONLY

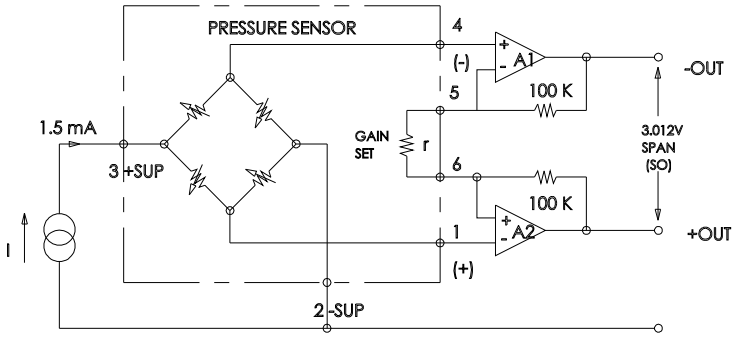


RAW SENSOR W/O FITTING



TYPICAL MOUNTING SOLUTION FOR RAW SENSOR

CONNECTIONS



APPLICATION SCHEMATIC

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

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ORDERING INFORMATION