89 Compensated



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

DESCRIPTION

The 89 compensated is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 89 compensated 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 89 compensated 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. A ceramic substrate is attached to the package that contains laser-trimmed resistors for temperature compensated 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 89 uncompensated and constant voltage datasheets for more information on different features of the 89.

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	•	•
0 to 10K	•	•

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				

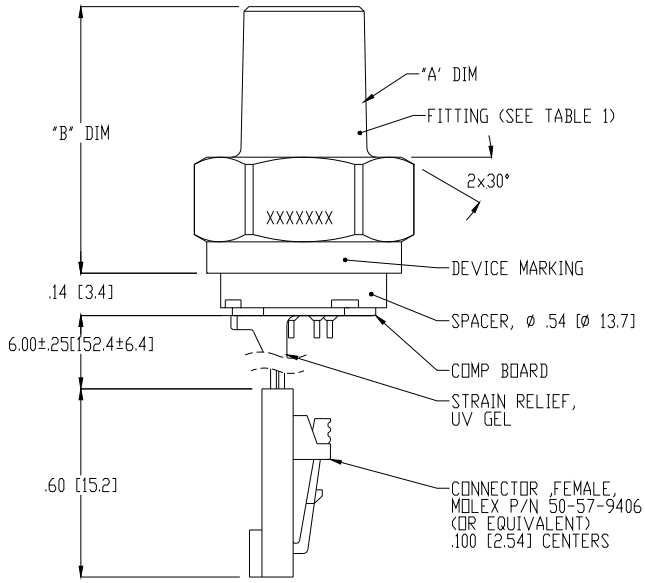
Notes

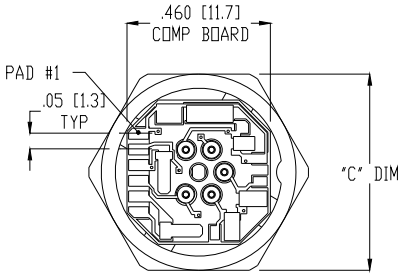
1. Calculated at FSP, 3000psi and 5000psi parts are tested at 2500psi.
2. Best fit straight line between 0 and FSP.
3. Over the compensated temperature range with respect to +25°C.
4. Load resistance to reduce measurement errors due to output loading.
5. Between case and sensing element.
6. 3X or 10,000psi, 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]

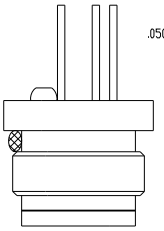




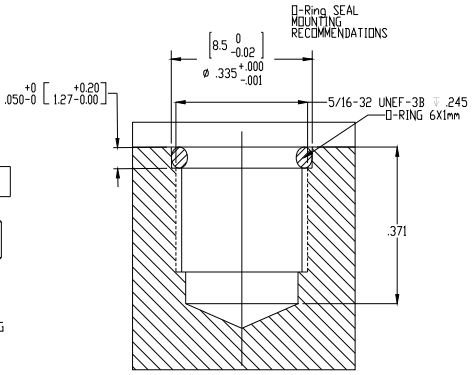
VIEW SHOWN w/o CABLE
AND CONNECTOR FOR CLARITY

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

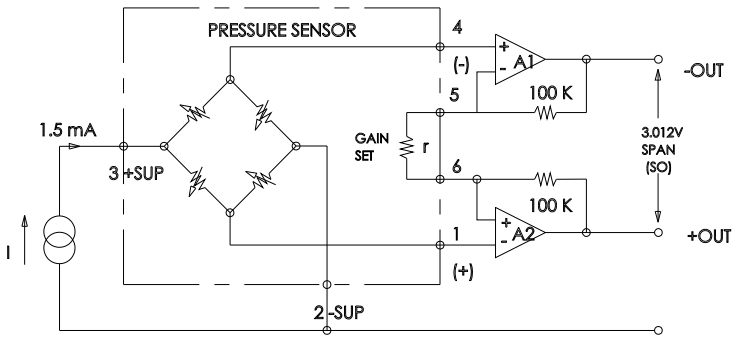


RAW SENSOR W/O FITTING



TYPICAL MOUNTING SOLUTION FOR RAW SENSOR

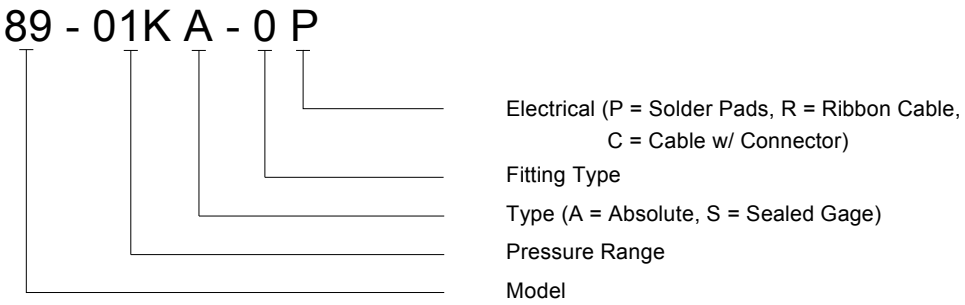
CONNECTIONS



APPLICATION SCHEMATIC

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

ORDERING INFORMATION



NORTH AMERICA

Measurement Specialties
45738 Northport Loop West
Fremont, CA 94538
Tel: 1-800-767-1888
Fax: 1-510-498-1578
Sales: pfg.cs.amer@meas-spec.com

EUROPE

Measurement Specialties
(Europe), Ltd.
26 Rue des Dames
78340 Les Clayes-sous-Bois, France
Tel: +33 (0) 130 79 33 00
Fax: +33 (0) 134 81 03 59
Sales: pfg.cs.emea@meas-spec.com

ASIA

Measurement Specialties
(China), Ltd.
No. 26 Langshan Road
Shenzhen High-Tech Park (North)
Nanshan District, Shenzhen 518107
China
Tel: +86 755 3330 5088
Fax: +86 755 3330 5099
Sales: pfg.cs.asia@meas-spec.com

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