



# 82 Compensated

### **SPECIFICATIONS**

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

The 82 compensated is a 19 mm small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 82 compensated can be configured for o-ring mounting or threaded process fittings and is designed for 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 lasertrimmed 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  $\pm 1\%$ .

Please refer to the 82 uncompensated and constant voltage datasheets for more information on different features of the 82.

# FEATURES

- O-Ring Mount/Threaded Process Fittings
- -40°C to +125°C Operating Temperature Range
- ±0.2% 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	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				005PSI			≥015PSI			
	MIN	ТҮР	MAX	MIN	ТҮР	MAX	MIN	ТҮР	MAX	UNITS	NOTES
Span	50	100	150	50	100	150	75	100	150	mV	1
Zero Pressure Output	-2	0	2	-2	0	2	-1	0	1	mV	
Pressure Non Linearity	-0.3		0.3	-0.2		+0.2	-0.1		0.1	%Span	2
Pressure Hysteresis	-0.10	±0.02	0.10	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02			±0.02			±0.02		%Span	
Input Resistance	2.5	5.0	6.5	2.5	5.0	6.5	3.8		5.8	KΩ	
Output Resistance	4.0		7.0	4.0		7.0	4.0		6.0	KΩ	
Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	-0.25	±0.05	+0.25	%Span	3
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	-0.25	±0.05	+0.25	%Span	3
Temperature Error – Span	-1.0		1.0	-1.0		1.0	-0.75		0.75	%Span	3
Temperature Error – Offset	-1.0		1.0	-1.0		1.0	-0.5		0.5	%Span	3, 9
Long Term Stability – Span		±0.10			±0.10			±0.10		%Span	4
Long Term Stability – Offset		±0.25			±0.25			±0.10		%Span	4
Supply Current	0.5	1.5	2.0	0.5	1.5	2.0	0.5	1.5	2.0	mA	
Insulation Resistance (50Vdc)	50			50			50			MΩ	5
Output Noise (10Hz to 1KHz)		1			1			1		uV p-p	
Response Time (10% to 90%)		0.1			0.1			0.1		ms	
Pressure Overload			10x			Зx			Зx	Rated	6
Pressure Burst			12x			4x			4x	Rated	
Operating Temperature	-20		+70	-20		+70	-40		+125	°C	
Compensated Temperature	0		+50	0		+70	-20		+85	°C	
Storage Temperature	-50		+125	-50		+125	-50		+125	°C	7
Media – Pressure Port	Liquids ar	d Gases c	ompatible	with 316L S	Stainless St	eel and Bu	ına-N				8
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Media – Reference Port

Compatible with Silicon, Pyrex, Gold, Fluorosilicone RTV and 316L Stainless Steel

#### Notes

1. Ratiometric to supply current.

2. Best fit straight line.

3. Maximum temperature error within the compensated temperature range with respect to 25°C.

4. Long term stability over a one year period with constant current and temperature.

5. Minimum resistance between case and pins.

6. 10 psi maximum for 1 psi devices.

7. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.

8. Gage units not recommended for high vacuum applications. For high vacuum applications consult factory.

9. Temperature Error – Offset for 15psi is -0.75 to 0.75 and >15psi is -0.5 to 0.5.

# DIMENSIONS







FITTING TABLE						
FITTING TYPE	MEMS P/N	'A' DIM	'B' DIM	'C' DIM		
1	IC-7152	1/4-18 NPT	.50[12.7]	.98[24.9]		
2	IC-D00510	1/8-27 NPT	.47[11.9]	.95[24.1]		
3	IC-D00511	7/16-20 UNF	.33[8.4]	.80[20.3]		
9	IC-D00512	1/4-19 BSP	.45[11.4]	.93[23.3]		
NOTE: FITTING TYPE '1' ASSEMBLT SHOWN ALL DIMS ARE FOR REFERENCE.						

DIMENSIONS ARE IN INCHES [mm]

# CONNECTIONS



### **APPLICATION SCHEMATIC**



#### ORDERING INFORMATION

82	-	050	G	-	1	С	Т
Model	-	Pressure Range	Pressure Type	-	Fitting Type	Electrical	Vent
82	-	001* 005 015 030 050 100 300 500	<b>G</b> = Gage <b>A</b> = Absolute	-	Blank = O-Ring Mount 1 = <sup>1</sup> / <sub>4</sub> -18NPT 2 = 1/8-27 NPT 3 = 7/16-20UNF 9 = <sup>1</sup> / <sub>4</sub> -19BSP	P = Solder Pads R = Ribbon Cable C = Cable w/ Connector	<b>Blank</b> = No Tube <b>T</b> = Tube

\*1psi only available in gage type

#### **NORTH AMERICA**

Measurement Specialties, Inc., a TE Connectivity Company 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., a TE Connectivity Company 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., a TE Connectivity Company No. 26 Langshan Road Shenzhen High-Tech Park (North) Nanshan District, Shenzhen 518057 China Tel: +86 755 3330 5088 Fax: +86 755 3330 5099 Sales: pfg.cs.asia@meas-spec.com

#### TE.com/sensorsolutions

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