



## 85 Uncompensated

### SPECIFICATIONS

- 316L SS Pressure Sensor
- Small Profile
- 0 - 100mV Output
- Absolute and Gage

### FEATURES

- Weldable and Threaded Process Fittings
- -40°C to +125°C Operating Temperature
- ±0.1% Pressure Non Linearity
- Solid State Reliability

### APPLICATIONS

- Medical Instruments
- Process Control
- Fresh & Waste Water Measurements
- Partial Vacuum Gas Measurement
- Pressure Transmitters
- Tank Level Systems (RV & Industrial)

The 85 vacuum uncompensated pressure sensor is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 85 vacuum uncompensated pressure sensor 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 other custom process fittings.

The 85 uncompensated 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.

Please refer to the 85 compensated and constant voltage datasheets for more information on different features of the 85.

### STANDARD RANGES

Range	psia	psig
0 to 5	•	•
0 to 15	•	•
0 to 30	•	•
0 to 50	•	•
0 to 100	•	•
0 to 300	•	•
0 to 500	•	•

## PERFORMANCE SPECIFICATIONS

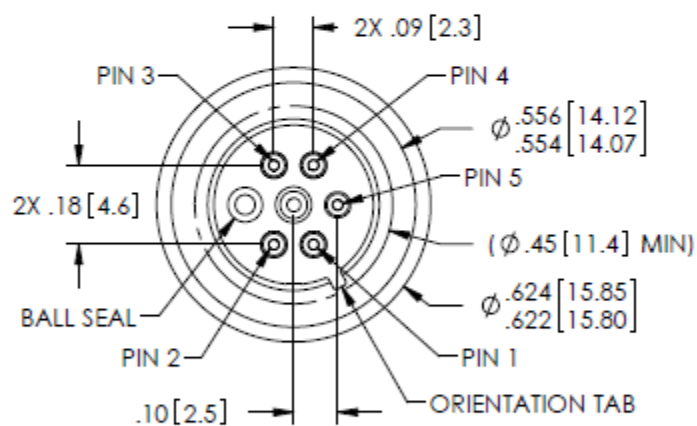
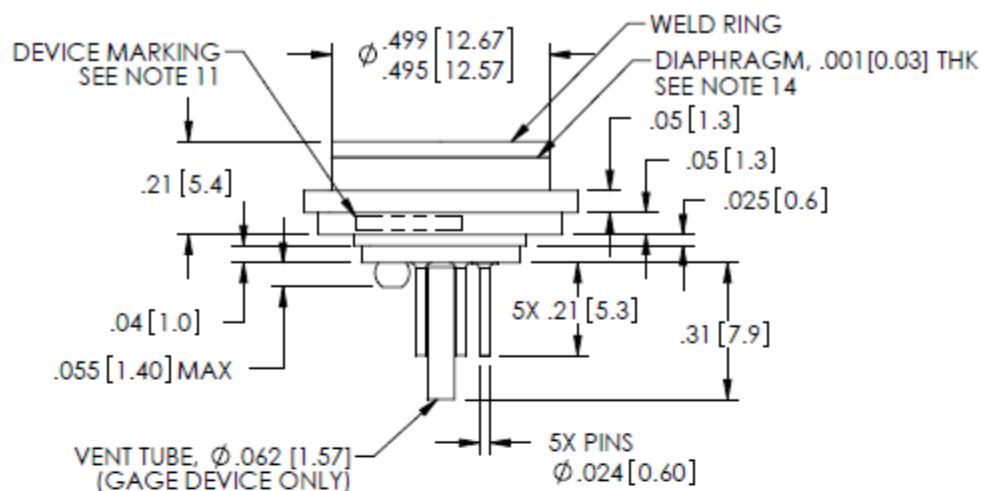
Unless otherwise specified: Supply Current: 1.5mA, Ambient Temperature: 25°C

PARAMETERS	005 PSIA			005 PSIG & ≥15PSIG			UNITS	NOTES
	MIN	TYP	MAX	MIN	TYP	MAX		
Sensitivity	12	15	18	12		27	mV/V @Span	
Zero Pressure Output	-10		10	-6.0		8.0	mV/V	1
Pressure Non Linearity	-0.2		0.2	-0.1		0.1	%Span	2
Pressure Hysteresis	-0.10		0.10	-0.10		0.10	%Span	3
Repeatability		±0.02			±0.02		%Span	
Bridge Resistance	4.0K	5.0K	6.0K	3.8K		5.8K	Ω	4
Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	5
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	5
Temperature Coefficient – Resistance		2.4K		1.30K	1.51K	1.75K	PPM/°C	5
Temperature Coefficient – Span		-2.0K		-1.65K	-1.25K	-1.0K	PPM/°C	5, 6
Temperature Coefficient – Offset	-80		80	-30		30	μV/V/°C	5
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	
Supply Voltage		5	9.5		5	9.5	V	
Output Noise (10Hz to 1kHz)		1.0			1.0		μV p-p	
Response Time (10% to 90%)		0.1				0.1	ms	
Insulation Resistance (50V <sub>DC</sub> )	50M			50M			Ω	7
Pressure Overload			3X			3X	Rated	
Pressure Burst			4X			4X	Rated	8
Operating Temperature	-40		125	-40		+125	°C	
Storage Temperature	-50		125	-55		+125	°C	
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel							

### Notes

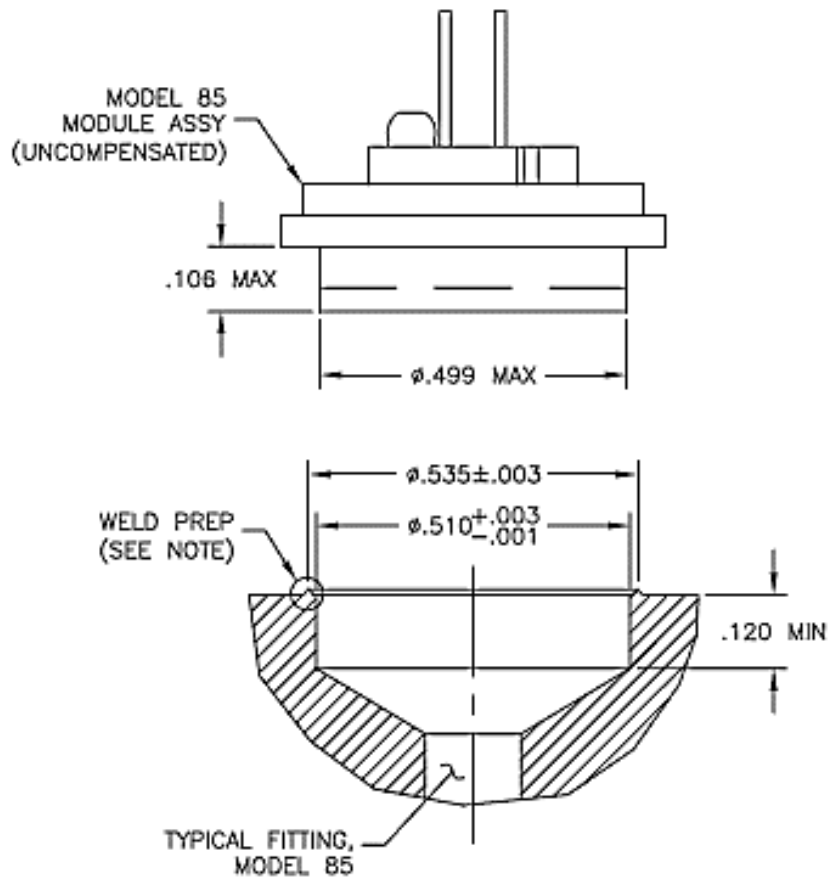
1. Measured at vacuum for absolute (A) and at ambient for gage (G).
2. Best fit straight line. Non linearity is ±0.2% max for 5psiG devices.
3. Values for 5PSIG devices are as follows:  
Non-linearity: ±0.2% max  
Temp coefficient (span): -80 min, 80 max  
Long term stability (offset): ±0.25 TYP
4. Bridge resistance is measured with both –E pins shorted together.
5. TC values are first order coefficients to a quadratic fit over a temperature range of -20 to +85°C (0 to +50°C for 5psi).
6. 5psiA is -1.7K ~ -1.0K ppm/°C.
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. Standard gage units are not recommended for vacuum applications.
10. Testing:  
10.1 Units are not tested over temperature or pressure.  
10.2 A final test is performed @ 1.5mA and room temperature for part functionality.  
10.3 All units are subjected to 100% drift test.
11. Marking:  
Part marked with model number, pressure range, type ('A' for absolute, 'G' for gage), lot number, serial number and date code.
12. Shipping and Packaging:  
The stainless steel diaphragm is protected by a static dissipative cap (No fitting options only). Each unit will be packaged individually in a plastic vial with anti-static foam.
13. Product description:  
Model 85-XXXX-XU(T) is a uncompensated micro machined piezoresistive silicon pressure sensor
14. Direct mechanical contact with diaphragm is prohibited. Diaphragm surface must remain free of defects (scratches, punctures, dents, fingerprints, etc.) for device to operate properly. Caution is advised when handling parts with exposed diaphragms. Use protective cap whenever devices are not in use.

## DIMENSIONS



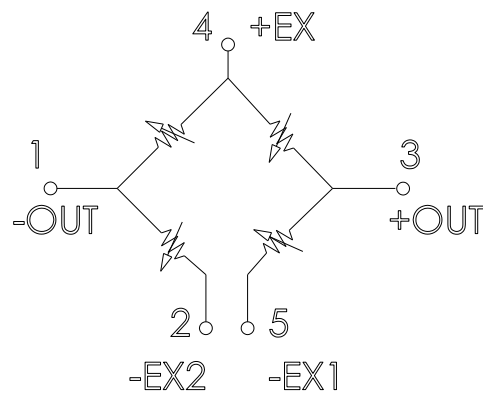
SEE SHEET 2 FOR  
PROCESS FITTING OPTIONS

SENSOR PINOUT	
PIN NO.	FUNCTION
1	-OUT
2	-EX2
3	+OUT
4	+EX
5	-EX1



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

## CONNECTIONS



## ORDERING INFORMATION

85 - 030 A - 3 U I

Pressure Range [psi]	
005	
015	
030	
050	
100	
300	
500	

Pressure Type	
G	Gage
A	Absolute

Vent	
T	Tube
[Blank]	No Tube

Electrical	
U	Open Bridge, Uncomp.

Fitting Type	
[Blank]	No Fitting, Weldable
1	1/4-18 NPT, 7/8 Hex
2	1/8-27 NPT, 7/8 Hex
3	7/16-20 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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