



86BC

SPECIFICATIONS

- ◆ **Low Cost**
- ◆ **316L Stainless Steel**
- ◆ **16mm Diameter Package**
- ◆ **0 - 100mV Output**
- ◆ **Gage and Absolute**
- ◆ **Wide Compensated Temperature Range**

The 86BC is a 16mm small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 86BC is designed with o-ring mounting for easy integration into industrial applications.

The 86BC is a low cost unit designed without a header for 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 $\pm 1\%$.

Please refer to the 86 uncompensated and constant voltage datasheets for more information on different features of the 86.

FEATURES

- ◆ O-Ring Mount
- ◆ -40°C to +105°C Operating Temperature
- ◆ 1.0% Interchangeable Span
(provided by gain set resistor)
- ◆ Solid State Reliability
- ◆ $\pm 0.3\%$ Pressure Non Linearity

APPLICATIONS

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

STANDARD RANGES

Range (psi)	Gage	Range (Bar)	Absolute
0 to 015	◆	0 to 001	◆
0 to 030	◆	0 to 002	◆
0 to 050	◆	0 to 004	◆
0 to 100	◆	0 to 007	◆
		0 to 012	◆
		0 to 018	◆
0 to 300	◆		
		0 to 028	◆

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, 2
Zero Pressure Output, Offset	-1	0	+1	mV	2
Pressure Non-Linearity	-0.3		0.3	%Span	3
Pressure Hysteresis	-0.2		0.2	%Span	
Repeatability		±0.02		%Span	
Input Resistance	2.0	3.5	5.8	kΩ	
Output Resistance	3.0		25.0	kΩ	
Temperature Error – Span	-1.0		1.0	%Span	4
Temperature Error – Zero	-1.0		1.0	%Span	4
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 – Offset		±0.10		%Span/Year	
Supply Current	0.5	1.5	2.0	mA	5
Output Load Resistance	5			MΩ	6
Insulation Resistance (50V _{DC})	50			MΩ	7
Output Noise (10Hz to 1kHz)		1.0		μV p-p	
Response Time (10% to 90%)		0.1		ms	
Pressure Overload			2X	Rated	8
Pressure Burst			3X	Rated	9
Compensated Temperature	-20		+85	°C	10
Operating Temperature	-40		+105	°C	10
Storage Temperature	-50		+105	°C	10
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel				

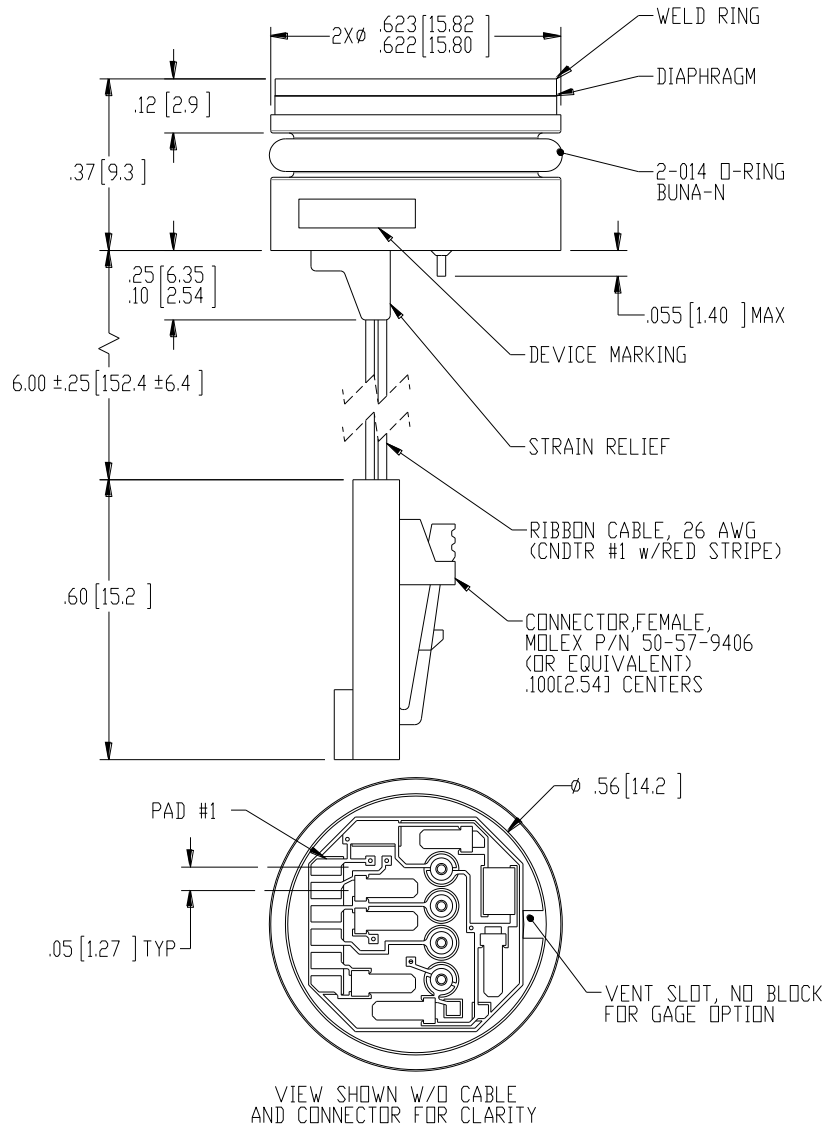
Notes

- For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
- Measured at vacuum for absolute (A), ambient for gage (G).
- Best fit straight line.
- Over the compensated temperature range with respect to 25°C.
- Guarantees output/input ratiometricity.
- Load resistance to reduce measurement errors due to output loading.
- Between case and sensing element.
- 2X or 500psi, whichever is less. The maximum pressure that can be applied without changing the transducer's performance or accuracy.
- 3X or 600psi, whichever is less. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
- Maximum temperature range for product with standard cable and connector is -20°C to +105°C.

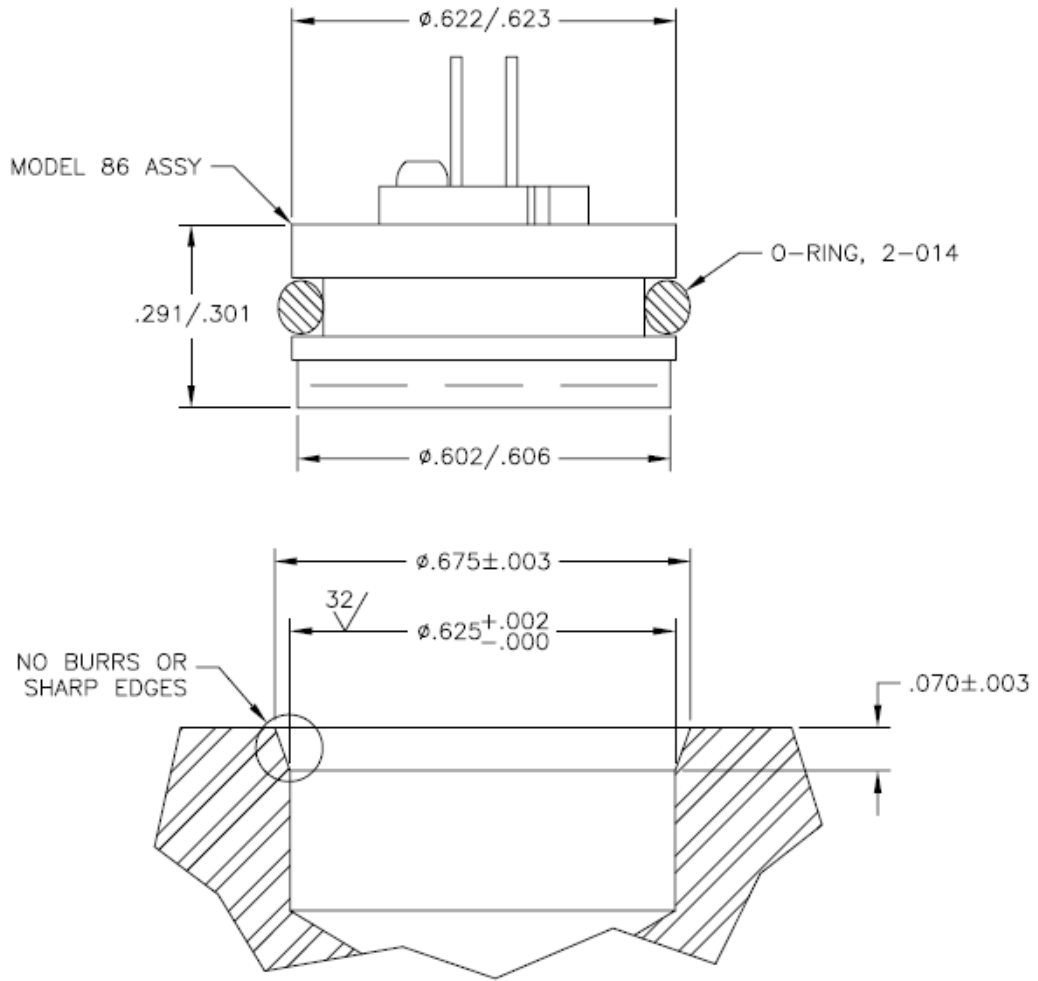
Additional Notes

- 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.
- Standard gage units are not recommended for vacuum applications.

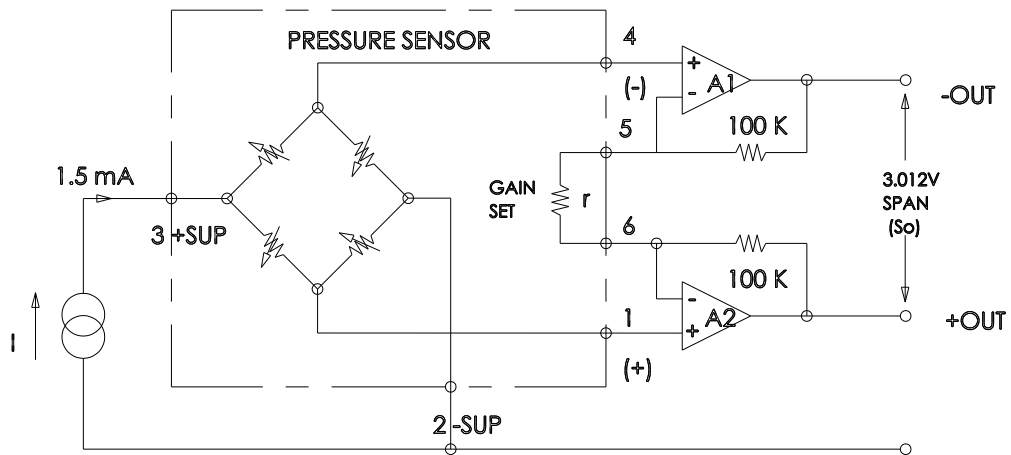
DIMENSIONS



SENSOR PINOUT	
PIN NO.	FUNCTION
1	+OUT
2	-EX
3	+EX
4	-OUT
5	GAIN
6	



APPLICATION SCHEMATIC



ORDERING INFORMATION

86BC	030PG	A	R
Model Name			
Pressure range			
See 'Pressure Range' Table			
Pressure Type			
A = Absolute	G = Gage		
Electrical Connections			
P = Solder Pads	C = Cable with Connector	R = Ribbon Cable	

Pressure Type and Range	
psiG	bar
015PG	001BA
030PG	002BA
050PG	004BA
100PG	007BA
300PG	012BA
	018BA
	028BA



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