



## 85BC

### SPECIFICATIONS

- **Low Cost**
- **316L Stainless Steel**
- **13mm Diameter Package**
- **0 - 100mV Output**
- **Gage and Absolute**
- **Wide Compensated Temperature Range**

The 85BC is a 13mm small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 85BC 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 custom process fittings.

The 85BC is a low cost unit designed without a header 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. 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 85 uncompensated and constant voltage datasheets for more information on different features of the 85.

## FEATURES

- Weldable/Threaded Process Fittings
- -20°C to +85°C Compensated Temperature
- 1.0% Interchangeable Span  
(provided by gain set resistor)
- Solid State Reliability
- ±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 (50Vdc)	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

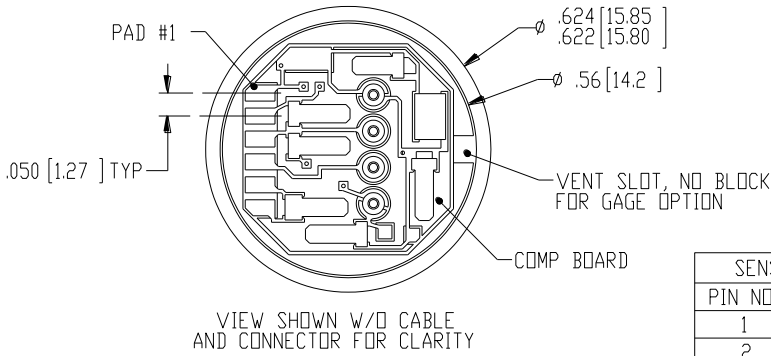
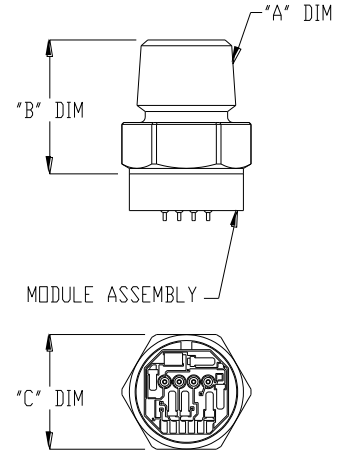
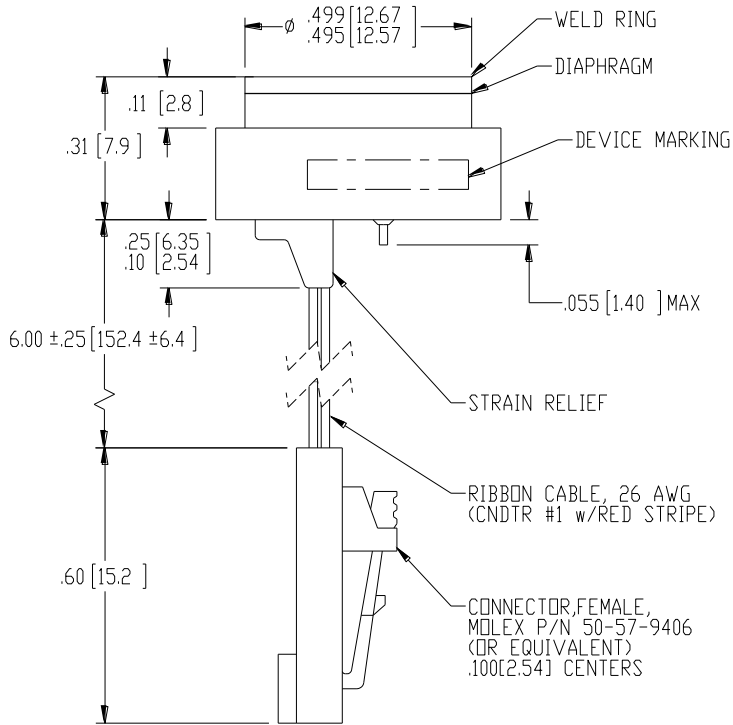
- For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
- Measured at vacuum for absolute (A), ambient for gage (G).
- Best fit straight line.
- Over the compensated temperature range with respect to 25°C.
- Guarantees output/input ratiometricity.
- 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

DIMENSIONS ARE IN INCHES[MM]

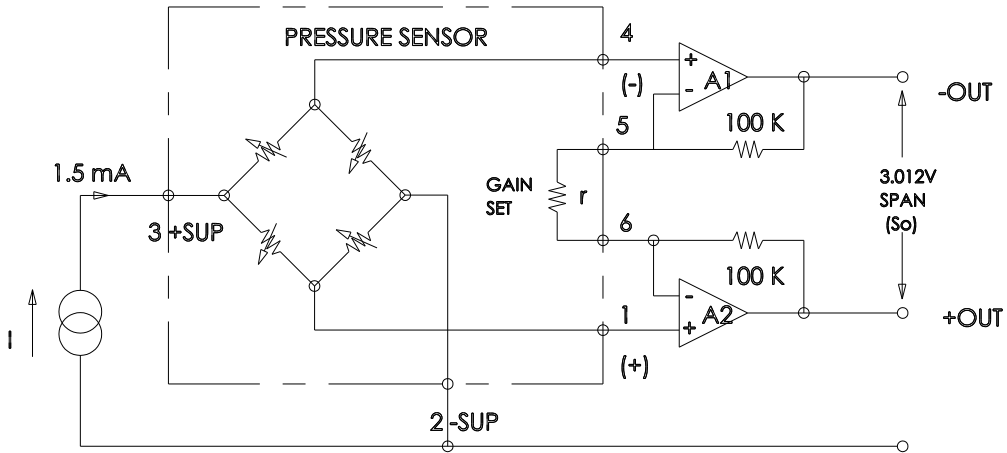


SENSOR PINOUT	
PIN NO.	FUNCTION
1	+OUT
2	-EX
3	+EX
4	-OUT
5	GAIN
6	

FITTING DIMENSIONS			
FITTING TYPE	"A" DIM	"B" DIM	"C" DIM
0	WELDABLE		
1	1/4-18 NPT	.99[25.1]	7/8[22.2] HEX
2	1/8-27 NPT	.96[24.4]	7/8[22.2] HEX
3	7/16-20 UNF	.81[20.6]	7/8[22.2] HEX
4	1/4-18 NPT	.73[18.5]	5/8[15.9] HEX
5	1/4-19 BSP	.76[19.3]	3/4[19.0] HEX
8	1/8-27 NPT	.60[15.2]	5/8[15.9] HEX
9	1/4-19 BSP	.94[23.9]	7/8[22.2] HEX

NOTE : FTG TYPE '4' ASSEMBLY SHOWN  
ALL DIMS ARE FOR REFERENCE

APPLICATION SCHEMATIC



ORDERING INFORMATION

85BC	-	100PG		-	0	C
<b>Model</b>	-	<b>Pressure Type and Range</b>		-	<b>Fitting Type</b>	<b>Electrical</b>
<b>85BC</b>	-	<b>015PG</b> <b>030PG</b> <b>050PG</b> <b>100PG</b> <b>300PG</b>	<b>001BA</b> <b>002BA</b> <b>004BA</b> <b>007BA</b> <b>012BA</b> <b>018BA</b> <b>028BA</b>	-	<b>0 = Weldable (No Thread)</b> <b>1 = 1/4NPT, 7/8 Hex</b> <b>2 = 1/8NPT, 7/8 Hex</b> <b>3 = 7/16UNF, 7/8 Hex</b> <b>4 = 1/4NPT, 5/8 Hex</b> <b>5 = 1/5BSP, 3/4 Hex</b> <b>8 = 1/8NPT, 5/8 Hex</b> <b>9 = 1/4BSP, 7/8Hex</b>	<b>P = Solder Pads</b> <b>R = Ribbon Cable</b> <b>C = Cable w/ Connector</b>

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