

# Model DP86



- 316L SS
- 0 - 100mV Output
- Wet/Wet Differential
- Low Pressure

## DESCRIPTION

The Model DP86 differential pressure sensor is a double-sided, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The DP86 is designed for o-ring mounting. The sensing package utilizes silicone oil to transfer pressure from the two 316L stainless steel diaphragms to a single sensing element.

The Model DP86 is designed for high performance, low pressure applications where differential pressure measurement is required. The stainless steel package makes it suitable for use in liquids and corrosive environments.

## FEATURES

- O-Ring Mount
- -20°C to +125°C Operating Range
- ±0.1% Pressure Non Linearity
- Solid State Reliability
- Low Pressure

## APPLICATIONS

- Level Controls
- Tank Level Measurement
- OEM Equipment
- Corrosive Fluids and Gas Measurement Systems
- Flow Measurements

## STANDARD RANGES

Range	psid
0 to 1	•
0 to 5	•
0 to 15	•
0 to 30	•
0 to 50	•
0 to 100	•
0 to 300	•
0 to 500	•

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## PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA

Ambient Temperature: 25°C (unless otherwise specified)

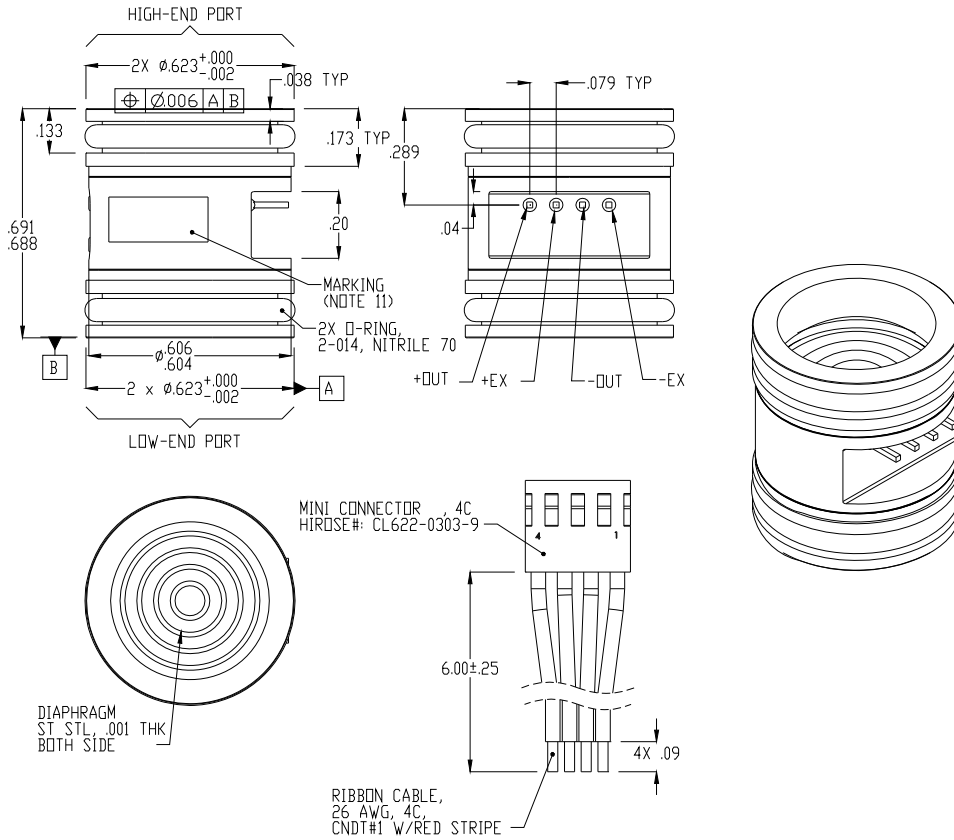
PARAMETERS	001PSI			005PSI			≥015PSI			UNITS	NOTE S
	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX		
Sensitivity	9.0		15.0	12.5	19.5	26.5	13.2	20	26.5	mV/V@FS	
Zero Pressure Output	-4.0		8.0	-6.0		8.0	-6.0		8.0	mV/V	1
Pressure Non Linearity	-0.30		0.30	-0.25		0.25	-0.10		0.10	%Span	2
Pressure Hysteresis	-0.10		0.10	-0.10		0.10	-0.05		0.05	%Span	
Input/Output Resistance	4.4K		6.2K	3.8K	4.4K	5.8K	3.8K	4.4K	5.8K	Ω	
Temp. Coefficient – Span	-2700		-2200	-1450	-1250	-1000	-1450	-1250	-1000	PPM/°C	3
Temp. Coefficient – Offset		1			1			1		μV/V/°C	3
Temp. Coefficient – Resistance	2200	2550	2900	1300	1510	1750	1300	1510	1750	PPM/°C	3
Thermal Hysteresis – Span	-0.25		0.25	-0.25		0.25	-0.25		0.25	%Span	3
Thermal Hysteresis – Offset	-0.25		0.25	-0.25		0.25	-0.25		0.25	%Span	3
Line (Common Mode) Pressure			1000			1000			1000	psi	
Line Pressure Effect on Zero			4.0			0.8			0.5	%Span/1Kpsi	
Pressure Overload			10x			3x			3x	Rated	4
Pressure Burst			12x			4x			4x	Rated	5
Operating Temperature	-20		+85	-20		+125	-20		+125	°C	6
Storage Temperature	-50		+150	-50		+150	-50		+150	°C	6
Vibration (10~2000Hz)			20			20			20	g	
Insulation Resistance (50Vdc)	50M			50M			50M			Ω	7
Output Load Resistance	5M			5M			5M			Ω	8
Supply Voltage		5.0	12.0		5.0	9.5		5	9.5	V	
Supply Current			2.0			1.5			1.5	mA	
Voltage Breakdown			500			500			500	Vrms	9
Endurance (FS @ 25°C)					1M					Cycles	
Media – Reference Port											Compatible with Silicon, Pyrex, Gold, Fluorosilicone RTV and 316L Stainless Steel

### Notes

1. Measured at ambient.
2. Best fit straight line
3. Over the temperature range -20°C to +85°C (0°C to 50°C for 1psi, 0°C to 70°C for 5psi) with respect to 25°C.
4. For high-end port, rated or 1000psi whichever is less; for low-end port, rated or 150psi whichever is less.
5. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
6. Max temp for cable and connector is -20°C to +105°C.
7. Between case and sensing element.
8. Load resistance to reduce measurement errors due to output loading.
9. At dry air.

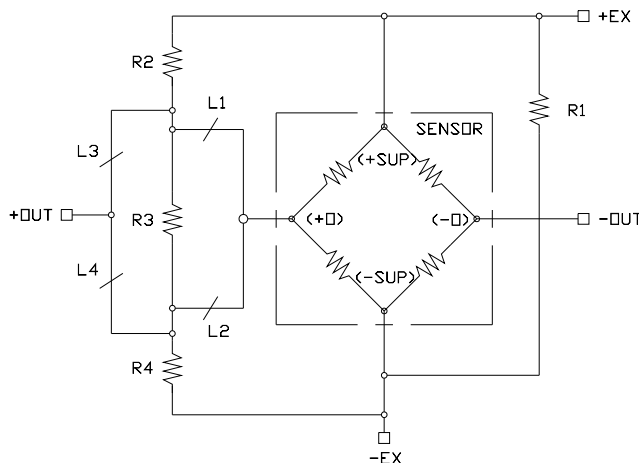
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## DIMENSIONS



## COMPENSATION SCHEMATIC

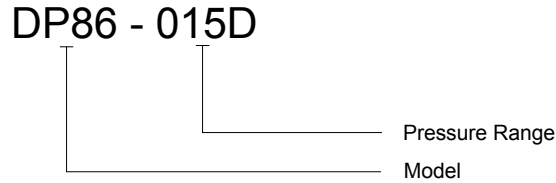
(Sensors can be compensated using the schematic to get improved performance. A calibration data sheet is included with each unit that provides measured values along with resistor values that will achieve the calculated compensated performance.)



COMPENSATION SCHEMATIC

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## ORDERING INFORMATION



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