DP86 Constant Voltage with Cable

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

DESCRIPTION

The DP86 constant voltage with cable differential pressure sensor is a double-sided, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The DP86 constant voltage with cable 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 DP86 constant voltage with cable 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.

Please refer to the DP86, uncompensated, non-silicone oil, constant current and constant voltage (fittings and cable design) for more information on different features of the DP86.

FEATURES

- O-Ring Mount
- Up to -40ºC to +125ºC Operating Range
- Up to ±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	Range	bard
0 to 1	•	0 to .07	•
0 to 5	•	0 to .35	•
0 to 15	•	0 to 001	•
0 to 30	•	0 to 002	•
0 to 50	•	0 to 3.5	•
0 to 100	•	0 to 007	•
0 to 300	•	0 to 020	•
0 to 500	•	0 to 035	•

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PERFORMANCE SPECIFICATIONS

Supply Voltage: 10Vdc
Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	≤005PSI			≥015PSI			UNITS	NOTES
	MIN	TYP	MAX	MIN	TYP	MAX		
Span		1psi: 77, 80, 83 5psi: 98, 100, 102		99	100	101	mV	
Zero Pressure Output	-2.0	0	2.0	-1.0	0	1.0	mV	1
Pressure Non Linearity		1psi: -0.30 to 0.30 5psi: -0.20 to 0.20		-0.10		0.10	%Span	2
Pressure Hysteresis	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02			±0.02		%Span	
Accuracy RMS of NL,HY,RP		±0.6	±1.0		±0.6	±1.0	%Span	
Input Resistance	5500	9000	12500	5500	9000	12500	Ω	
Output Resistance	4000		30000	4000		25000	Ω	
Temperature Error – Span	-1.5		1.5	-1.0		1.0	%Span	3
Temperature Error – Offset	-2.5		2.5	-1.0		1.0	%Span	3
Thermal Hysteresis – Span	-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	%Span	3
Long Term Stability – Span		±0.10			±0.10		%Span/Year	
Long Term Stability – Offset		±0.25			±0.10		%Span/Year	
Line (Common Mode) Pressure			1000			1000	psi	
Line Pressure Effect on Zero		1psi: 4.0 Max 5psi: 0.8 Max				0.5	%Span/1Kpsi	
Supply Voltage		10	14		10	14	V	4
Output Load Resistance	5			5			MΩ	5
Insulation Resistance (50Vdc)	50			50			MΩ	6
Output Noise (10Hz to 1KHz)		1.0			1.0		uV p-p	
Response Time (10% to 90%)		0.1			0.1		ms	
Pressure Overload		1psi: 10X Max 5psi: 3X Max				3X	Rated	7
Pressure Burst		1psi: 12X Max 5psi: 4X Max				4X	Rated	7
Compensated Temperature		1psi: 0°C to 50°C 5psi: 0°C to 70°C		-20		+85	°C	
Operating Temperature		1psi: -40°C to +85°C 5psi: -40°C to +125°C		-40		+125	ºC	8
Storage Temperature	-40		+125	-40		+125	ºC	8
Voltage Breakdown	500V rms @ 50Hz, Leakage Current < 1mA							
Shock	50g, 1msec half sine shock per MIL-STD-202G, Method 213B, Condition A							
Vibration	±20g MIL-STD 810C, Procedure 514.2, Figure 514.2-2, Curve L							
Media – Pressure Port	Liquids and gases compatible with 316/316L Stainless Steel							

Notes

1. Measured at ambient.
2. Best fit straight line
3. Over the compensated temperature range with respect to 25°C.
4. Guarantees output/input ratiometricity.
5. Load resistance to reduce measurement errors due to output loading.
6. Between case and sensing element.
7. For “H” (high-end) port, rated or 1000psi whichever is less. For “L” (low-end) port rated or 150psi whichever is less. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
8. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.

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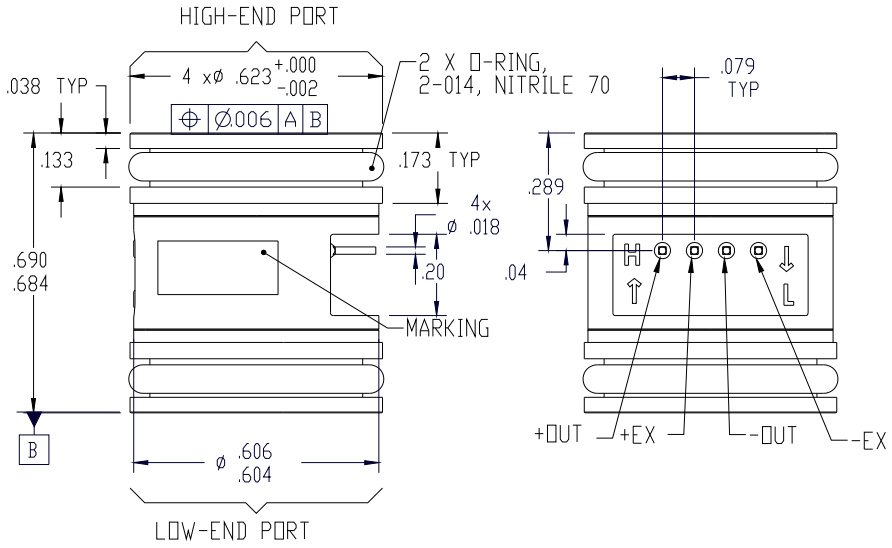
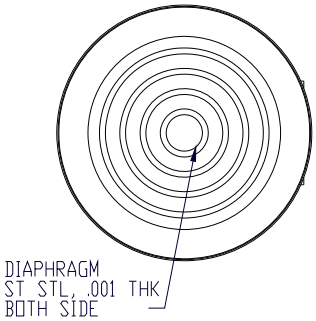
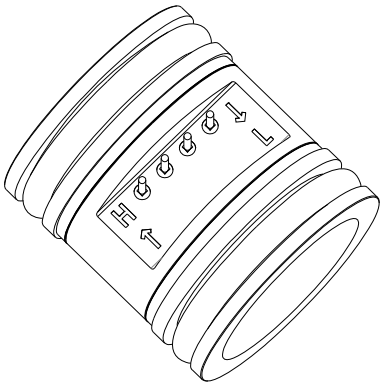
DIMENSIONS

Dimensions are in inches [mm]







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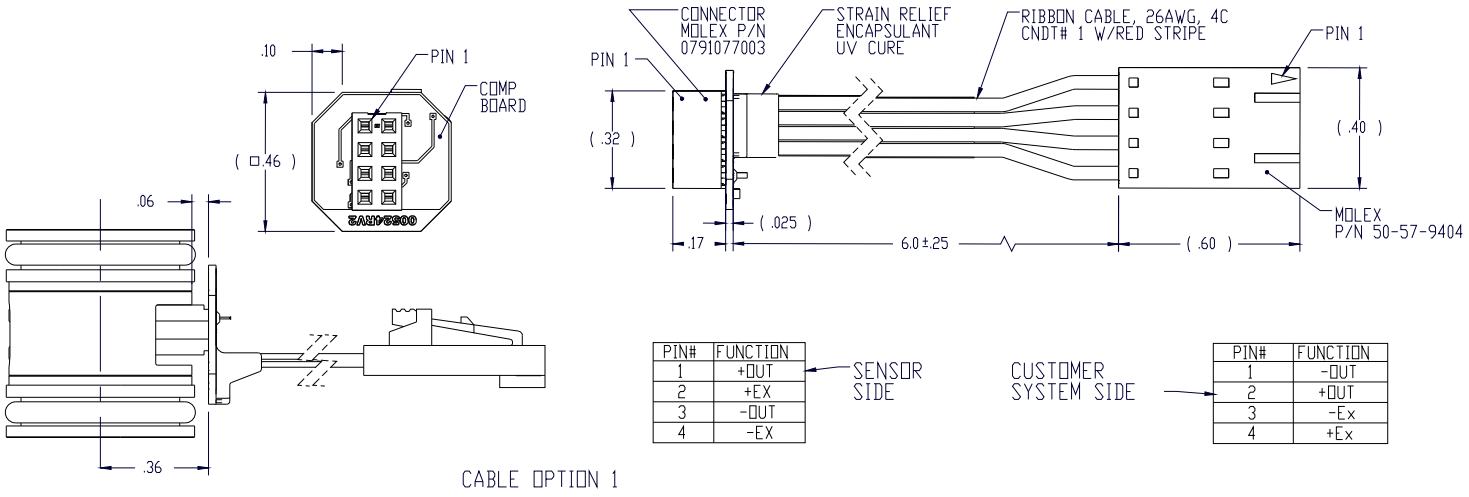
Dimensions are in inches [mm]



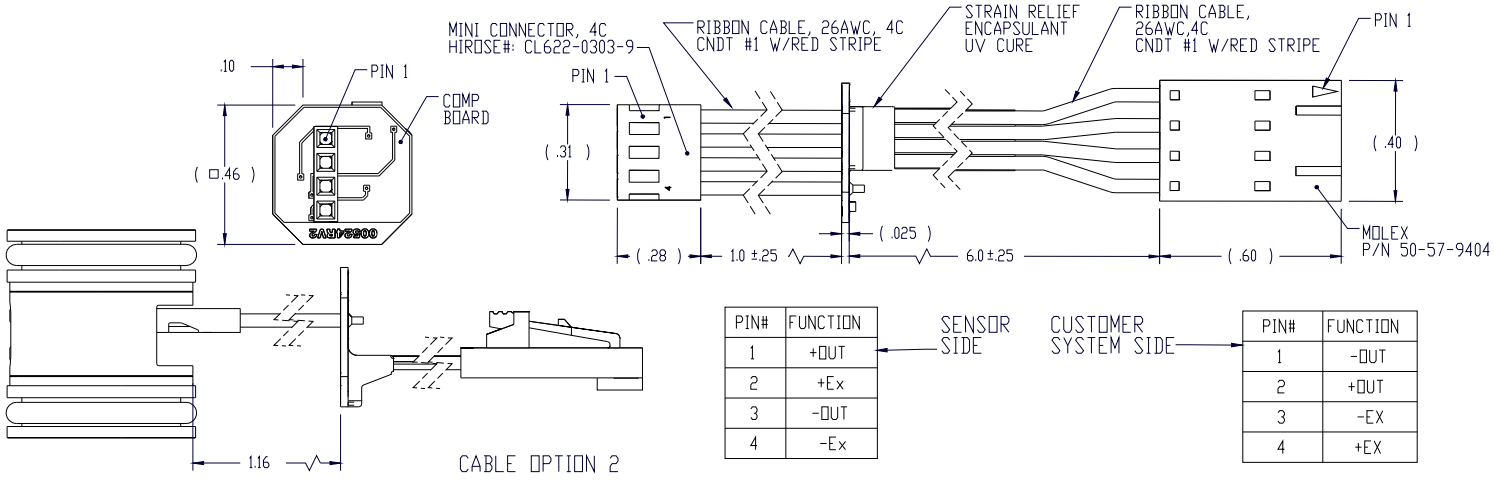
PIN#	FUNCTION
1	+OUT
2	+EX
3	-OUT
4	-EX

SENSOR SIDE

CUSTOMER SYSTEM SIDE

PIN#	FUNCTION
1	-OUT
2	+OUT
3	-Ex
4	+Ex

CABLE OPTION 1



PIN#	FUNCTION
1	+OUT
2	+Ex
3	-OUT
4	-Ex

SENSOR SIDE

CUSTOMER SYSTEM SIDE

PIN#	FUNCTION
1	-OUT
2	+OUT
3	-EX
4	+EX

CABLE OPTION 2

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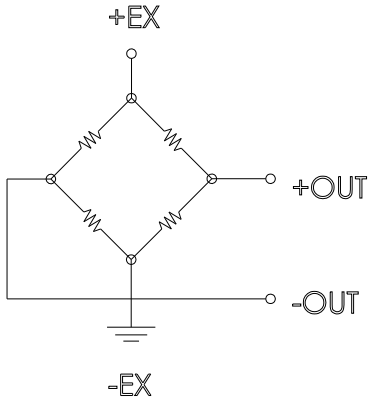
CONNECTIONS



ORDERING INFORMATION

DP86 - 015P - 0 V R - 1

- Cable (1 = No Cable on Pin Side, 2 = 1" Cable on Pin Side)
- Electrical (C = Ribbon Cable with Connector, R = Ribbon Cable)
- Type (V = Constant Voltage, Compensated)
- Fitting (Weldable, No Fitting)
- Unit (P = psi, B = Bar)
- Pressure Range
- Model

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