





DP86

Constant Voltage with Cable

SPECIFICATIONS

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

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 -40°C to +125°C 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	•

PERFORMANCE SPECIFICATIONS

Supply Voltage: 10Vdc

Ambient Temperature: 25°C (unless otherwise specified)

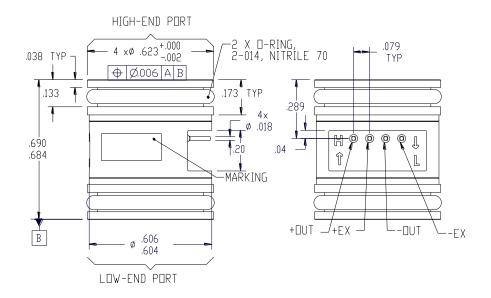
Span MIN TyP MAX MIN TYP MAX Span 1psi: 77, 80, 81 s psi: 93, 100, 102 99 100 101 mV Zero Pressure Output -2.0 0 2.0 -1.0 0 1.0 mV 1 Pressure Non Linearity 1psi: -0.30 to 0.30* ppsi: -0.20 to 0.20* ppsi: -0.2	DADAMETEDO		≤005PSI			≥015PSI		LINITO	NOTES		
Sepsi	PARAMETERS	MIN	TYP	MAX	MIN	TYP	MAX	UNITS	NOTES		
Pressure Non Linearity 1psi: -0.30 to 0.20 bpsi: -0.20 bppi: -0.	Span				99	100	101	mV			
Pressure Non Linearity 5psi: -0.20 to 0.2v -0.10 -0.00 ≥0.00 0.00 %Span 2 Pressure Hysteresis -0.10 ±0.02 0.10 -0.05 ±0.02 0.05 %Span Repeatability ±0.06 ±1.0 ±0.6 ±1.0 %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 Cutput Resistance 4000 30000 4000 25000 Ω Ω Temperature Error - Offset -2.5 1.5 -1.0 1.0 %Span 3 Temperature Error - Offset -2.5 ±0.05 0.25 ±0.05 0.25 %Span 3 Thermal Hysteresis - Span -0.25 ±0.05 0.25 ±0.05 0.25 %Span 3 Long Term Stability - Span ±0.10 ************************************	Zero Pressure Output	-2.0	0	2.0	-1.0	0	1.0	mV	1		
Repeatability	Pressure Non Linearity	•			-0.10		0.10	%Span	2		
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 ±0.05 0.25 \$%Span 3 Long Term Stability - Span ±0.10 0.25 ±0.10 %Span/Year 1 Long Term Stability - Offset ±0.25 ±0.10 0.5 %Span/Year Line (Common Mode) Pressure ±0.25 ±0.10 0.0 %Span/Year Line (Pressure Effect on Zero 1psi: 40.0 Max 5psi: 0.8 Max 0.5 %Span/IKpsi Supply Voltage 10 14 10 14 V 4 Output Noise (10/Lt to 1KHz)	Pressure Hysteresis	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span			
Input Resistance	Repeatability		±0.02			±0.02		%Span			
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 ±0.05 0.25 ±0.05 0.25 %Span 3 Long Term Stability – Span ±0.10 ±0.10 %Span/Year	Accuracy RMS of NL,HY,RP		±0.6	±1.0		±0.6	±1.0	%Span			
Temperature Error – Span -1.5 1.5 -1.0 1.0 %Span 3	Input Resistance	5500	9000	12500	5500	9000	12500	Ω			
Temperature Error - Offset -2.5 2.5 -1.0 1.0 %Span 3	Output Resistance				4000		25000	Ω			
Thermal Hysteresis - Span -0.25 ±0.05 ±0.05 ±	Temperature Error – Span	-1.5		1.5	-1.0		1.0	%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 ±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 (50Vdc) 50 50 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: 10X Max 5psi: 4X Max 5psi: 4X Max 5psi: 4X Max 4X Rated 7 Compensated Temperature 1psi: 0°C to 50°C 5psi: 0°C to 70°C 5psi: 0°C to 70°C 5psi: 0°C to 70°C 7ps	Temperature Error – Offset	-2.5		2.5	-1.0		1.0	%Span	3		
Long Term Stability – Span ±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 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 20 +85 °C Operating Temperature 1psi: -40°C to +85°C 5psi: -40°C to +85°C 5psi: -40°C to +125°C -40 +125 °C 8 Storage Temperature -40 +125 <td< td=""><td>Thermal Hysteresis – Span</td><td>-0.25</td><td>±0.05</td><td>0.25</td><td>-0.25</td><td>±0.05</td><td>0.25</td><td>%Span</td><td>3</td></td<>	Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	3		
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/1 Kpsi 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 γ-ρ 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 As 5psi: 4X Max 4X Rated 7 Compensated Temperature 1psi: 0°C to 50°C 5psi: 0°C to 70°C 20 +85 °C 8 Storage Temperature 40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	3		
Line (Common Mode) Pressure 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 ∨ 4 Output Load Resistance (50Vdc) 50 50 MΩ 5 Insulation Resistance (50Vdc) 50 50 MΩ 6 Output Noise (10Hz to 1KHz) 1.0 1.0 uV γ-p Response Time (10% to 90%) 0.1 0.1 ms Pressure Overload 1psi: 10X Max 5psi: 3X Max 5psi: 3X Max 5psi: 3X Max 5psi: 4X Max 3X Rated 7 Pressure Burst 1psi: 12X Max 5psi: 4X Max 5psi: 4X Max 4X Rated 7 Compensated Temperature 1psi: 0°C to 50°C 5psi: 0°C to 70°C	Long Term Stability - Span		±0.10			±0.10		%Span/Year			
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 γ-γ 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 8 Operating Temperature 1psi: -40°C to +125°C -40 +125 °C 8 Storage Temperature -40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Long Term Stability - Offset		±0.25			±0.10		%Span/Year			
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 °C 8 Storage Temperature -40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Line (Common Mode) Pressure			1000			1000	psi			
Output Load Resistance 5 MΩ 5 Insulation Resistance (50Vdc) 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 +85°C 5psi: -40°C to +125°C -40 +125 °C 8 Storage Temperature -40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Line Pressure Effect on Zero						0.5	%Span/1Kpsi			
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	Supply Voltage		10	14		10	14	V	4		
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 °C 8 Storage Temperature -40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Output Load Resistance	5			5			ΜΩ	5		
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 °C 8 Storage Temperature -40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Insulation Resistance (50Vdc)	50			50			ΜΩ	6		
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 °C 8 Storage Temperature -40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Output Noise (10Hz to 1KHz)		1.0			1.0		uV p-p			
Pressure Overload Spsi: 3X Max 3X Rated 7	Response Time (10% to 90%)		0.1			0.1		ms			
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 °C 8 Storage Temperature -40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Pressure Overload		•				зх	Rated	7		
Compensated Temperature 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 °C 8 Storage Temperature -40 +125 -40 +125 °C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Pressure Burst	1	psi: 12X Max				4X	Rated	7		
Operating Temperature -40°C to +125°C -40°C to +125°C 8 Storage Temperature -40°C to +125°C -40°C to +125°C 8 Voltage Breakdown 500V rms @ 50Hz, Leakage Current < 1mA	Compensated Temperature				-20		+85	°C			
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	Operating Temperature				-40		+125	ōC	8		
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	Storage Temperature	-			-40		+125	ōC	8		
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	Voltage Breakdown	500V rms @ 50Hz, Leakage Current < 1mA									
Vibration ±20g MIL-STD 810C, Procedure 514.2, Figure 514.2-2, Curve L	Shock	-									
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	Media – Pressure Port	•			. •	•					

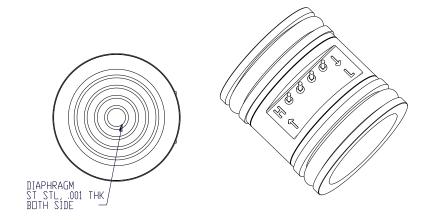
Notes

- 1. Measured at ambient.
- Best fit straight line
- 3. Over the compensated temperature range with respect to 25°C.
- 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.

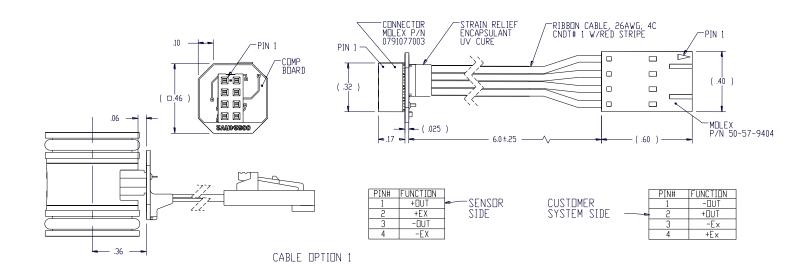
DIMENSIONS

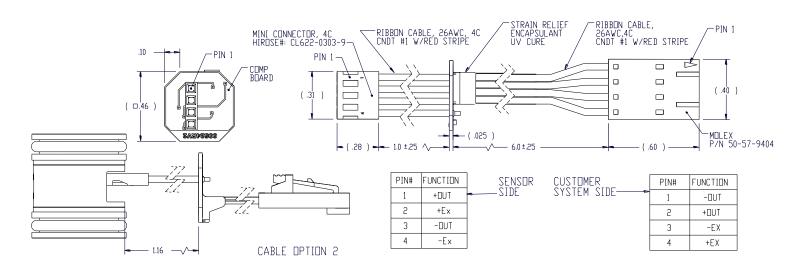
Dimensions are in inches [mm]



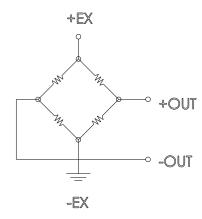


Dimensions are in inches [mm]

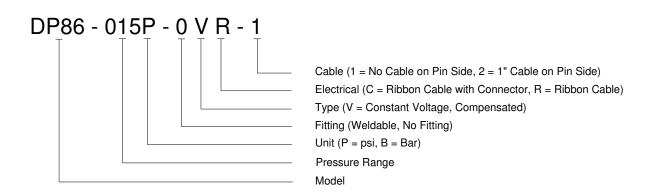




CONNECTIONS



ORDERING INFORMATION



NORTH AMERICA

Measurement Specialties, Inc., a TE Connectivity Company Tel: 800-522-6752 Email: customercare.frmt@te.com

EUROPE

Measurement Specialties (Europe), Ltd., a TE Connectivity Company Tel: 800-440-5100 Email: <u>customercare.lcsb@te.com</u>

ASIA

Measurement Specialties (China), Ltd., a TE Connectivity Company Tel: 0400-820-6015 Email: <u>customercare.shzn@te.com</u>

TE.com/sensorsolutions

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