AMPLIFIED PRESSURE SENSORS

-10 cm H₂O to120 cm H₂O Pressure Sensor



Features

- 4 Volt ratiometric output
- Temperature Compensated
- Calibrated Zero and Span

Applications

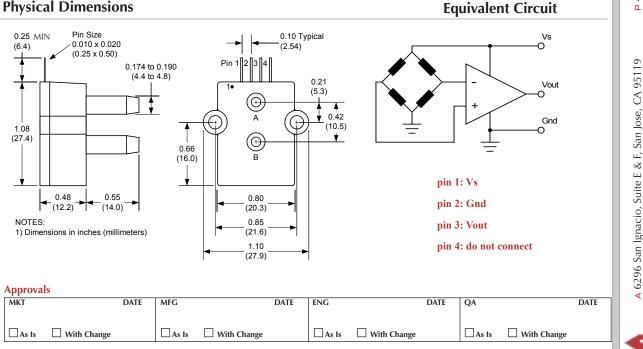
- Medical Instrumentation
- Respiratory Breathing

General Description

This Amplified Output pressure sensor is based upon a proprietary technology to compensate all errors. This model provides a calibrated amplified output with superior output characteristics. Output characteristics are tested at pressure and temperature and then digitally compensated using a proprietary 3D mapping scheme. In addition the sensor utilizes a silicon, micromachined, stress concentration enhanced structure to provide a very linear output to measured pressure.

These calibrated and temperature compensated sensors give an accurate and stable output over a wide temperature range. This series is intended for use with non-corrosive, non-ionic working fluids such as air, dry gases and the like.

The output of the device is ratiometric to the supply voltage over a supply voltage range of 4.5 to 5.5 volts.



Physical Dimensions

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Pressure Sensor Characteristics Maximum Ratings		Environmental Specifications		
Supply Supply Voltage VS	+4.5 to +5.5 Vdc	Temperature Ranges		
Common-mode pressure	10 psig	Compensated	see specification	
Lead Temperature (soldering 2-4 sec.)	250°C	Operating	-25 to 85° C	
(soldering 2-4 sec.)		Storage	-40 to 125° C	
		Humidity Limits	0 to 95% RH	
Standard Process Pangos			(non condensing)	

Standard Pressure Ranges

Part Number	Operating Pressure	Compensated Range	Proof Pressure	Burst Pressure
120 CMH2O-D-4V	-10 to 120 cm H2O	5 to 50° C	300 cmH2O	600 cmH2O
120 CMH2O-D-4V-PRIME	-10 to 120 cm H2O	-25 to 85° C	300 cmH2O	600 cmH2O

Performance Characteristics for 120 CMH2O-D-4V

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, pressure	-10		120	cmH2O
Output Voltage, @120 cmH2O	4.40	4.5	4.6	volt
Output Voltage @ zero pressure	0.30	0.35	0.40	volt
Output Voltage @-10 cmH2O	0.23	0.28	0.33	volt
Offset Temperature Shift (5°C-50°C), note 2			±1.0	%span
Linearity, hysteresis error, note 4		0.05	±0.25	%fs
Span Shift (5°C-50°C), note 2			±1.0	%span

Performance Characteristics for 120 CMH2O-D-4V-PRIME

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, pressure	-10		120	cmH2O
Output Voltage, @120 cmH2O	4.40	4.5	4.6	volt
Output Voltage @ zero pressure	0.30	0.35	0.40	volt
Output Voltage @-10 cmH2O	0.23	0.28	0.33	volt
Offset Temperature Shift (-25 to 85°C), note 2			±1.0	%span
Linearity, hysteresis error, note 4		0.05	±0.25	%fs
Span Shift (-25 to 85°C), note 2			±1.0	%span

Specification Notes

NOTE 1: ALL PARAMETERS ARE MEASURED AT 5.0 VOLT EXCITATION, FOR THE NOMINAL FULL SCALE PRESSURE AND ROOM TEMPERATURE UNLESS OTHERWISE SPECIFIED. PRESSURE MEASUREMENTS ARE WITH POSITIVE PRESSURE APPLIED TO PORT B.

- NOTE 2: SHIFT IS RELATIVE TO 25°C.
- NOTE 3: SHIFT IS WITHIN THE FIRST HOUR OF EXCITATION APPLIED TO THE DEVICE.
- NOTE 4: MEASURED AT ONE-HALF FULL SCALE RATED PRESSURE USING BEST STRAIGHT LINE CURVE FIT.
- Note 5: The voltage added to the offset voltage at full scale pressure. Nominally the output voltage range is 0.35V to 4.5VVOLTS FOR MINUS TO PLUS FULL SCALE PRESSURE.

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