

Amplified Pressure Sensors

4 Inch Water Pressure Sensors



Features

- 0 to 4 Inch Water Pressure Ranges
- Ratiometric 4V Output
- Temperature Compensated
- Calibrated Zero and Span

Applications

- Medical Instrumentation
- Environmental Controls
- HVAC

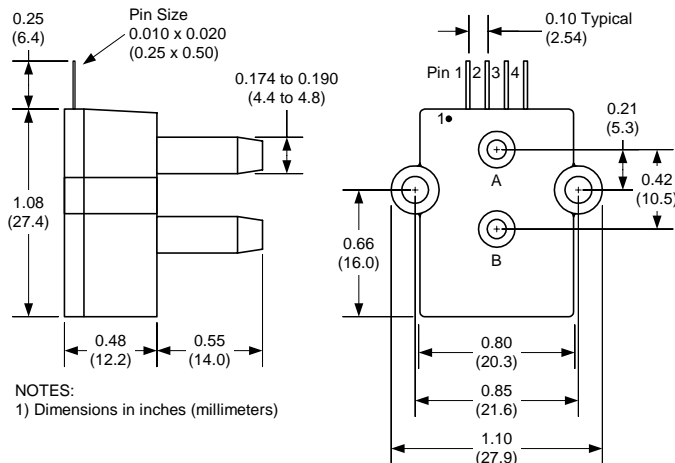
General Description

The Amplified line of middle pressure sensors is based upon a proprietary technology to reduce errors. This model provides a ratiometric 4-volt output with superior output characteristics. The sensor housing has been designed specifically to reduce errors associated with parasitic stress and strain. 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. Each sensor is internally compensated using an ASIC compensation technique. 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 and operation from any D.C. supply voltage up to +7 V is acceptable.

Physical Dimensions



- pin 1: Vsupply
- pin 2: Common
- pin 3: Voutput
- pin 4: do not connect



Pressure Sensor Characteristics Maximum Ratings

Supply Voltage V_S	+3 to +7 Vdc
Common-mode pressure	10 psig
Lead Temperature (soldering 2-4 sec.)	250°C

Environmental Specifications

Temperature Ranges	
Compensated	5 to 50° C
Operating	-25 to 85° C
Storage	-40 to 125° C
Humidity Limits	0 to 95% RH (non condensing)

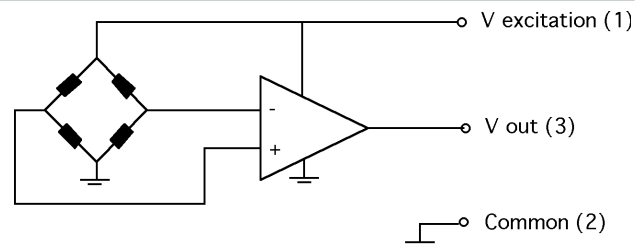
Performance Characteristics for 4 INCH-D-4V

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		±4.0		" H ₂ O
Output Span, note 5	±1.90	±2.0	±2.10	volt
Offset Voltage @ zero differential pressure	2.15	2.25	2.35	volt
Offset Temperature Shift (5°C-50°C), note 2			±40	mvolt
Linearity, hysteresis error, note 4		0.05	0.25	%fs
Full Scale Shift (5°C-50°C), note 2			±2	%span

Performance Characteristics for 4 INCH-G-4V

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, gage pressure		4.0		" H ₂ O
Output Span, note 5	3.90	4.0	4.10	volt
Offset Voltage @ zero pressure	0.15	0.25	0.35	volt
Offset Temperature Shift (5°C-50°C), note 2			±40	mvolt
Linearity, hysteresis error, note 4		0.05	0.25	%fs
Full Scale Shift (5°C-50°C), note 2			±2	%span

Equivalent Circuit



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 0.25 TO 4.25 VOLTS FOR MINUS TO PLUS FULL SCALE PRESSURE.

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