

Amplified VeryLow Pressure Sensors

AMPLIFIED Pressure Sensors



Features

- 0.25 and 0.50 In H₂O Pressure Ranges
- Ratiometric 4V Output
- Temperature Compensated
- Calibrated Zero and Span

Applications

- Medical Breathing
- HVAC

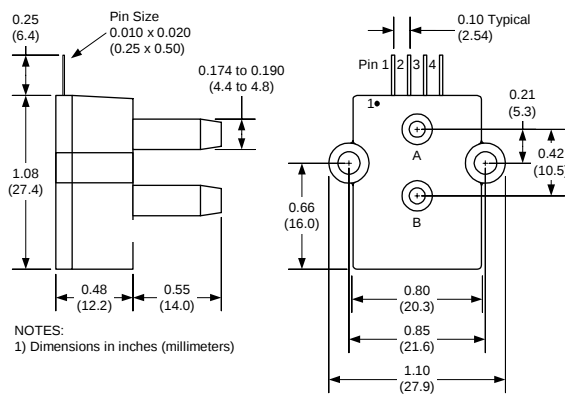
General Description (generic product)

The Amplified line of low pressure sensors is based upon a proprietary technology to reduce all output offset or common mode errors. This model provides a ratiometric 4-volt output with superior output offset characteristics. Output offset errors due to change in temperature, stability to warm-up, stability to long time period, and position sensitivity are all significantly reduced when compared to conventional compensation methods. 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.

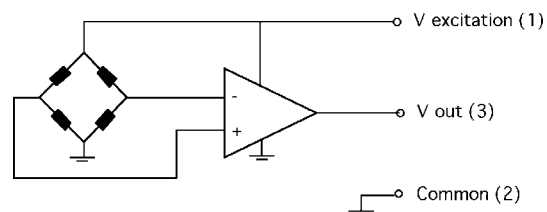
The output of the device is ratiometric to the supply voltage over a supply voltage range of 4.5 to 5.5 volts.

Physical Dimensions



pin 1: V_{supply}
pin 2: Common
pin 3: V_{output}
pin 4: do not connect

Equivalent Circuit



Pressure Sensor Ratings

Supply Voltage, Vs	+4.5 to +5.5 Vdc
Common-mode pressure	-10 to +10 psig
Lead Temperature, max (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: 0.25 INCH-D-4V

Parameter, NOTE 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		±0.25		"H ₂ O
Output Span, NOTE 5	±1.80	±20	±2.20	volt
Offset Voltage @ zero differential pressure	2.00	2.25	2.50	volt
Offset Temperature Shift (5°C-50°C), NOTE 2			±50	mvolt
Offset Warm-up Shift, NOTE 3		±20	±50	mvolt
Offset Position Sensitivity (±1g)		±40	±100	mvolt
Offset Long Term Drift (one year)		±20	±50	mvolt
Linearity, hysteresis error, NOTE 4		0.05	0.25	%fs
Span Shift (5°C-50°C), NOTE 2			±4	%span

Performance Characteristics for: 0.5 INCH-G-4V

Parameter, NOTE 1	Minimum	Nominal	Maximum	Units
Operating Range, gage pressure		0.5		"H ₂ O
Output Span, NOTE 5	3.80	4.0	4.20	volt
Offset Voltage @ zero gage pressure	0.10	0.25	0.40	volt
Offset Temperature Shift (5°C-50°C), NOTE 2			±50	mvolt
Offset Warm-up Shift, NOTE 3		±20	±50	mvolt
Offset Position Sensitivity (±1g)		±40	±100	mvolt
Offset Long Term Drift (one year)		±20	±50	mvolt
Linearity, hysteresis error, NOTE 4		0.05	0.25	%fs
Span Shift (5°C-50°C), NOTE 2			±4	%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 0.25 TO 4.25 VOLTS FOR MINUS TO PLUS FULL SCALE PRESSURE.

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