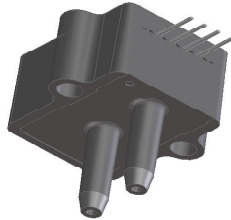


Barometric Pressure Sensors

Barometric Pressure Sensors

600 to 1,100 mbar Barometric Pressure



Options:

- Ratiometric Output
- Fixed 4V Output with internal Voltage Reference
- Temperature Compensated (-25C to 85C, -40C to 125C, 5 C to 50C)
- Calibrated Zero and Span

Applications

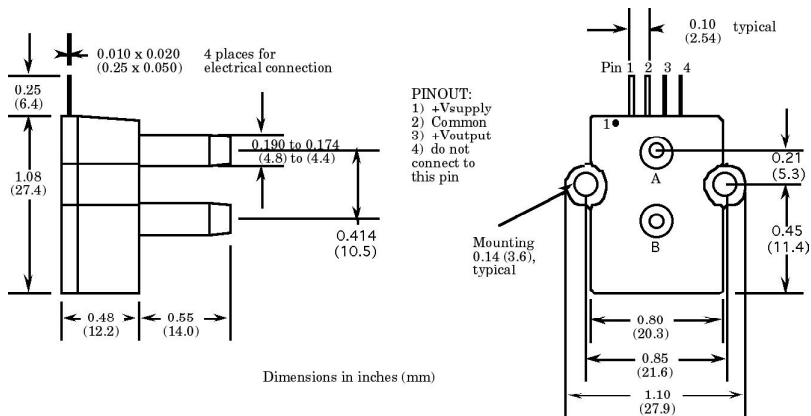
- Medical Instrumentation
- Environmental Controls
- Chemical Analysis

General Description

These Barometric pressure sensors are based upon a proprietary package technology to reduce errors. This model provides a fixed 4-volt output with superior output characteristics. The sensor housing has been designed specifically to reduce package induced parasitic stress and strain. In addition the sensor utilizes a silicon, micromachined (MEMS) structure to provide a very linear output to measured pressure. The sensor embodies a vacuum reference.

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.

Physical Dimensions



Pressure Sensor Ratings

Lead Temperature, max (soldering 2-4 sec.)	250°C
Burst Pressure	60 psi

Environmental Specifications

Temperature Ranges	
Compensated	see below
Operating	-40 to 125° C
Storage	-40 to 125° C
Humidity Limits	0 to 95% RH (non condensing)

Standard Pressure Ranges

Part Number	Operating Pressure	Supply Voltage	Compensated Temperature Range
BARO-A-4V	600 - 1100 mbar	4.5 to 5.5 V	5C to 50C
BARO-A-4V-PRIME	600 - 1100 mbar	4.5 to 5.5 V	-25C to 85C
BARO-A-4V-MIL	600 - 1100 mbar	4.5 to 5.5 V	-40C to 125C
BARO-A-4V-PRIME-REF	600 - 1100 mbar	5.5 to 16 V	-25C to 85C

Performance Characteristics for BARO-A-4V

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, absolute pressure	600		1100	mBar
Output Voltage @ 1,100 mbar	4.20	4.25	4.30	volt
Output Voltage @ 600 mbar	0.20	0.25	0.30	volt
Offset Temperature Shift (5°C to 50°C), note 2			±20	mvolt
Linearity, hysteresis error, note 4		0.05	0.25	%fs
Span Shift (5°C to 50°C), note 2			±1	%span

Performance Characteristics for BARO-A-4V-PRIME

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, absolute pressure	600		1100	mBar
Output Voltage @ 1,100 mbar	4.20	4.25	4.30	volt
Output Voltage @ 600 mbar	0.20	0.25	0.30	volt
Offset Temperature Shift (-25°C to 85°C), note 2			±20	mvolt
Linearity, hysteresis error, note 4		0.05	0.25	%fs
Span Shift (-25°C to 85°C), note 2			±1	%span

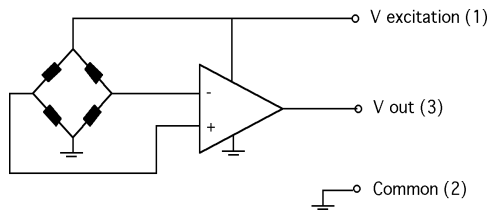
Performance Characteristics for BARO-A-4V-MIL

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, absolute pressure	600		1100	mBar
Output Voltage @ 1,100 mbar	4.20	4.25	4.30	volt
Output Voltage @ 600 mbar	0.20	0.25	0.30	volt
Offset Temperature Shift (-40°C to 125°C), note 2			±20	mvolt
Linearity, hysteresis error, note 4		0.05	0.25	%fs
Span Shift (-40°C to 125°C), note 2			±1	% span

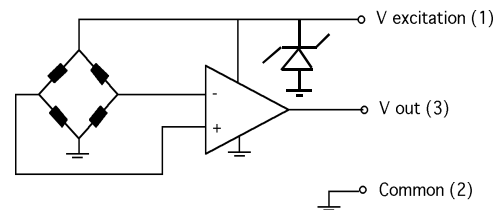
Performance Characteristics for BARO-A-4V-PRIME-REF

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, absolute pressure	600		1100	mBar
Output Voltage @ 1,100 mbar	4.20	4.25	4.30	volt
Output Voltage @ 600 mbar	0.20	0.25	0.30	volt
Offset Temperature Shift (-25°C to 85°C), note 2			±20	mvolt
Linearity, hysteresis error, note 4		0.05	0.25	%fs
Span Shift (-25°C to 85°C), note 2			±1	% span

Equivalent Circuit



Equivalent Circuit with Internal Voltage Reference



Specification Notes

NOTE 1: ALL PARAMETERS ARE MEASURED AT 5.0 VOLT EXCITATION FOR RATIOMETRIC PARTS AND 12.0 FOR PARTS WITH INTERNAL REFERENCE, FOR THE NOMINAL FULL SCALE PRESSURE AND ROOM TEMPERATURE UNLESS OTHERWISE SPECIFIED.

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.

All Sensors reserves the right to make changes to any products herein. All Sensors does not assume any liability arising out of the application or use of any product or circuit described herein, neither does it convey any license under its patent rights nor the rights of others.