

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

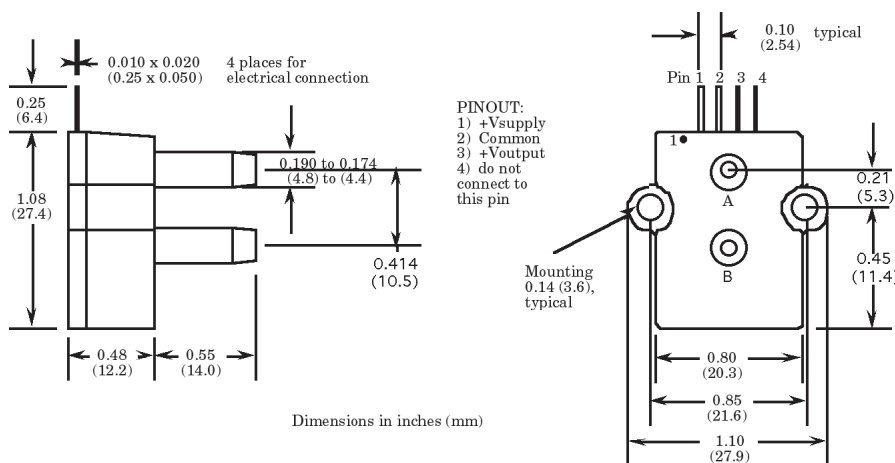
- Medical Instrumentation
- Environmental Controls
- Chemical Analysis

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

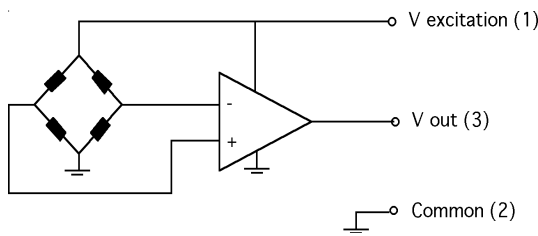
Performance Characteristics for BARO-A-4V-MIL

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

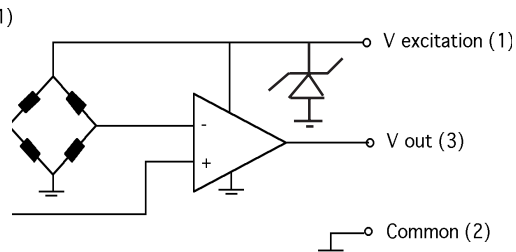
Performance Characteristics for BARO-A-4V-PRIME-REF

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 RATIO-METRIC 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.

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