

# Barometric Amplified Pressure Sensors

600 to 1,100 mbar Barometric Pressure Sensor

**Preliminary**

## Features

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- Barometric Pressure Range
- Temperature Compensated
- Calibrated Zero and Span

## Applications

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- Medical Instrumentation
- Environmental Monitoring
- Altimeters
- Chemical Analysis

## General Description

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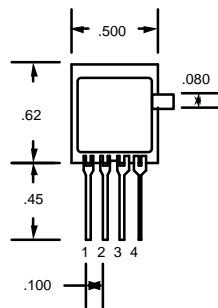
The Miniature Amplified Output pressure sensors is based upon a proprietary technology to reduce all output offset or common mode errors. This model provides a calibrated amplified output with superior output offset characteristics. Output offset errors due to change in temperature, stability to warm-up, 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 and operation from any D.C. supply voltage between 4.5 and 5.5 volts.

## Physical Dimensions

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### Pressure Sensor Characteristics Maximum Ratings

<b>Supply Voltage VS</b>	+4.5 to +75.5Vdc
<b>Lead Temperature (soldering 2-4 sec.)</b>	250°C

### Environmental Specifications

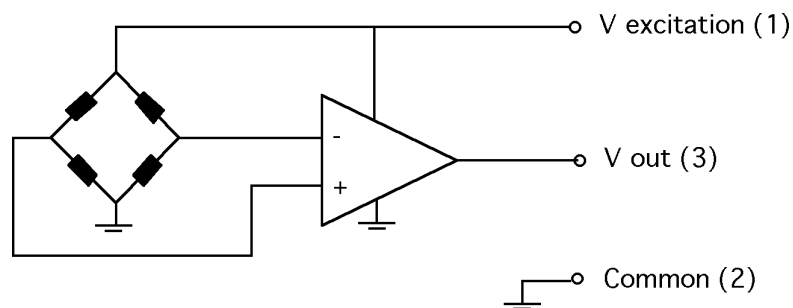
<b>Temperature Ranges</b>	
<b>Compensated</b>	see specification
<b>Operating</b>	-25 to 85° C
<b>Storage</b>	-40 to 125° C
<b>Humidity Limits</b>	0 to 95% RH (non condensing)

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### Standard Pressure Ranges

Part Number	Operating Pressure	Compensated Range
BARO-A-4V-MINI	600 to 1,100 mbar	5 to 50° C
BARO-A-4V-MINI-PRIME	600 to 1,100 mbar	-25 to 85° C
BARO-A-4V-MINI-MIL	600 to 1,100 mbar	-40 to 125° C

### Equivalent Circuit



### Performance Characteristics for BARO-A-4V-MINI

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-MINI-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-MINI-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

#### 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 THE FRONT PORT.

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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