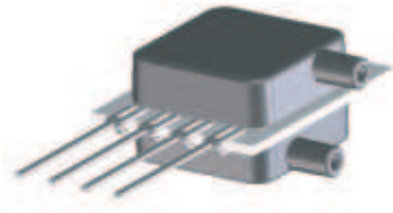


# BAROMETRIC AMPLIFIED PRESSURE SENSORS

600 to 1,100 mbar Barometric Pressure Sensor



## Features

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

## Applications

- Medical Instrumentation
- Environmental Monitoring
- Altimeters
- Chemical Analysis

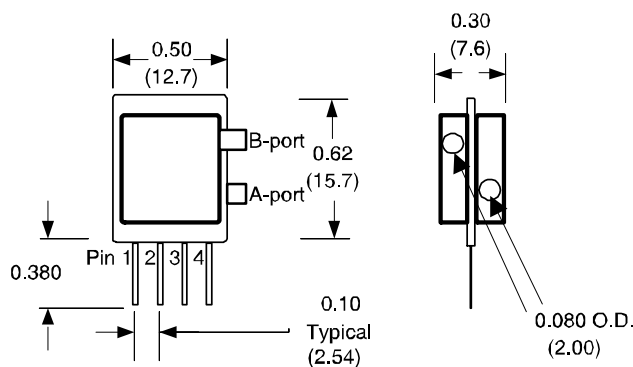
## General Description

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



## Approvals

| MKT   | DATE | MFG   | DATE | ENG   | DATE | QA  | DATE |
|---|------|---|------|---|------|---|------|
| <input type="checkbox"/> As Is <input type="checkbox"/> With Change |      | <input type="checkbox"/> As Is <input type="checkbox"/> With Change |      | <input type="checkbox"/> As Is <input type="checkbox"/> With Change |      | <input type="checkbox"/> As Is <input type="checkbox"/> With Change |      |

### Pressure Sensor Characteristics Maximum Ratings

|                                       |                 |
|---------------------------------------|-----------------|
| Supply Voltage $V_S$                  | +4.5 to +5.5Vdc |
| Lead Temperature (soldering 2-4 sec.) | 250°C           |

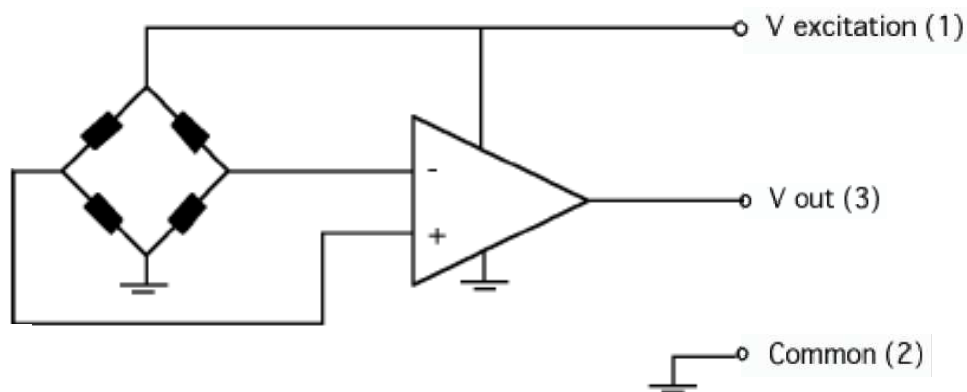
### Environmental Specifications

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

### 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                     | 4.15    | 4.25    | 4.35    | volt  |
| Output Voltage @ 600 mbar                      | 0.15    | 0.25    | 0.35    | volt  |
| Offset Temperature Shift (5°C to 50°C), note 2 |         |         | ±20     | mvolt |
| Linearity, hysteresis error, note 4            |         | 0.05    | 0.50    | %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                       | 4.15    | 4.25    | 4.35    | volt  |
| Output Voltage @ 600 mbar                        | 0.15    | 0.25    | 0.35    | volt  |
| Offset Temperature Shift (-25°C to 85°C), note 2 |         |         | ±20     | mvolt |
| Linearity, hysteresis error, note 4              |         | 0.05    | 0.50    | %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                        | 4.15    | 4.25    | 4.35    | volt  |
| Output Voltage @ 600 mbar                         | 0.15    | 0.25    | 0.35    | volt  |
| Offset Temperature Shift (-40°C to 125°C), note 2 |         |         | ±20     | mvolt |
| Linearity, hysteresis error, note 4               |         | 0.05    | 0.50    | %fs   |
| Span Shift (-40°C to 125°C), note 3               |         |         | ±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 B-PORT.

NOTE 2: SHIFT IS RELATIVE TO 25°C.

NOTE 3: MEASURED AT ONE-HALF FULL SCALE RATED PRESSURE USING BEST STRAIGHT LINE CURVE FIT.

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