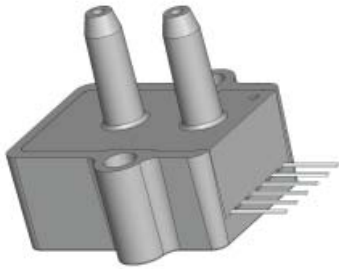


MILLIVOLT OUTPUT PRESSURE SENSORS

Low Pressure (0.5" H₂O to 30" H₂O) Sensors



Features

- 0 to 0.5" H₂O to 0 to 30" H₂O Pressure Ranges
- Temperature Compensated
- Calibrated Zero and Span

Applications

- Medical Instrumentation
- Environmental Controls
- HVAC

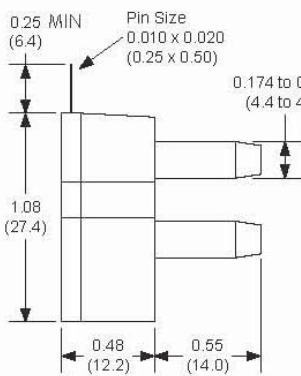
General Description

The Millivolt Output pressure sensor is based upon a proprietary technology to reduce all output offset or common mode errors. This model provides a calibrated millivolt 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.

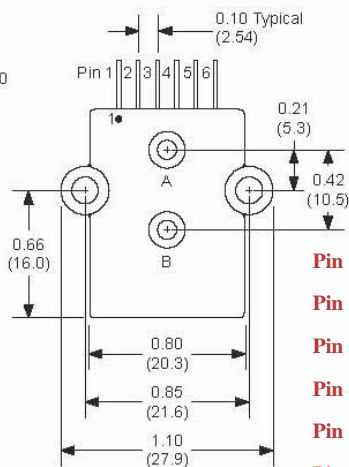
These calibrated and temperature compensated sensors give an accurate and stable output over a wide temperature range. This series is intended for use with non-corrosive, non-ionic working fluids such as air, dry gases and the like.

The output of the device is ratiometric to the supply voltage and operation from any D.C. supply voltage up to +16 V is acceptable.

Physical Dimensions

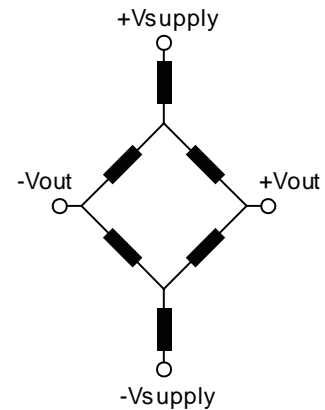


NOTES:
1) Dimensions in inches (millimeters)



- Pin 1: N/C**
- Pin 2: +V supply**
- Pin 3: +Voutput**
- Pin 4: -Vsupply**
- Pin 5: -Voutput**
- Pin 6: N/C**

Equivalent Circuit



Input Resistance 4.5 k ohm
Output Resistance 1.5 k ohm

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 | |

ALL SENSORS

DS-0091 REV C

Pressure Sensor Ratings

| | |
|---|-----------------|
| Supply Voltage Vs, max | 16 Vdc |
| Common-mode pressure | -10 to +10 psig |
| Lead Temperature, max (soldering 2-4 sec.) | 270°C |

Environmental Specifications

| | |
|---------------------------|---------------------------------|
| Temperature Ranges | |
| Compensated | 0 to 50(70)° C |
| 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 | Nominal Span | Proof Pressure | Burst Pressure |
|---------------|--------------------|--------------|----------------|----------------|
| 0.5 INCH-D-MV | 0 - 0.5" H2O | 10mV | 100 "H2O | 200 "H2O |
| 1 INCH-D-MV | 0 - 1" H2O | 10 mV | 100 "H2O | 200 "H2O |
| 2 INCH-D-MV | 0 - 2" H2O | 10mv | 100 "H2O | 200 "H2O |
| 5 INCH-D-MV | 0 - 5" H2O | 20 mV | 200 "H2O | 300 "H2O |
| 10 INCH-D-MV | 0 - 10" H2O | 20 mV | 200 "H2O | 300 "H2O |
| 20 INCH-D-MV | 0 - 20" H2O | 20 mV | 200 "H2O | 500 "H2O |
| 30 INCH-D-MV | 0 - 30" H2O | 20 mV | 200 "H2O | 800 "H2O |

Performance Characteristics for 0.5 INCH-D-MV

| Parameter, note 1 | Minimum | Nominal | Maximum | Units |
|---|---------|---------|---------|-------|
| Operating Range, differential pressure | -- | 0.5 | -- | "H2O |
| Output Span, @ 0.5"H2O, note 5 | 9.0 | 10.0 | 11.0 | mV |
| Offset Voltage @ zero differential pressure | -- | -- | ±500 | uV |
| Offset Temperature Shift (0°C-50°C), note 2 | -- | -- | ±250 | uV |
| Offset Warm-up Shift, note 3 | -- | -- | ±100 | uV |
| Offset Position Sensitivity (1g) | -- | -- | ±5.0 | uV |
| Offset Long Term Drift (one year) | -- | -- | ±200 | uV |
| Linearity, hysteresis error, note 4 | -- | 0.05 | 0.25 | %fs |
| Full Scale Shift (0°C-50°C), note 2 | -- | -- | ±200 | uV |

Performance Characteristics for 1 INCH-D-MV

| Parameter, note 1 | Minimum | Nominal | Maximum | Units |
|---|---------|---------|---------|-------|
| Operating Range, differential pressure | -- | 1.0 | -- | "H2O |
| Output Span, @ 1"H2O, note 5 | 9.0 | 10.0 | 11.0 | mV |
| Offset Voltage @ zero differential pressure | -- | -- | ±500 | uV |
| Offset Temperature Shift (0°C-50°C), note 2 | -- | -- | ±250 | uV |
| Offset Warm-up Shift, note 3 | -- | -- | ±100 | uV |
| Offset Position Sensitivity (1g) | -- | -- | ±50 | uV |
| Offset Long Term Drift (one year) | -- | -- | ±200 | uV |
| Linearity, hysteresis error, note 4 | -- | 0.05 | 0.25 | %fs |
| Full Scale Shift (0°C-50°C), note 2 | -- | -- | ±200 | uV |

Performance Characteristics for 2 INCH-D-MV

| Parameter, note 1 | Minimum | Nominal | Maximum | Units |
|---|---------|---------|---------|-------|
| Operating Range, differential pressure | -- | 2.0 | -- | "H2O |
| Output Span, note 5 | 9.0 | 10.0 | 11.0 | mV |
| Offset Voltage @ zero differential pressure | -- | -- | ±500 | uV |
| Offset Temperature Shift (0°C-50°C), note 2 | -- | -- | ±250 | uV |
| Offset Warm-up Shift, note 3 | -- | -- | ±100 | uV |
| Offset Position Sensitivity (1g) | -- | -- | ±50 | uV |
| Offset Long Term Drift (one year) | -- | -- | ±200 | uV |
| Linearity, hysteresis error, note 4 | -- | 0.05 | 0.25 | %fs |
| Full Scale Shift (0°C-50°C), note 2 | -- | -- | ±200 | uV |

Performance Characteristics for 5 INCH-D-MV

| Parameter, note 1 | Minimum | Nominal | Maximum | Units |
|---|---------|---------|---------|-------|
| Operating Range, differential pressure | -- | 5.0 | -- | "H2O |
| Output Span, note 5 | 19.0 | 20.0 | 21.0 | mV |
| Offset Voltage @ zero differential pressure | -- | -- | ±500 | uV |
| Offset Temperature Shift (0°C-50°C), note 2 | -- | -- | ±150 | uV |
| Offset Warm-up Shift, note 3 | -- | -- | ±50 | uV |
| Offset Position Sensitivity (1g) | -- | -- | ±10 | uV |
| Offset Long Term Drift (one year) | -- | -- | ±100 | uV |
| Linearity, hysteresis error, note 4 | -- | 0.05 | 0.25 | %fs |
| Full Scale Shift (0°C-50°C), note 2 | -- | -- | ±200 | uV |

Performance Characteristics for 10 INCH-D-MV

| Parameter, note 1 | Minimum | Nominal | Maximum | Units |
|---|---------|---------|---------|-------|
| Operating Range, differential pressure | -- | 10.0 | -- | "H2O |
| Output Span, note 5 | 19.0 | 20.0 | 21.0 | mV |
| Offset Voltage @ zero differential pressure | -- | -- | ±500 | uV |
| Offset Temperature Shift (0°C-70°C), note 2 | -- | -- | ±150 | uV |
| Offset Warm-up Shift, note 3 | -- | -- | ±50 | uV |
| Offset Position Sensitivity (1g) | -- | -- | ±5 | uV |
| Offset Long Term Drift (one year) | -- | -- | ±100 | uV |
| Linearity, hysteresis error, note 4 | -- | 0.05 | 0.25 | %fs |
| Full Scale Shift (0°C-70°C), note 2 | -- | -- | ±200 | uV |

Performance Characteristics for 20 INCH-D-MV

| Parameter, note 1 | Minimum | Nominal | Maximum | Units |
|---|---------|---------|---------|-------|
| Operating Range, differential pressure | -- | 20.0 | -- | "H2O |
| Output Span, note 5 | 19.0 | 20.0 | 21.0 | mV |
| Offset Voltage @ zero differential pressure | -- | -- | ±500 | uV |
| Offset Temperature Shift (0°C-70°C), note 2 | -- | -- | ±150 | uV |
| Offset Warm-up Shift, note 3 | -- | -- | ±50 | uV |
| Offset Position Sensitivity (1g) | -- | -- | ±5 | uV |
| Offset Long Term Drift (one year) | -- | -- | ±100 | uV |
| Linearity, hysteresis error, note 4 | -- | 0.05 | 0.25 | %fs |
| Full Scale Shift (0°C-70°C), note 2 | -- | -- | ±200 | uV |

Performance Characteristics for 30 INCH-D-MV

| Parameter, note 1 | Minimum | Nominal | Maximum | Units |
|---|---------|---------|---------|-------|
| Operating Range, differential pressure | -- | 30.0 | -- | "H2O |
| Output Span, note 5 | 19.0 | 20.0 | 21.0 | mV |
| Offset Voltage @ zero differential pressure | -- | -- | ±500 | uV |
| Offset Temperature Shift (0°C-70°C), note 2 | -- | -- | ±150 | uV |
| Offset Warm-up Shift, note 3 | -- | -- | ±50 | uV |
| Offset Position Sensitivity (1g) | -- | -- | ±5 | uV |
| Offset Long Term Drift (one year) | -- | -- | ±100 | uV |
| Linearity, hysteresis error, note 4 | -- | 0.05 | 0.25 | %fs |
| Full Scale Shift (0°C-70°C), note 2 | -- | -- | ±200 | uV |

Specification Notes

NOTE 1: ALL PARAMETERS ARE MEASURED AT 12.0 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.

Pressure Response: for any pressure applied the response time to get to 90% of pressure applied is typically less than 100 useconds.

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- Поставка более 17-ти миллионов наименований электронных компонентов;
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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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