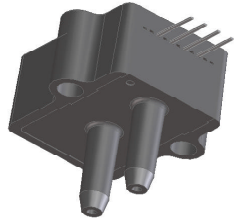


Millivolt Output Medium Pressure Sensors

H-Grade
Pressure Sensors



Features

- 0 to 4" H₂O to 0 to 100 PSI Pressure Ranges
- 0.5 % linearity...high accuracy version
- Temperature Compensated
- Calibrated Zero and Span

Applications

- Medical Instrumentation
- Environmental Controls
- HVAC

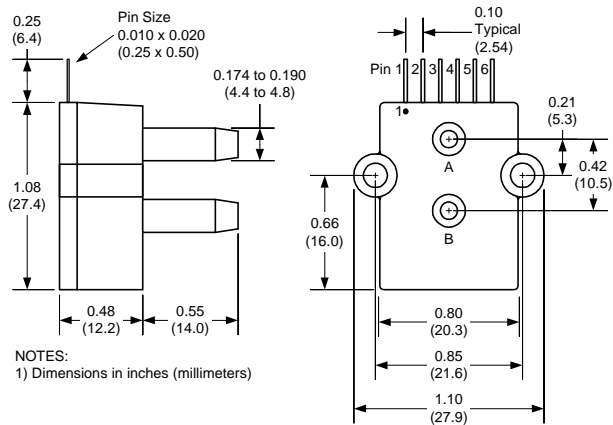
General Description

The Millivolt Output pressure sensors is based upon a proprietary packaging technology to reduce output offset or common mode errors. This model provides a calibrated millivolt output with excellent output offset characteristics. 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 H-GRADE is a high accuracy version of the millivolt output pressure sensors.

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



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

Pressure Sensor Characteristics Maximum Ratings

Environmental Specifications

Supply Voltage VS	16 Vdc
Common-mode pressure	50 psig
Lead Temperature (soldering 2-4 sec.)	250°C

Temperature Ranges	
Compensated	0 to 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
4 INCH-D-HGRADE-MV	0 - 4" H2O	40 mV	3 PSI	15 PSI
0.3 PSI-D-HGRADE-MV	0 - 0.3 PSI	20 mV	5 PSI	15 PSI
1 PSI-D-HGRADE-MV	0 - 1 PSI	18 mV	5 PSI	15 PSI
5 PSI-D-HGRADE-MV	0 - 5 PSI	60 mV	10 PSI	30 PSI
15 PSI-D-HGRADE-MV	0 - 15 PSI	90 mV	60 PSI	120 PSI
30 PSI-D-HGRADE-MV	0 - 30 PSI	90 mV	90 PSI	150 PSI
100 PSI-D-HGRADE-MV	0 - 100 PSI	100 mV	200 PSI	250 PSI
15 PSI-A-HGRADE-MV	0 - 15 PSIA	60 mV	60 PSIA	120 PSI

Performance Characteristics for 4 INCH-D-HGRADE-MV

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		4		"H2O
Output Span, note 5	39.5	40.0	40.5	mV
Offset Voltage @ zero differential pressure			±0.5	mV
Offset Temperature Shift (0°C-70°C), note 2			±500	uV
Linearity, hysteresis error, note 4		0.25	0.5	% fs
Span Shift (0°C-70°C), note 2			±1	% fs

Performance Characteristics for 0.3 PSI-D-HGRADE-MV

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		0.3		PSI
Output Span, note 5	19.8	20.0	20.2	mV
Offset Voltage @ zero differential pressure			±0.5	mV
Offset Temperature Shift (0°C-70°C), note 2			±500	uV
Linearity, hysteresis error, note 4		0.25	0.5	% fs
Span Shift (0°C-70°C), note 2			±1	% fs

Performance Characteristics for 1 PSI-D-HGRADE-MV

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		1.0		PSI
Output Span, note 5	17.82	18.0	18.18	mV
Offset Voltage @ zero differential pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±500	µV
Linearity, hysteresis error, note 4		0.25	0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

Performance Characteristics for 5 PSI-D-HGRADE-MV

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		5.0		PSI
Output Span, note 5	59.4	60.0	60.6	mV
Offset Voltage @ zero differential pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±500	µV
Linearity, hysteresis error, note 4		0.25	0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

Performance Characteristics for 15 PSI-D-HGRADE-MV

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		15.0		PSI
Output Span, note 5	89.1	90.0	90.9	mV
Offset Voltage @ zero differential pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±500	µV
Linearity, hysteresis error, note 4		0.25	0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

Performance Characteristics for 30 PSI-D-HGRADE-MV

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		30.0		PSI
Output Span, note 5	89.1	90.0	90.9	mV
Offset Voltage @ zero differential pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±500	µV
Linearity, hysteresis error, note 4		0.25	0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

Performance Characteristics for 100 PSI-D-HGRADE-MV

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		100.0		PSI
Output Span, note 5	99	100	101	mV
Offset Voltage @ zero differential pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±500	µV
Linearity, hysteresis error, note 4		0.25	0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

Performance Characteristics for 15 PSI-A-HGRADE-MV

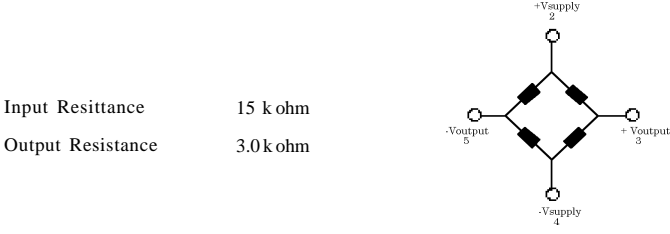
Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, absolute pressure		15.0		PSIA
Output Span, note 5	89.1	90.0	90.9	mV
Offset Voltage @ zero absolute pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±500	µV
Linearity, hysteresis error, note 4		0.25	0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

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.

Equivalent Circuit



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