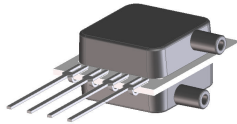


# Millivolt Output Miniature Medium Pressure Sensors

**H-Grade**  
Pressure Sensors



## Features

- 0 to 0.3 PSI to 0 to 30 PSI Pressure Ranges
- 1 % linearity version
- Temperature Compensated
- Calibrated Zero and Span

## Applications

- Medical Instrumentation
- Environmental Controls
- HVAC

## General Description

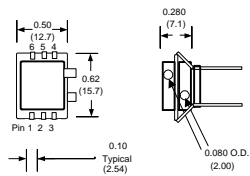
The Millivolt Output pressure sensors is based upon a proprietary packaging technology to reduce output offset or common mode errors. This model provides a calibrated millivolt output with good output offset characteristics. In addition the sensor utilizes a silicon, micromachined, stress concentration 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 C-GRADE is a lowest cost version of the millivolt output pressure sensors.

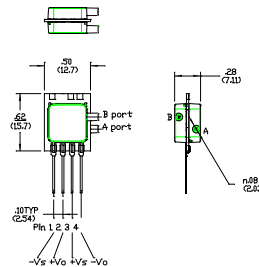
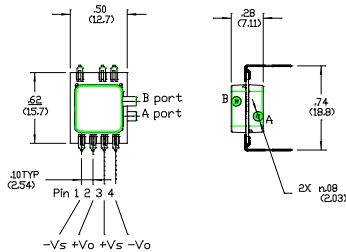
The output of the device is ratiometric to the supply voltage and operation from any D.C. supply voltage up to +16 V is acceptable.

## Physical Dimensions

### Dual in Line (SDXL)



### Dual in Line (DIP)



**Two Pressure Port Same Side  
Gage Version single port on  
top**

**Pressure Sensor Characteristics Maximum Ratings**

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

**Environmental Specifications**

<b>Temperature Ranges</b>	
<b>Compensated</b>	0 to 70° C
<b>Operating</b>	-25 to 85° C
<b>Storage</b>	-40 to 125° C
<b>Humidity Limits</b>	0 to 95% RH (non condensing)

**Standard Pressure Ranges**

<b>Part Number-Side Port Top Only</b>	<b>Part Number-DIP</b>	<b>Operating Pressure</b>	<b>Nominal Span</b>	<b>Proof Pressure</b>	<b>Burst Pressure</b>
0.3 PSI-G-HGRADE-MV-SMINI	0.3 PSI-D-HGRADE-MV-DIP	0 - 0.3 PSI	20mV	5 PSI	15 PSI
1 PSI-G-HGRADE-MV-SMINI	1 PSI-D-HGRADE-MV-DIP	0 - 1 PSI	18mV	5 PSI	15 PSI
5 PSI-G-HGRADE-MV-SMINI	5 PSI-D-HGRADE-MV-DIP	0 - 5 PSI	60mV	10 PSI	30 PSI
15 PSI-G-HGRADE-MV-SMINI	15 PSI-D-HGRADE-MV-DIP	0 - 15 PSI	90mV	60 PSI	120 PSI
30 PSI-G-HGRADE-MV-SMINI	30 PSI-D-HGRADE-MV-DIP	0 - 30 PSI	90mV	90 PSI	150 PSI
15 PSI-A-HGRADE-MV-SMINI	15 PSI-A-HGRADE-MV-DIP	0 - 15 PSIA	60mV	60 PSIA	120 PSI

<b>Part Number-2 Side Ports- same side</b>	<b>Part Number-SDXL</b>	<b>Operating Pressure</b>	<b>Nominal Span</b>	<b>Proof Pressure</b>	<b>Burst Pressure</b>
0.3 PSI-D1-HGRADE-MV-SMINI	0.3 PSI-D-HGRADE-MV-SDXL	0 - 0.3 PSI	20mV	5 PSI	15 PSI
1 PSI-D1-HGRADE-MV-SMINI	1 PSI-D-HGRADE-MV-SDXL	0 - 1 PSI	18mV	5 PSI	15 PSI
5 PSI-D1-HGRADE-MV-SMINI	5 PSI-D-HGRADE-MV-SDXL	0 - 5 PSI	60mV	10 PSI	30 PSI
15 PSI-D1-HGRADE-MV-SMINI	15 PSI-D-HGRADE-MV-SDXL	0 - 15 PSI	90mV	60 PSI	120 PSI
30 PSI-D1-HGRADE-MV-SMINI	30 PSI-D-HGRADE-MV-SDXL	0 - 30 PSI	90mV	90 PSI	150 PSI
	15 PSI-A-HGRADE-MV-SDXL	0 - 15 PSIA	60mV	60 PSIA	120 PSI

**Performance Characteristics for 0.3 PSI-D-HGRADE-MV-SMINI**

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

### Performance Characteristics for 1 PSI-D-HGRADE-MV-SMINI

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		1.0		PSI
Output Span, note 5	17.82	18	18.18	mV
Offset Voltage @ zero differential pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±0.5	mV
Linearity, hysteresis error, note 4			±0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

### Performance Characteristics for 5 PSI-D-HGRADE-MV-SMINI

Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		5.0		PSI
Output Span, note 5	59.4	60	60.6	mV
Offset Voltage @ zero differential pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±0.5	mV
Linearity, hysteresis error, note 4			±0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

### Performance Characteristics for 15 PSI-D-HGRADE-MV-SMINI

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			±0.5	mV
Linearity, hysteresis error, note 4			±0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

### Performance Characteristics for 30 PSI-D-HGRADE-MV-SMINI

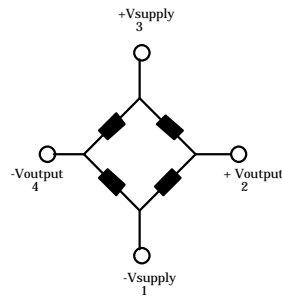
Parameter, note 1	Minimum	Nominal	Maximum	Units
Operating Range, differential pressure		30.0		PSI
Output Span, note 5	89.1	90	90.9	mV
Offset Voltage @ zero differential pressure			±0.3	mV
Offset Temperature Shift (0°C-70°C), note 2			±0.5	mV
Linearity, hysteresis error, note 4			±0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

### Performance Characteristics for 15 PSI-A-HGRADE-MV-SMINI

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			±0.5	mV
Offset Temperature Shift (0°C-70°C), note 2			±0.5	mV
Linearity, hysteresis error, note 4			±0.5	%fs
Span Shift (0°C-70°C), note 2			±1	%fs

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

### Equivalent Circuit



Input Resittance            15 k ohm  
 Output Resistance         3.0k ohm

#### 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.

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