

Millivolt Output Miniature 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

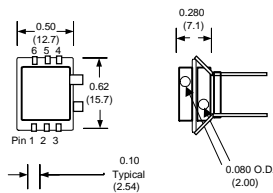
The Millivolt Output pressure sensors is based upon a proprietary packaging technology to reduce output offset or common mode errors. This model provides a calibrated millivolt output with good output offset characteristics. In addition the sensor utilizes a silicon, micromachined, stress concentration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

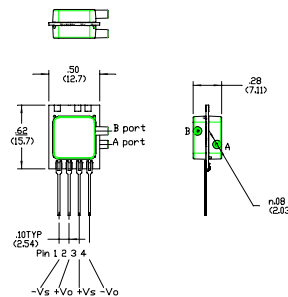
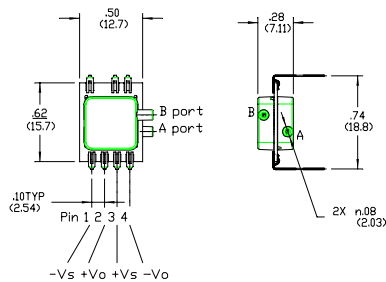
The output of the device is ratiometric to the supply voltage and operation from any D.C. supply voltage up to +16 V is acceptable.

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

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

Environmental Specifications

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-Side Port Top Only	Part Number-DIP	Operating Pressure	Nominal Span	Proof Pressure	Burst Pressure
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

Part Number-2 Side Ports- same side	Part Number-SDXL	Operating Pressure	Nominal Span	Proof Pressure	Burst Pressure
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

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			±0.3	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			±2	%fs

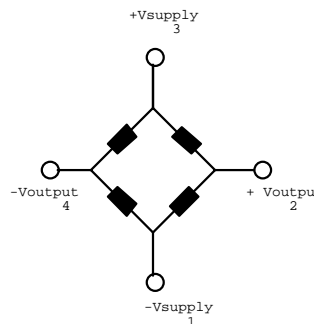


Performance Characteristics for 15 PSI-A-HGRADE-MV-SMINI

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 Resistance 5.0 k ohm

Output Resistance 3.0 k 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.

All Sensors reserves the right to make changes to any products herein. All Sensors does not assume any liability arising out of the application or use of any product or circuit described herein, neither does it convey any license under its patent rights nor the rights of others.