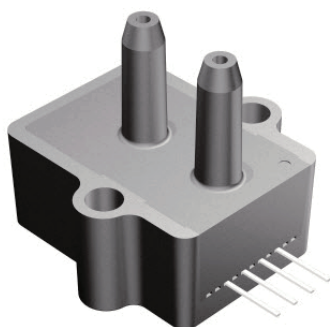


## アンプ内蔵圧力センサー



### 特徴

- 0 ~ 74Pa(0.25 inH2O)、0 ~ 125Pa(0.5 inH2O)圧力範囲
- 4V出力に比例
- 温度補正
- ゼロ及びスパン較正済み

### 応用分野

- 医用呼吸
- HVAC

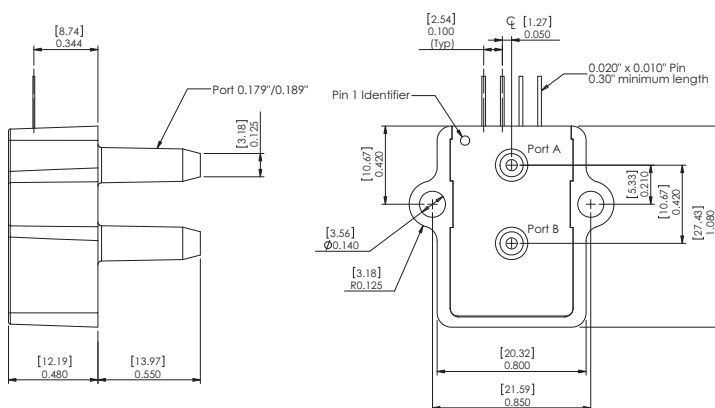
### 概要

アンプ内蔵微圧センサーは出力オフセットやコモンモード誤差を軽減するために独自技術に基づいています。このモデルは4V出力に比例し、より良い出力オフセット特徴を持ちます。温度、ウォームアップへの安定性、長期安定性、姿勢特性の変化に伴う出力オフセット誤差は従来の補正方法に比べ全て大きく軽減されています。このセンサーは微細加工されたシリコンや、圧力集中を高めた構造により、圧力測定時の理想的な直線出力を提供するために有効活用されています。

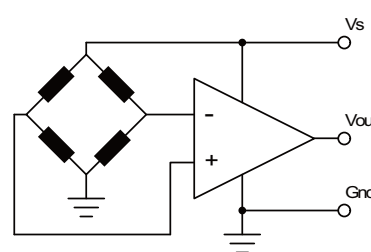
これらの較正および温度補正されたセンサーは広範囲の温度変化において正確で安定した出力を提供します。このシリーズは、空気や乾燥ガスといった非腐食的、不活性ガスに使われる事を目的としています。

出力は電源に対して比例しています。4.5~5.5ボルトDCにおいて駆動するよう設計されています。

### 図面



### 動作回路



- pin 1: Vsupply
- pin 2: Common
- pin 3: Voutput
- pin 4: do not connect

DS-0368 Rev A

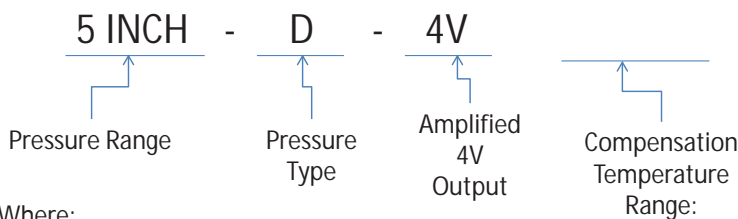
Pressure Sensor Ratings	Environmental Specifications
<b>Supply Voltage VS</b>	+4.5 to +5.5 Vdc
<b>Common-mode pressure</b>	-10 to +10 psig
<b>Lead Temperature, max (soldering 2-4 sec.)</b>	270°C
<b>Standard Pressure Ranges</b>	
<b>Temperature Ranges</b>	
<b>Compensated</b>	Standard: 5° C to 50° C Industrial: -25° C to 85° C Military: -40° C to 125° C
<b>Operating &amp; Storage</b>	-40 to 125° C
<b>Humidity Limits</b>	0 to 95% RH (non condensing)

Device	Operating Range <sup>A, B</sup>		Pressure Type	Nominal Span	Proof Pressure		Burst Pressure		Specification Notes
	inH2O	Pa			inH2O	kPa	inH2O	kPa	
0.25 INCH-D-4V	±0.25	65	Differential	4V	40	10	80	20	1
0.25 INCH-G-4V	0 to 0.25	65	Gage	4V	40	10	80	20	1
0.5 INCH-D-4V	±0.5	125	Differential	4V	40	10	80	20	1
0.5 INCH-G-4V	0 to 0.5	125	Gage	4V	40	10	80	20	1
1 MBAR-D-4V	±1 mbar	100	Differential	4V	100	25	200	50	1
1 INCH-D-4V	±1	250	Differential	4V	100	25	200	50	-
1 INCH-G-4V	0 to 1	250	Gage	4V	100	25	200	50	-
2.5 INCH-D-4V	±2.5	625	Differential	4V	200	50	300	75	1
2.5 INCH-G-4V	0 to 2.5	625	Gage	4V	200	50	300	75	1
5 INCH-D-4V	±5	1,250	Differential	4V	200	50	300	75	-
5 INCH-G-4V	0 to 5	1,250	Gage	4V	200	50	300	75	-
10 INCH-D-4V	±10	2,500	Differential	4V	200	50	300	75	-
10 INCH-G-4V	0 to 10	2,500	Gage	4V	200	50	300	75	-
20 INCH-D-4V	±20	5,000	Differential	4V	300	75	500	125	-
20 INCH-G-4V	0 to 20	5,000	Gage	4V	300	75	500	125	-
30 INCH-D-4V	±30	7,500	Differential	4V	500	125	800	200	-
30 INCH-G-4V	0 to 30	7,500	Gage	4V	500	125	800	200	-
40 INCH-G-4V	0 to 40	10,000	Gage	4V	500	125	800	200	1
60 INCH-G-4V	0 to 60	15,000	Gage	4V	500	125	800	200	1

Note A: Operating range in Pa is expressed as an approximate value.

Note B: Products are calibrated to operating range expressed in inH2O (except 1 MBAR-D-4V, which is calibrated to range in mbar).

### Ordering Information:



Where:

Compensation Temperature Range: \_\_\_\_\_ (empty – indicates Standard)

Compensation Temperature Range: "—PRIME" indicates Industrial

Compensation Temperature Range: "—MIL" indicates Military

Example: 5 INCH-D-4V-PRIME

Performance Characteristics for ADCA Series Amplified Low Pressure Sensors

All parameters are measured at 5.0 volt excitation and room temperature unless otherwise specified. Pressure measurements are with positive pressure applied to PORT B

Parameter		Minimum	Nominal	Maximum	Units	Specification Notes
<b>Output Span</b>						
	All Differential Products	±1.90	±2.0	±2.10	V	5
	All Gage Products	3.9	4.0	4.1	V	5
<b>Span Temperature Shift</b>						
	0.25 INCH-D-4V	-	-	±3	%FSS	2
	0.25 INCH-G-4V	-	-	±3	%FSS	2
	0.50 INCH-D-4V	-	-	±3	%FSS	2
	0.50 INCH-G-4V	-	-	±3	%FSS	2
	1 MBAR-D-4V	-	-	±3	%FSS	2
	1 INCH-D-4V	-	-	±2	%FSS	2
	1 INCH-G-4V	-	-	±2	%FSS	2
	2.5 INCH-D-4V	-	-	±2	%FSS	2
	2.5 INCH-G-4V	-	-	±2	%FSS	2
	All Others	-	-	±1	%FSS	2
<b>Offset Voltage @ zero differential pressure</b>						
	All Differential Products	2.15	2.25	2.35	V	-
	All Gage Products	0.15	0.25	0.35	V	-
<b>Offset Temperature Shift</b>						
	0.25 INCH-D-4V	-	-	±60	mV	2
	0.25 INCH-G-4V	-	-	±60	mV	2
	0.50 INCH-D-4V	-	-	±60	mV	2
	0.50 INCH-G-4V	-	-	±60	mV	2
	1 MBAR-D-4V	-	-	±60	mV	2
	1 INCH-D-4V	-	-	±60	mV	2
	1 INCH-G-4V	-	-	±60	mV	2
	2.5 INCH-D-4V	-	-	±60	mV	2
	2.5 INCH-G-4V	-	-	±60	mV	2
	5 INCH-D-4V	-	-	±40	mV	2
	5 INCH-G-4V	-	-	±40	mV	2
	All Others	-	-	±20	mV	2
<b>Offset Warm-up Shift</b>						
	0.25 INCH-D-4V	-	±20	-	mV	3
	0.25 INCH-G-4V	-	±20	-	mV	3
	0.50 INCH-D-4V	-	±20	-	mV	3
	0.50 INCH-G-4V	-	±20	-	mV	3
	1 MBAR-D-4V	-	±20	-	mV	3
	1 INCH-D-4V	-	±10	-	mV	3
	1 INCH-G-4V	-	±10	-	mV	3
	All Others	-	±5	-	mV	3
<b>Offset Position Sensitivity (±1g)</b>						
	0.25 INCH-D-4V	-	±20	-	mV	6
	0.25 INCH-G-4V	-	±20	-	mV	6
	0.50 INCH-D-4V	-	±20	-	mV	6
	0.50 INCH-G-4V	-	±20	-	mV	6
	1 MBAR-D-4V	-	±20	-	mV	6
	1 INCH-G-4V	-	±15	-	mV	6
	All Others	-	±5	-	mV	6

## Performance Characteristics for ADCA Series Amplified Low Pressure Sensors (Cont'd)

All parameters are measured at 5.0 volt excitation and room temperature unless otherwise specified. Pressure measurements are with positive pressure applied to PORT B

Parameter		Minimum	Nominal	Maximum	Units	Specification Notes
<b>Offset Long Term Drift (one year)</b>						
	0.25 INCH-D-4V	-	±20	-	mV	-
	0.25 INCH-G-4V	-	±20	-	mV	-
	0.50 INCH-D-4V	-	±20	-	mV	-
	0.50 INCH-G-4V	-	±20	-	mV	-
	1 MBAR-D-4V	-	±20	-	mV	-
	1 INCH-D-4V	-	±10	-	mV	-
	1 INCH-G-4V	-	±10	-	mV	-
	All Others	-	±5	-	mV	-
<b>Linearity, Hysteresis error (all products)</b>						
		-	0.05	0.25	%FSS	4

**Pressure Response:** for any pressure applied the response time to get to 90% of pressure applied is typically less than 500 useconds.

## Specification Notes

**Note 1:** Part number is available in Standard Compensation Temperature Range only.

**Note 2:** Shift is relative to 25°C between standard, industrial, or military compensated temperature range endpoints.

**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 span is the algebraic difference between full scale output voltage and the offset voltage.

**Note 6:** Parameter is characterized and not 100% tested.

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## ADCA SERIES AMPLIFIED LOW PRESSURE SENSORS

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