

- ▶ Hydraulic Controls
- ▶ Process Control
- ▶ Oceanography
- ▶ Refrigeration/Compressors
- ▶ Pressure Transmitters
- ▶ Level Systems



The Model 86 is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The Model 86 is designed for O-ring mounting. The sensing package utilizes silicone oil to transfer pressure from the 316L stainless steel diaphragm to the sensing element.

The Model 86 is designed for high performance, low pressure applications. A ceramic substrate is attached to the package that contains laser-trimmed resistors for temperature compensation and offset correction. An additional laser-trimmed resistor is included which can be used to adjust an external differential amplifier and provide span interchangeability to within $\pm 1\%$.

Sensors with threaded pressure fittings, weldable flush sensors and high pressure stainless steel sensors are also available. Please contact the factory for more information.

- ▶ O-Ring Flush Mount
- ▶ -20°C to $+85^{\circ}\text{C}$ Compensated Temperature Range
- ▶ $\pm 0.1\%$ Pressure Non-linearity
- ▶ $\pm 1.0\%$ Interchangeable Span (provided by gain set resistor)
- ▶ Solid State Reliability
- ▶ Low Power

Range	psig	psia
0 to 15	●	●
0 to 30	●	●
0 to 50	●	●
0 to 100	●	●
0 to 300	●	●
0 to 500	●	●

SENSING ELEMENT

Diagram showing the sensing element assembly with dimensions in inches [mm].

Labels: O-RING, BUNA-N, $\phi .070$ [1.8]; DIAPHRAGM, .001 THICK; WELD RING; BALL SEAL; 2X $\phi .6230 / .6215$ [$\phi 15.824 / 15.786$]; 2X $\phi .09$ [2.3]; 2X $\phi .18$ [4.6]; 4X $\phi .018$ [0.48]; 4X $\phi .21$ [5.3]; .12 [2.9]; .21 [5.3]; .30 [7.5]; .06 [1.6]; .055 [1.40] MAX.

w/OPTIONS

Diagram showing the sensing element assembly with dimensions in inches [mm].

Labels: SPACER, $\phi .48$ [12.2]; EPOXY STRAIN RELIEF; VENT TUBE, $\phi .06$ [1.6] O.D.; RIBBON CABLE, 26 AWG (CONDUCTOR #1 w/RED STRIPE); CONNECTOR, FEMALE, MOLEX P/N 50-57-9406 (OR EQUIVALENT); .100 [2.54] CENTERS; .14 [3.7]; .23 [5.7]; 6.00 $\pm .25$ [152.4 ± 6.4]; .60 [15.2]; .100 [2.54] CENTERS.

VIEW SHOWN w/o CABLE AND CONNECTOR FOR CLARITY

Diagram showing the sensing element assembly with dimensions in inches [mm].

Labels: PAD 1; 5X $\phi .050$ [1.27]; $\phi .55$ [14.1] MIN COMP BOARD CLEARANCE; COMP BOARD.

DIMENSIONS ARE IN INCHES [mm]
ALL PROCESS WETTED PARTS ARE 316L STAINLESS STEEL

PERFORMANCE SPECIFICATIONS

All parameters specified at 1.5mA and at 25°C, after 10 second warm up, unless otherwise indicated. Unless specifically indicated, only those parameters indicated as tested are verified on each part. Parameters are specified for the compensated version only.

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Full Scale Output Span	75	100	125	mV	1
Zero Pressure Output (Offset)	-1	0	1	mV	2
Pressure Non Linearity	-0.10		0.10	±% Span	3
Pressure Hysteresis	-0.05	0.02	+0.05	±% Span	
Repeatability		0.02		±% Span	
Input and Output Resistance	2000	3500	4500	Ω	
Temperature Error - Span (-20 to +85°C)	-0.75		+0.75	% Span	4
Temperature Error - Offset (-20 to +85°C)	-0.5		+0.5	% Span	4, 5
Thermal Hysteresis - Span		0.05		% Span	4
Thermal Hysteresis - Offset		0.05		% Span	4
Long Term Stability - Span		0.1		±% Span/year	
Long Term Stability - Offset		0.1		±% Span/year	
Supply Current	0.5	1.5	2.0	mA	6
Output Load Resistance	10			MΩ	7
Insulation Resistance (50 VDC)	5			MΩ	8
Pressure Overload			3X	Rated	
Compensated Temperature Range	-20°C to +85°C				9
Operating Temperature Range	-40°C to +125°C				9
Storage Temperature Range	-50°C to +125°C				9
Media - Pressure Port	Liquids and Gases compatible with 316L Stainless Steel				
Media - Reference Port	Compatible with Silicon, Pyrex, Gold, Fluorosilicone Rubber and 316L Stainless Steel				
Weight	13 g				

- Notes
1. For amplified output circuits see application note TN-003.

2. Measured at vacuum for absolute (A), ambient for gage (G).

3. Best fit straight line.

4. Over the temperature range -20°C to +85°C with respect to +25°C.

5. 15 psi range sensors have an offset temperature error of ±0.75% (Max) from -20°C to +85°C.

6. Guarantees output/input ratiometricity.

7. Load resistance to reduce measurement errors due to output loading.

8. Between case and sensing element.

9. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.

ORDERING INFORMATION

86 - 050 G - C T

Vent (T = Tube, Blank is standard = No tube)

Electrical (C = Ribbon Cable with Connector,
R = Ribbon Cable, P = Solder Pads
L = Leads, Uncompensated)

Type (A = Absolute, G = Gage)

Pressure Range (15 to 500 psi, 050 = 50 psi)

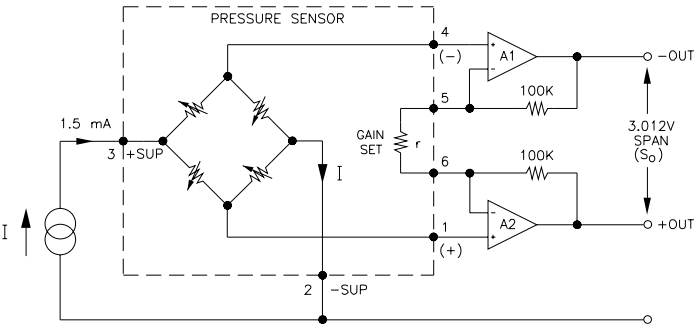
Model

For other ranges, process fittings and electrical connections contact factory.

CONNECTIONS

PAD/CONDUCTOR NO	FUNCTION
1	+OUT
2	-EX
3	+EX
4	-OUT
5	GAIN
6	GAIN

APPLICATION SCHEMATIC



SUNSTAR 商斯达实业集团是集研发、生产、工程、销售、代理经销、技术咨询、信息服务等为一体的高科技企业，是专业高科技电子产品生产厂家，是具有 10 多年历史的专业电子元器件供应商，是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一，是一家专业代理和分销世界各大品牌 IC 芯片和电子元器件的连锁经营综合性国际公司，专业经营进口、国产名厂名牌电子元件，型号、种类齐全。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商，已在全国范围内建成强大统一的供货和代理分销网络。我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM 电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA 软件硬件、二极管、三极管、模块等，是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。商斯达实业公司拥有庞大的资料库，有数位毕业于著名高校——有中国电子工业摇篮之称的西安电子科技大学（西军电）并长期从事国防尖端科技研究的高级工程师为您精挑细选、量身订做各种高科技电子元器件，并解决各种技术问题。

更多产品请看本公司产品专用销售网站：

商斯达中国传感器科技信息网：<http://www.sensor-ic.com/>

商斯达工控安防网：<http://www.pc-ps.net/>

商斯达电子元器件网：<http://www.sunstare.com/>

商斯达微波光电产品网：[HTTP://www.rfoe.net/](http://www.rfoe.net/)

商斯达消费电子产品网：<http://www.icasic.com/>

商斯达实业科技产品网：<http://www.sunstars.cn/>

传感器销售热线：

地址：深圳市福田区福华路福庆街鸿图大厦 1602 室

电话：0755-83370250 83376489 83376549 83607652 83370251 82500323

传真：0755-83376182 (0) 13902971329 MSN: SUNS8888@hotmail.com

邮编：518033 E-mail:szss20@163.com QQ: 195847376

深圳赛格展销部：深圳华强北路赛格电子市场 2583 号 电话：0755-83665529 25059422

技术支持：0755-83394033 13501568376

欢迎索取免费详细资料、设计指南和光盘；产品凡多，未能尽录，欢迎来电查询。

北京分公司：北京海淀区知春路 132 号中发电子大厦 3097 号

TEL: 010-81159046 82615020 13501189838 FAX: 010-62543996

上海分公司：上海市北京东路 668 号上海赛格电子市场 2B35 号

TEL: 021-28311762 56703037 13701955389 FAX: 021-56703037

西安分公司：西安高新开发区 20 所(中国电子科技集团导航技术研究所)

西安劳动南路 88 号电子商城二楼 D23 号

TEL: 029-81022619 13072977981 FAX:029-88789382