te.com



85VCV

Vacuum Constant Voltage

Specifications

- **316L SS Pressure Sensor**
- **Small Profile**
- **0 - 100mV Output**
- **Vacuum Gage**
- **Temperature Compensated**

Features

- Weldable/Threaded Process Fittings
- -40ºC to +125ºC Operating Temperature Range
- Up to ±0.1% Pressure Non-Linearity
- Solid State Reliability

Applications

- Medical Instruments
- Process Control
- Fresh & Waste Water Measurements
- Partial Vacuum Gas Measurement
- Pressure Transmitters
- Tank Level Systems (RV & Industrial)

Model 85VCV is a compensated, Constant Voltage, micro-machined, piezoresistive silicon pressure sensor designed for vacuum gage applications, packaged in a 316L Stainless Steel housing. The pressure sensor is offered in a weldable package or with a variety of threaded fittings such as 1/4NPT, 1/8NPT and 1/4BSP. Custom fittings can be manufactured upon request.

This product is designed for OEM applications where compatibility with corrosive media is required. The sensing package utilizes silicon oil to transfer pressure from the 316L Stainless Steel diaphragm to the sensing element. A ceramic substrate is attached to the package that contains laser-trimmed resistors for temperature compensation and offset correction.

For additional Model 85 products designed for vacuum gage applications, Compensated and Uncompensated datasheets are available

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Specifications

Unless otherwise specified, Supply Voltage: 10 V_{DC}; Ambient Temperature: 25°C

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	99	100	101	mV	1
Zero Pressure Output	-1.0	0	1.0	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 Resistance	5.5	9	12.5	kΩ	
Output Resistance	4.0		6.0	kΩ	
Temperature Error – Span	-1.0		1.0	%Span	4
Temperature Error – Offset	-1.0		1.0	%Span	4,5
Thermal Hysteresis – Span	-0.25	±0.05	0.25	%Span	4
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	%Span	4
Long Term Stability – Span		±0.10		%Span/year	
Long Term Stability – Offset		±0.10		%Span/year	
Supply Voltage		10	14	VDC	6
Output Load Resistance	5			MΩ	
Insulation Resistance (50Vdc)	50			MΩ	7
Output Noise (10Hz to 1KHz)		1.0		µV p-p	
Response Time (10% to 90%)			0.1	ms	
Pressure Overload			3X	Rated	8
Pressure Burst			4X	Rated	9
Compensated Temperature	-20		+85	ºC	
Operating Temperature	-40		+125	ºC	10
Storage Temperature	-50		+125	ºC	10
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel				

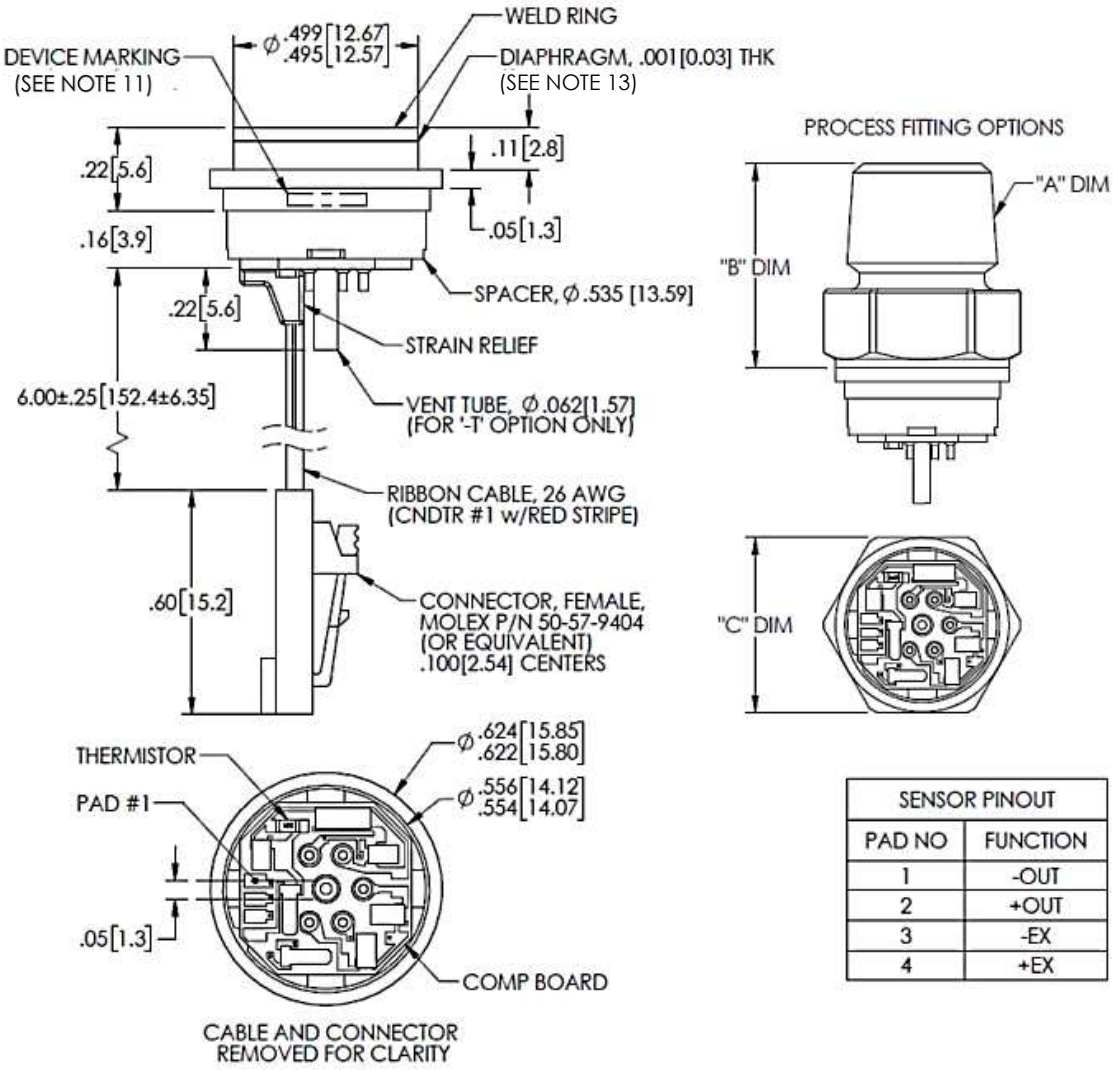
Notes

1. Measured at Ambient Pressure.
2. Best fit straight line.
3. Over the compensated temperature range with respect to 25°C.
4. 15psi range sensors have an Offset Temperature Error of ±1.5% (max).
5. Guarantees output/input ratiometricity.
6. Load resistance to reduce measurement errors due to output loading.
7. Between case and sending element.
8. The maximum pressure that can be applied without changing the transducer's performance or accuracy.
9. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
10. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.
11. Device Marking:
    Each part is identified with Model Number, Pressure Range, Type, Lot Number, Serial Number and Date Code.
12. Shipping/Packaging:
    The Steel diaphragm is protected by a plastic cap (no fitting options). Each unit is packaged individually in a plastic vial with anti-static foam.
13. Direct mechanical contact with diaphragm is prohibited. Diaphragm surface must remain free of defects (scratches, punctures, dents, fingerprints, etc.) for device to operate properly. Caution is advised when handling parts with exposed diaphragms. Use protective cap whenever devices are not in use.

Dimensions

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Dimensions are in inches[mm]

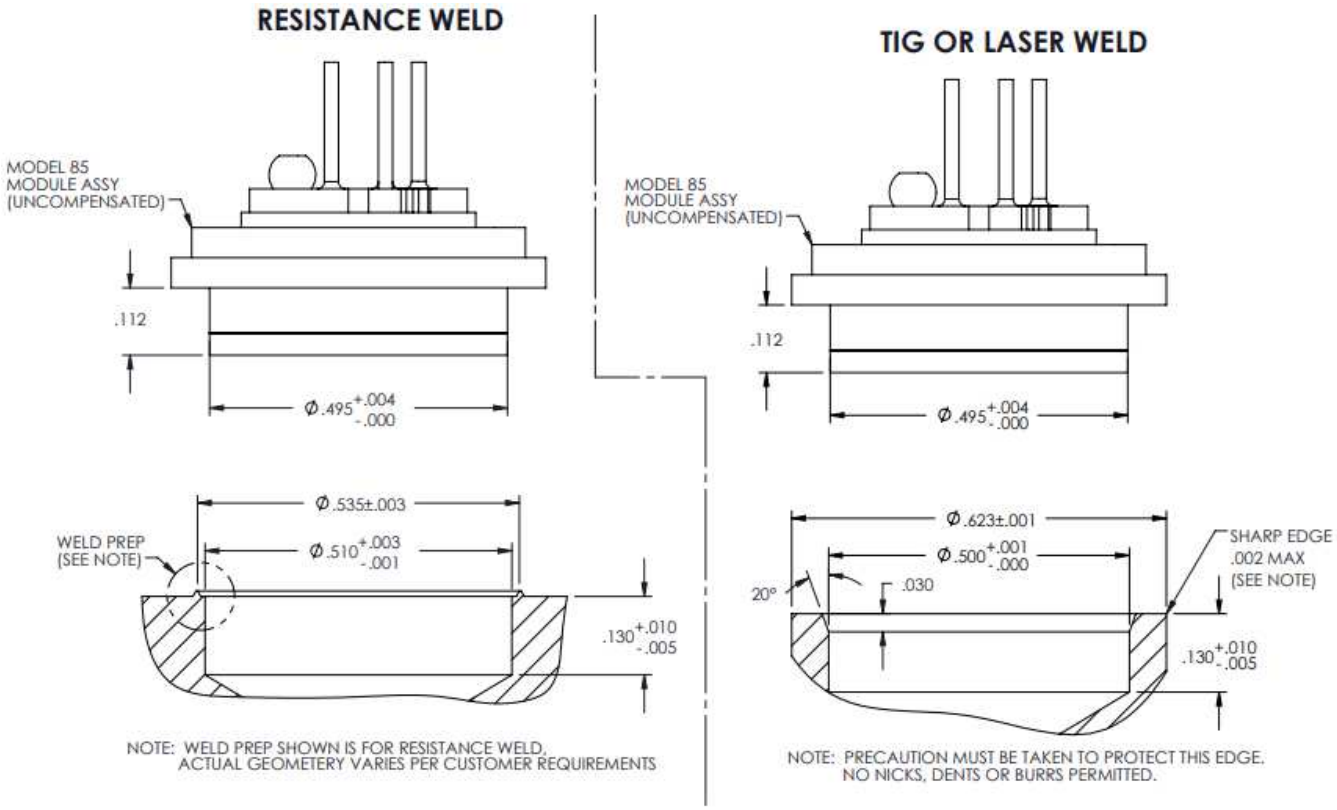


SENSOR PINOUT	
PAD NO	FUNCTION
1	-OUT
2	+OUT
3	-EX
4	+EX

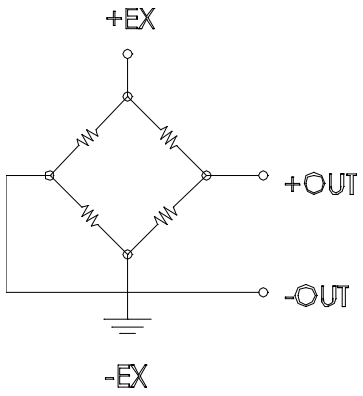
PROCESS FITTING DIMENSIONS				
FITTING TYPE	MEAS PART NO.	"A" DIM	"B" DIM	"C" DIM
1	IC-7050	1/4-18 NPT	.99[25.1]	7/8[22.2] HEX
2	IC-7049	1/8-27 NPT	.96[24.4]	7/8[22.2] HEX
3	IC-7048	7/16-20 UNF	.81[20.6]	7/8[22.2] HEX
4	IC-6754	1/4-18 NPT	.73[18.5]	5/8[15.9] HEX
5	IC-5010	1/4-19 BSP	.76[19.3]	3/4[19.0] HEX
8	IC-6800	1/8-27 NPT	.60[15.2]	5/8[15.9] HEX
9	IC-7124	1/4-19 BSP	.94[23.9]	7/8[22.2] HEX
NOTE: FITTING TYPE '4' ASSEMBLY SHOWN ALL DIMS ARE FOR REFERENCE				

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Recommended mounting dimensions



Application schematic



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Ordering information

Part Number

85CV – 030 V – 3 R T

Pressure Range [psi]
005
015
030
050
100
300
500

Vent	
T	Tube
[Blank]	No Tube

Electrical	
P	Solder Pads
R	Ribbon cable
C	Cable W Connector

Pressure Type	
V	Vacuum Gage

Fitting Type	
Code	Port Type
0	Weldable, No thread
1	1/4 NPT,7/8 HE X
2	1/8 NPT,7/8 HEX
3	7/16 UNF,7/8 HEX
4	1/4 NPT,5/8 HEX
5	1/4 BSP,3/4 HEX
8	1/8 NPT,5/8 HEX
9	1/4 BSP,7/8 HEX

Refer to Fitting Table for more information

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