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RoHS

85

Constant Voltage

Specifications

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

The 85CV is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 85 constant voltage is offered in a weldable package or with a variety of threaded fittings such as 1/4 and 1/8NPT, 1/4BSP as well as custom process fittings.

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.

Please refer to the 85 uncompensated and compensated datasheets for more information on different features of the 85.

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)

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Specifications

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

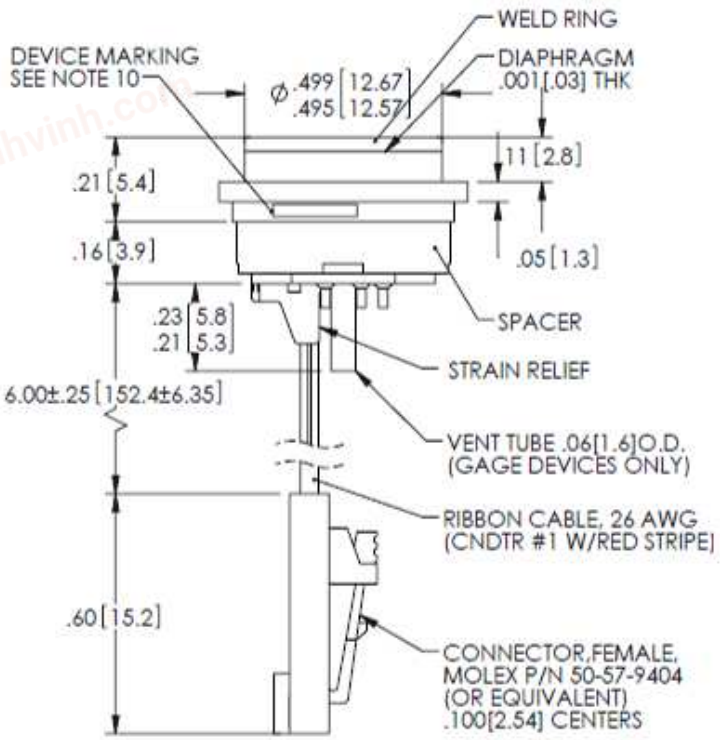
PARAMETERS	005PSI			≥015PSI			UNITS	NOTES
	MIN	TYP	MAX	MIN	TYP	MAX		
Span	98	100	102	99	100	101	mV	1
Zero Pressure Output	-2.0	-	2.0	-1.0	-	1.0	mV	1
Pressure Non-Linearity	-0.20	-	0.20	-0.10	-	0.10	%Span	2
Pressure Hysteresis	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span	
Repeatability	-	±0.02	-	-	±0.02	-	%Span	
Input Resistance	5.5K	9.0K	12.5K	5.5K	9.0K	12.5K	Ω	
Output Resistance	4.0K	-	7.0K	4.0K	-	6.0K	Ω	
Temperature Error – Span	-1.5	-	1.5	-1.0	-	1.0	%Span	3
Temperature Error – Offset	-2.5	-	2.5	-1.0	-	1.0	%Span	3
Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	3
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	3
Long Term Stability – Span	-	±0.10	-	-	±0.10	-	%Span/Year	
Long Term Stability – Offset	-	±0.25	-	-	±0.10	-	%Span/Year	
Supply Voltage	-	10	14	-	10	14	V_{DC}	4
Output Load Resistance	5M	-	-	5M	-	-	Ω	5
Insulation Resistance (50V_{DC})	50M	-	-	50M	-	-	Ω	6
Output Noise (10Hz to 1KHz)	-	1.0	-	-	1.0	-	µV p-p	
Response Time (10% to 90%)	-	-	0.1	-	-	0.1	ms	
Pressure Overload	-	-	3X	-	-	3X	Rated	7
Pressure Burst	-	-	4X	-	-	4X	Rated	8
Compensated Temperature	0	-	50	-20	-	85	°C	
Operating Temperature	-20	-	70	-40	-	125	ºC	9
Storage Temperature	-40	-	125	-50	-	125	ºC	9
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel							

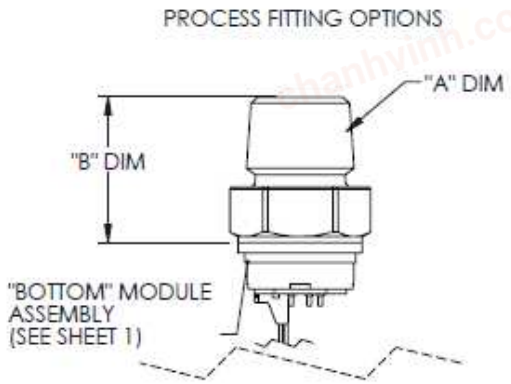
Notes

1. Measured at vacuum for absolute (A), ambient for gage (G).
2. Best fit straight line.
3. Over the compensated temperature range with respect to 25°C.
4. Guarantees output/input ratiometricity.
5. Load resistance to reduce measurement errors due to output loading.
6. Between case and sending element.
7. The maximum pressure that can be applied without changing the transducer's performance or accuracy.
8. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
9. Maximum temperature range for product with standard cable and connector is -20 to +105°C.
10. Standard Gage units are not recommended for vacuum applications. For vacuum applications below 1/2 atmosphere, consult factory.
11. Device Marking:
    Each part shall be identified with Model Number, Pressure Range, Type, Lot Number, Serial Number and Date Code
12. Shipping/Packaging
    The Stainless Steel Diaphragm is protected by a plastic cap (No Fitting Options). Each unit will be 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

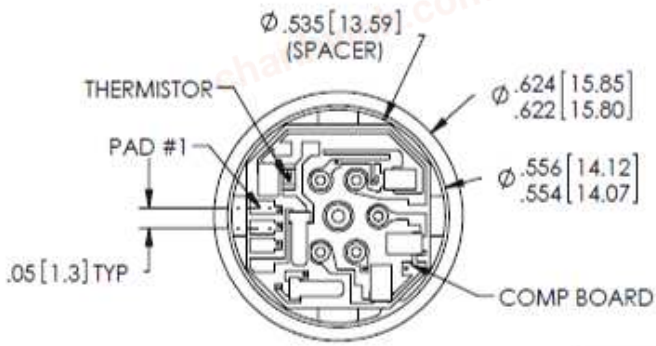
Dimensions are in inches [mm]







FITTING DIMENSIONS			
FITTING TYPE	"A" DIM	"B" DIM	"C" DIM
1	1/4-18 NPT	.99[25.1]	7/8[22.2] HEX
2	1/8-27 NPT	.96[24.4]	7/8[22.2] HEX
3	7/16-20 UNF	.81[20.6]	7/8[22.2] HEX
4	1/4-18 NPT	.73[18.5]	5/8[15.9] HEX
5	1/4-19 BSP	.76[19.3]	3/4[19.0] HEX
8	1/8-27 NPT	.60[15.2]	5/8[15.9] HEX
9	1/4-19 BSP	.94[23.9]	7/8[22.2] HEX
NOTE : FTG TYPE '4' ASSEMBLY SHOWN ALL DIMS ARE FOR REFERENCE			

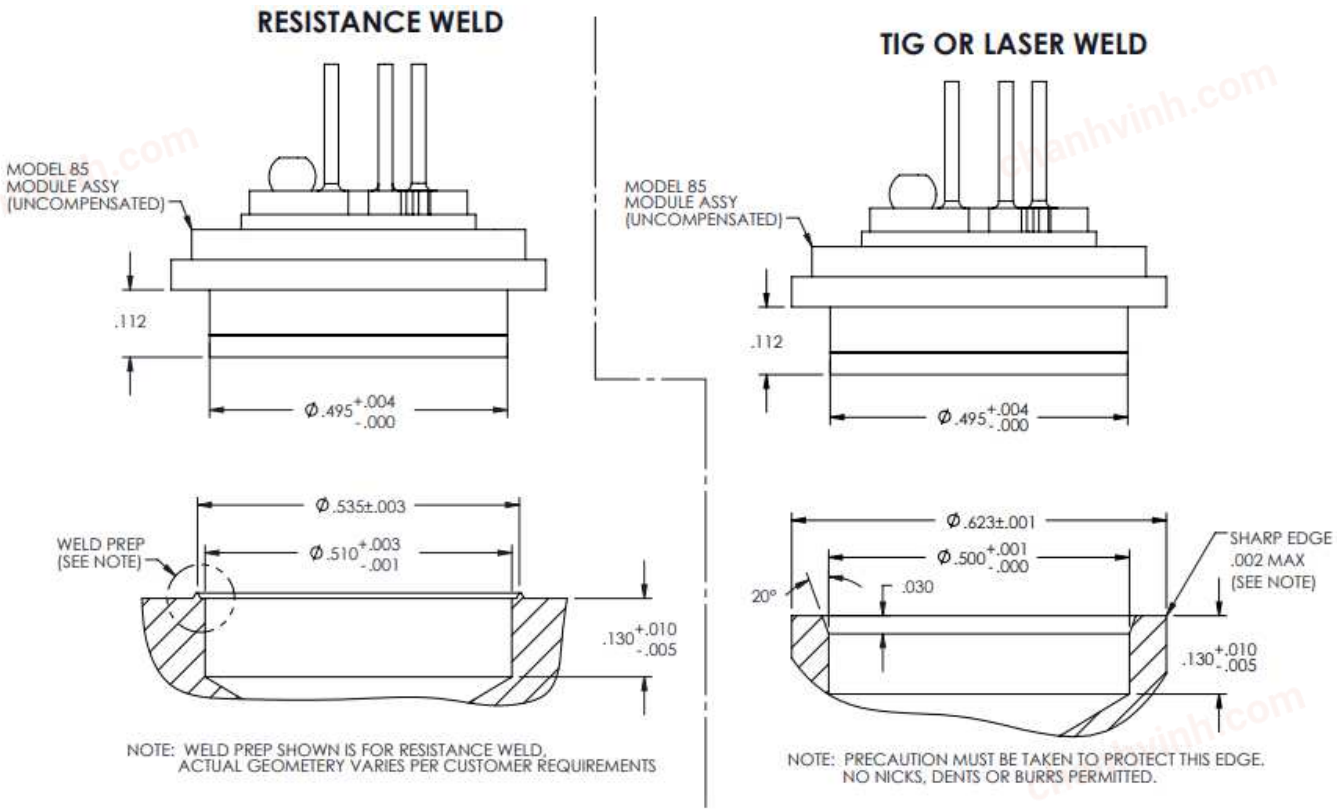


VIEW SHOWN W/O CABLE
AND CONNECTOR FOR CLARITY

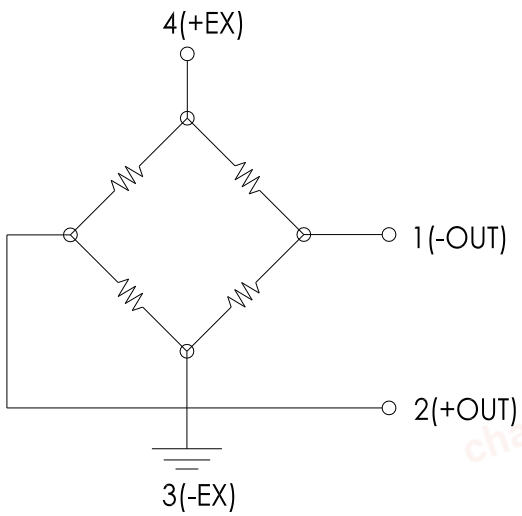
PAD NO	FUNCTION
1	-OUT
2	+OUT
3	-EX
4	+EX

85
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Recommended mounting dimensions



Application schematic



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Ordering information

Part Number

85CV – 030 G – 3 C 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	
G	Gage
A	Absolute

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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CONNECT WITH A SPECIALIST

NORTH AMERICA
Tel +1 800 522 6752

EUROPE
Tel +31 73 624 6999

ASIA
Tel +86 0400 820 6015

te.com/sensors

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