

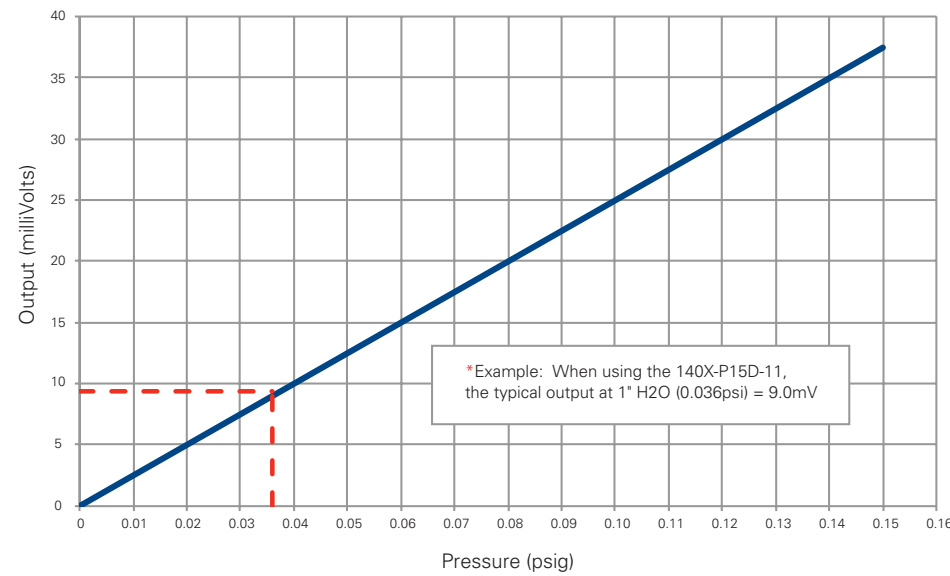


**LP Series – Uncompensated**

**Example Transfer Function (Sensor pn 140X-P15D-11):**

$$V_{out} = (250 * P) + \text{Offset} \pm \text{Error}$$

This graph assumes offset = 0mV, error = 0mV,  $V_s = 5.0V$ , and  $TEMP = 25^\circ C$



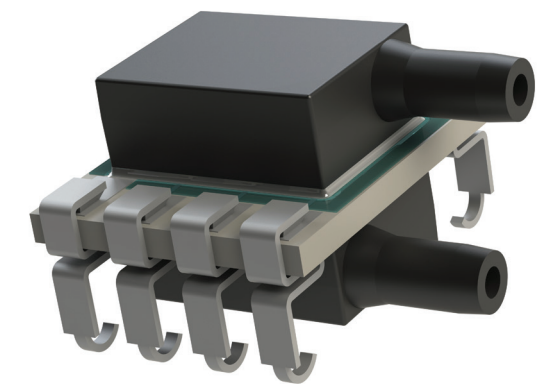
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**SENTIUM:** Merit Sensor products incorporate a proprietary Sentium® technology developed to provide a best-in-class operating temperature range (-40°C to 85°C) and superior stability.

**TECHNOLOGY:** Merit Sensor utilizes a piezoresistive Wheatstone bridge in a design that anodically bonds glass to a chemically etched silicon diaphragm. All products are RoHS compliant.

**CAPABILITIES:** Merit Sensor designs, engineers, fabricates, dices, assembles, tests, sells and services die and packaged products from a state-of-the-art facility near Salt Lake City, Utah



**FEATURES**

<b>Low Pressure Range</b>	0.15 to 1 psi (10.3 to 68.9 mbar; 1.03 to 6.89 KPa; 4.2 to 27.7 inH <sub>2</sub> O)
<b>Medium Pressure Range</b>	5 psi to 30 psi (0.34 to 2.1 bar; 34.5 to 207 KPa)
<b>Type</b>	Differential (and Absolute at 15psi and 30psi)
<b>Media</b>	Clean, Dry Air and Non-corrosive Gases
<b>Packaging</b>	Tape and Reel
<b>Customization</b>	Sensitivity, Resistance, Bridge, Constraint, etc.

**BENEFITS**

<b>Performance</b>	Enjoy best-in-class performance due to Merit's proprietary Sentium technology
<b>Cost</b>	Save money over time with high-performing die
<b>Security</b>	Feel confident doing business with an experienced company backed by a solid parent company (NASDAQ: MMSI)
<b>Speed</b>	Get to market quickly with creative and flexible solutions
<b>Service</b>	Experience prompt, personal and professional support

**1400 Family Part Number Configurator**

14XX-XXXX-XX

- Bridge**  
01 = Open  
02 = Closed
- Pressure**  
P15 = .15psi  
P30 = .30psi  
1P0 = 1.0psi  
005 = 5.0psi  
015 = 15psi  
030 = 30psi
- Pin Type**  
1 = J-lead
- Port**  
1 = Dual horizontal, facing same side
- Reference**  
D = Differential  
A = Absolute (15 and 30 psi only)



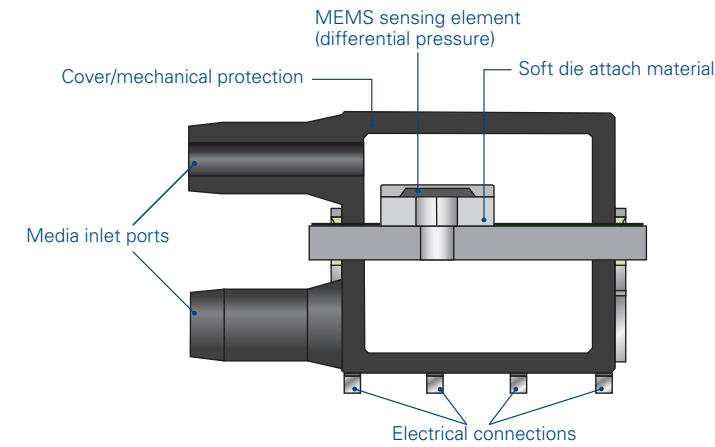
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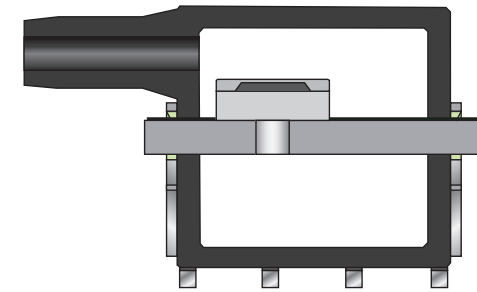
**SPECIFICATIONS**

Parameter	Minimum	Typical	Maximum	Units	Notes
<b>Electrical</b>					
Excitation (I <sub>n</sub> )		5	15	V	Maximum: 3mA
Impedance	4000	5000	6000	Ω	
Operating Temperature	-40		85	°C	
Storage Temperature	-55		100	°C	
<b>Performance (0.15psi to 1.00psi)</b>					
Offset	-10	0	10	mV/V	Zero Pressure; gage only; @25°C
Non-linearity	-0.25	0	0.25	% FSO	Best Fit Straight Line; @25°C
Pressure Hysteresis	-0.1	0	0.1	% FSO	@25°C
Temp Coeff – Zero	-20	0	20	μV/V/°C	-25°C to 75°C
Temp Coeff – Resistance	2000	2500	3000	PPM/°C	-25°C to 75°C
Temp Coeff – Sensitivity (0.15psi)	-2500	-3000	-3500	PPM/°C	-25°C to 75°C
Temp Coeff – Sensitivity (0.2psi – 1psi)	-2000	-2500	-3000	PPM/°C	-25°C to 75°C
Long-Term Stability	-0.25	0	0.25	% FSO	@125°C
Proof Pressure	5X				Full scale pressure
Burst Pressure	10psi				
<b>Performance (5psi to 30psi)</b>					
Offset	-10	0	10	mV/V	Zero pressure; gage only; @25°C
Non-linearity	-0.25	0	0.25	% FSO	Best Fit Straight Line; @25°C
Pressure Hysteresis	-0.1	0	0.1	% FSO	@25°C
Temp Coeff – Zero	-20	0	20	μV/V/°C	-40°C to 85°C
Temp Coeff – Resistance	2500	3100	3500	PPM/°C	-40°C to 85°C
Temp Coeff – Sensitivity	-1500	-2000	-2500	PPM/°C	-40°C to 85°C
Long-Term Stability	-0.1	0	0.1	% FSO	
Burst Pressure	10X				Full scale pressure
<b>Full Scale Output (@ 5 volts)</b>					
0.15psi (4 inH <sub>2</sub> O; 1.03 KPa)	30	37.5	60	mV	
0.30psi (8.3 inH <sub>2</sub> O; 2.1 KPa)	36	45	54	mV	
1.00psi (27 inH <sub>2</sub> O; 6.9 KPa)	40	50	60	mV	
5 psi (0.34 bar; 34.5 KPa)	107	133	160	mV	
15 psi (1 bar; 103 KPa)	120	150	180	mV	
30 psi (2.1 bar; 207 KPa)	128	160	192	mV	
<b>Media Compatibility</b>					
For Use with non-corrosive dry gases					
Solder temperature: max 250 °C, 5 seconds max					

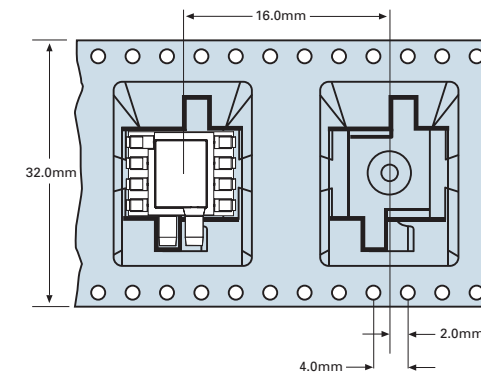
**CROSS SECTION FOR DIFFERENTIAL**



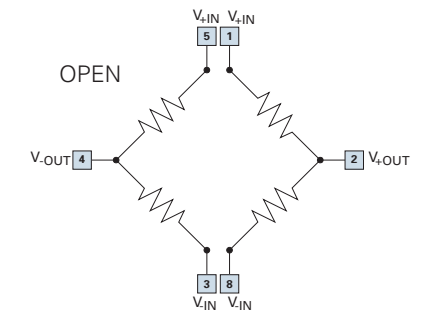
**CROSS SECTION FOR ABSOLUTE**



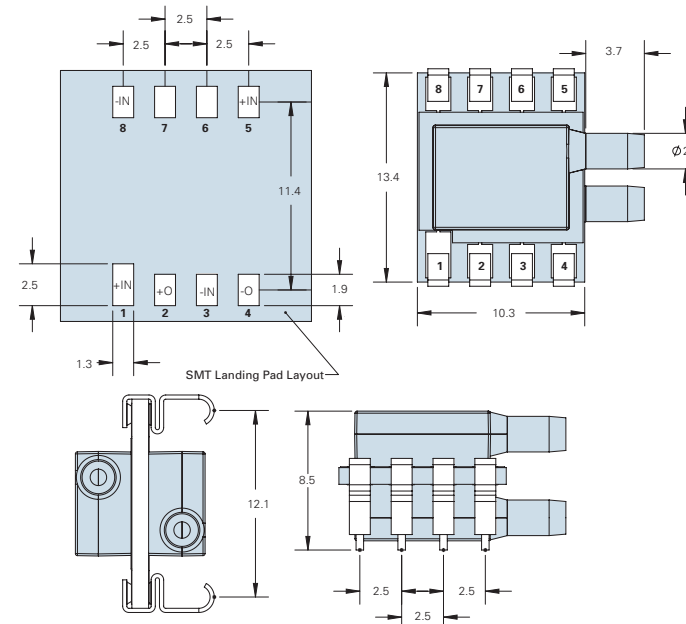
**PACKAGING**



**SENSOR BRIDGE Pin-out**



**DIMENSIONS (millimeters)**

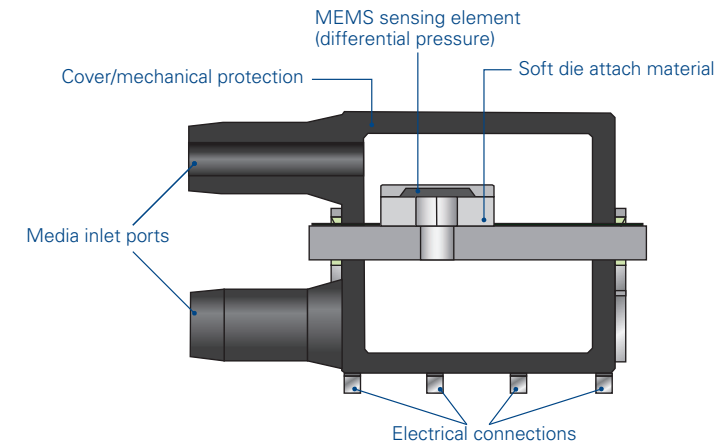


Device Pinout	Open	Close
P1	+IN	+IN
P2	+O	+O
P3	-IN	-IN
P4	-O	-O
P5	+IN	N/C
P6	N/C	N/C
P7	N/C	N/C
P8	-IN	N/C

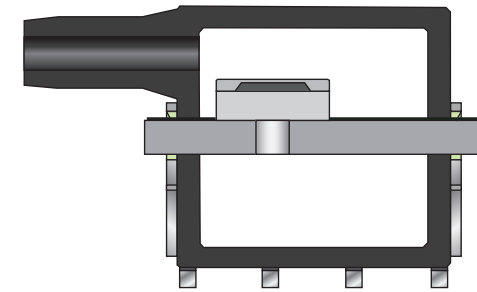
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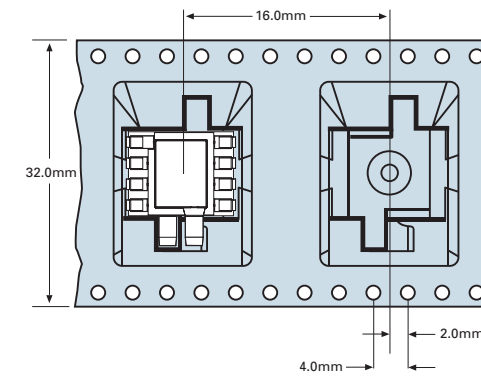
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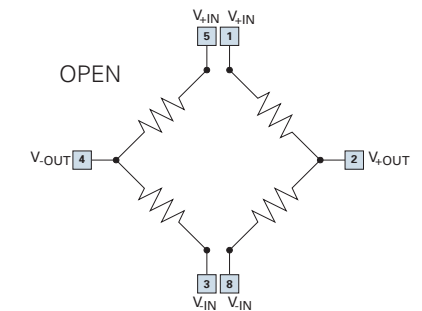
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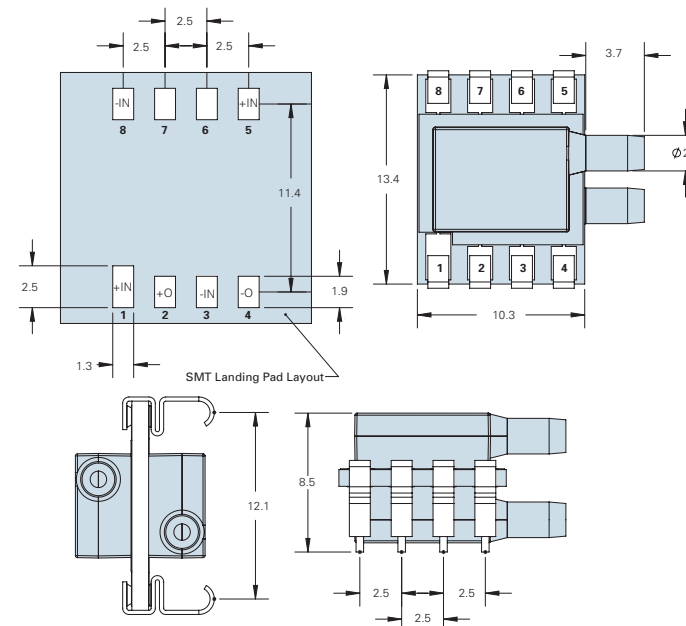
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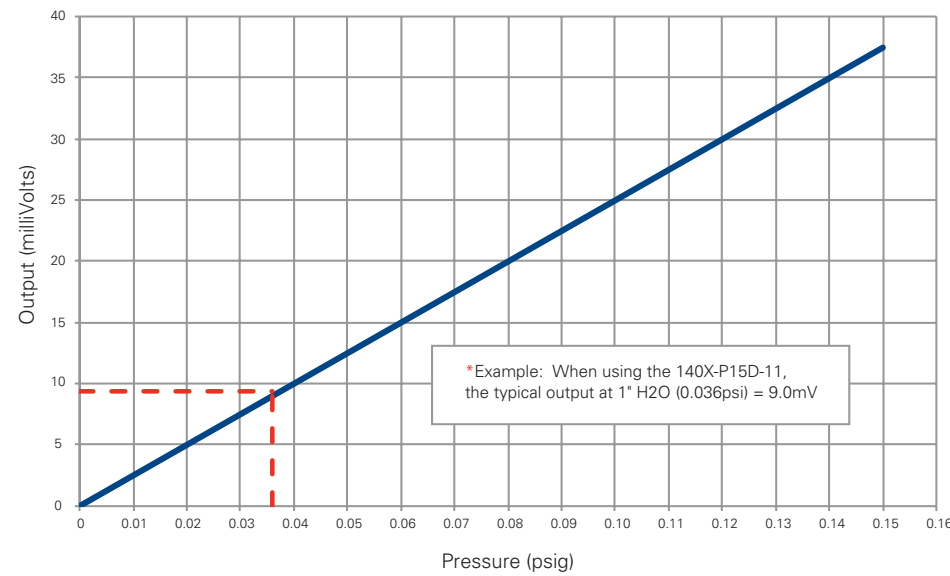


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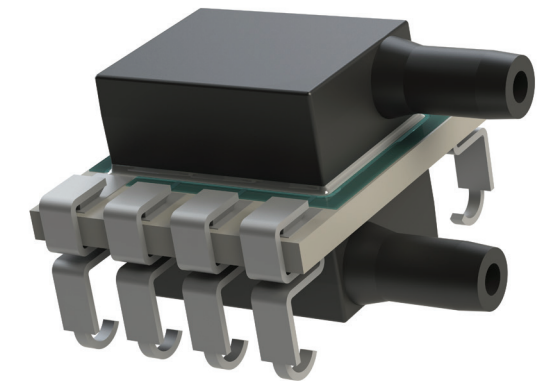
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