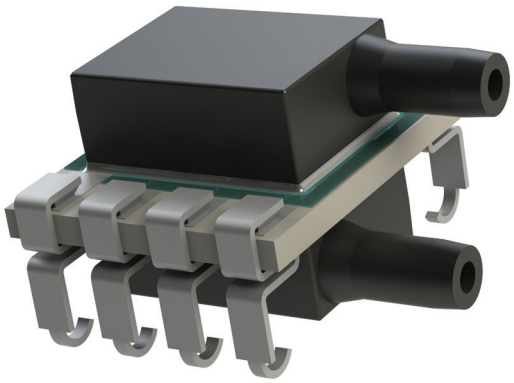
LP Series - Uncompensated is a surface mountable pressure sensor package with an uncompensated output suitable for **ultra-low pressure sensing applications.**

COMPANY: Merit Sensor is a leader in piezoresistive pressure sensing and partners with clients to create high performing solutions for a variety of applications and industries.

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



RoHS Compliant

FEATURES

Low Pressure Range	0.15 to 1 psi (10.3 to 68.9 mbar; 1.03 to 6.89 KPa; 4.2 to 27.7 inH_2O)
Medium Pressure Range	5 psi to 30 psi (0.34 to 2.1 bar; 34.5 to 207 KPa)
Type	Differential (and Absolute at 15psi and 30psi)
Media	Clean, Dry Air and Non-corrosive Gases
Packaging	Tape and Reel
Customization	Sensitivity, Resistance, Bridge, Constraint, etc.

BENEFITS

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

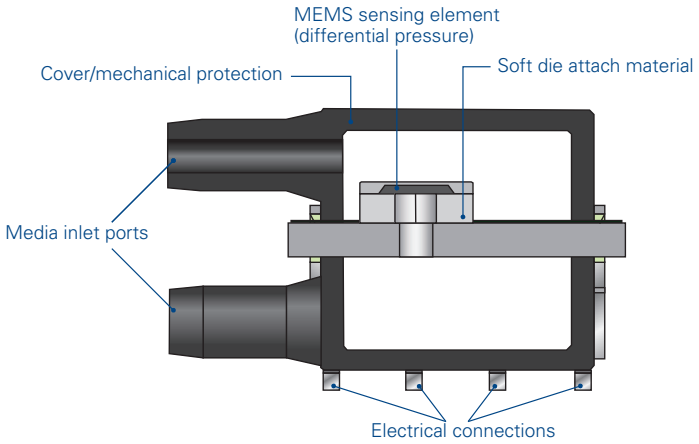
Reference
D = Differential
A = Absolute (15 and 30 psi only)

MERIT SENSOR™

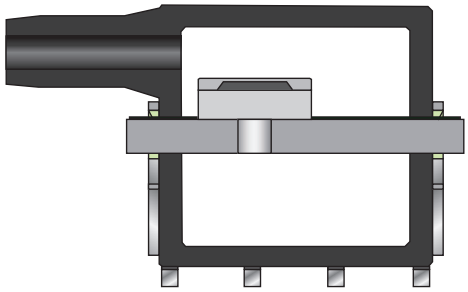
SPECIFICATIONS

Parameter	Minimum	Typical	Maximum	Units	Notes
Electrical					
Excitation (In)		5	15	V	Maximum: 3mA
Impedance	4000	5000	6000	Ω	
Operating Temperature	-40		85	°C	
Storage Temperature	-55		100	°C	
Performance (0.15psi to 1.00psi)					
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				
Performance (5psi to 30psi)					
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
Full Scale Output (@ 5 volts)					
0.15psi (4 inH_2O; 1.03 KPa)	30	37.5	60	mV	
0.30psi (8.3 inH_2O; 2.1 KPa)	36	45	54	mV	
1.00psi (27 inH_2O; 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	
Media Compatibility					
For Use with non-corrosive dry gases Solder temperature: max 250 °C, 5 seconds max					

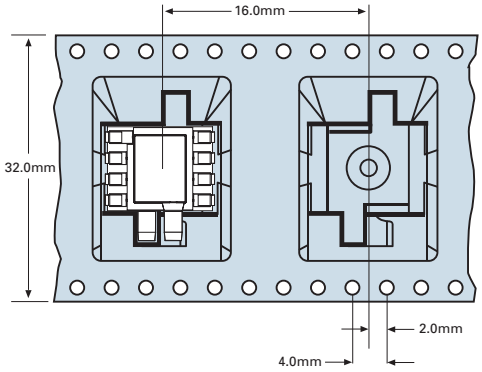
CROSS SECTION FOR DIFFERENTIAL



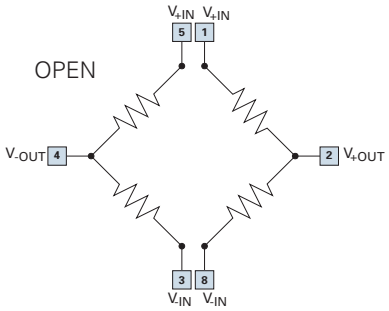
CROSS SECTION FOR ABSOLUTE



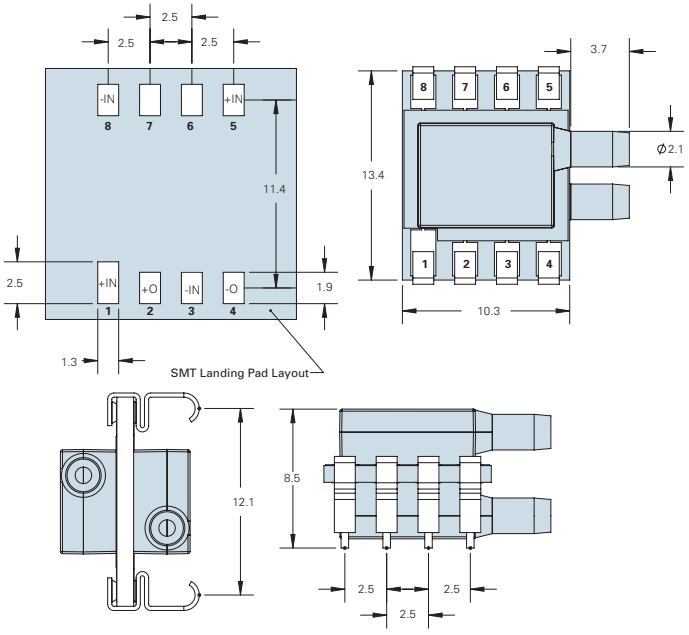
PACKAGING



SENSOR BRIDGE Pin-out



DIMENSIONS (millimeters)

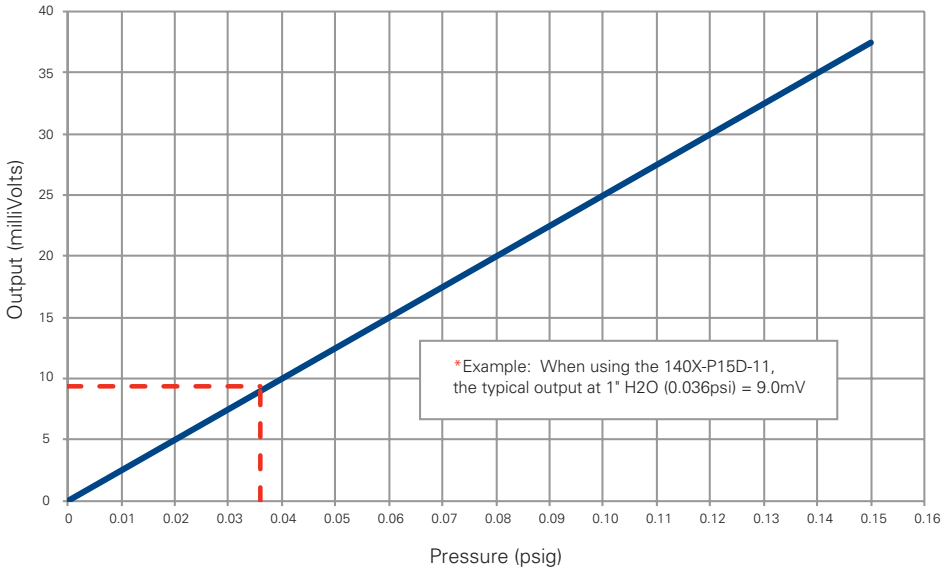


Device Pinout	Open	Close
P1	+IN	+IN
P2	+O	+O
P3	-IN	-IN
P4	-O	-O
P5	+IN	N/C
P6	N/C	N/C
P7	N/C	N/C
P8	-IN	N/C

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

V_{out} = (250 * P) + Offset ± Error

This graph assumes offset = 0mV, error = 0mV, V_s = 5.0V, and TEMP = 25°C



Merit Sensor owns and operates a MEMS wafer fab, which enables the production of customized piezoresistive pressure sensors for medical, industrial, and automotive applications. We help you get to market quickly with creative and flexible solutions and provide prompt, personal, and professional customer support.

MERIT SENSOR™

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