



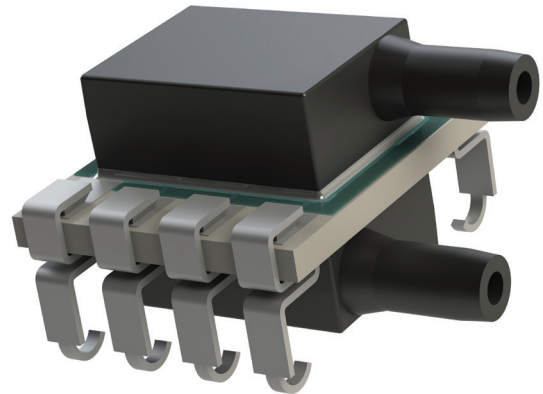
LP Series - Uncompensated is a surface mountable pressure sensor package with an uncompensated output suitable for ultra-low pressure sensing applications.

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



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 inH2O)
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.

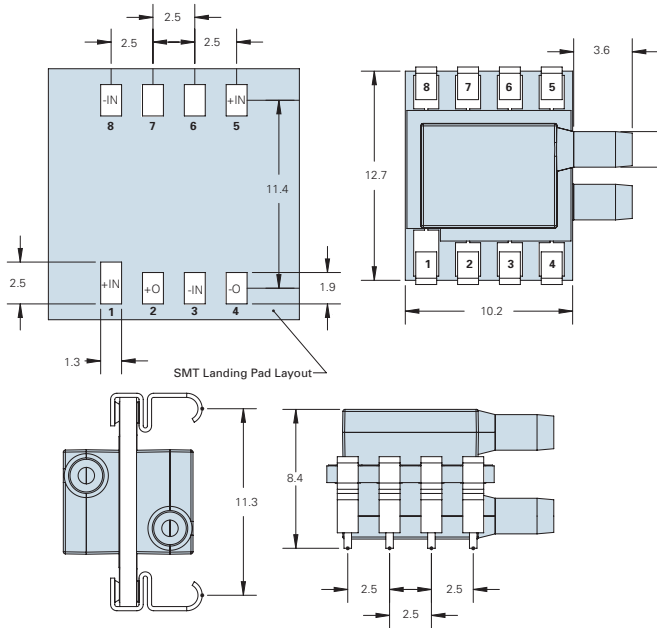
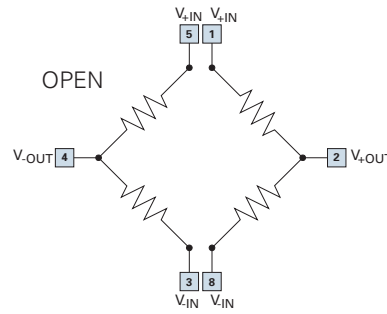
BENEFITS

- 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

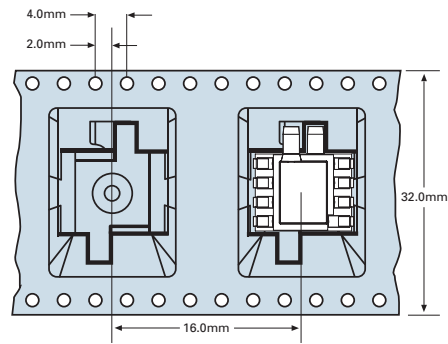
1400 Family Part Number Configurator
Bridge: 01 = Open, 02 = Closed
Pressure: P15 = .15psi, P30 = .30psi, 1P0 = 1.0psi, 005 = 5.0psi, 015 = 15psi, 030 = 30psi
Pin Type: 1 = J-lead
Port: 1 = Dual horizontal, facing same side
Reference: D = Differential, A = Absolute (15 and 30 psi only)

**SPECIFICATIONS**

Parameter	Minimum	Typical	Maximum	Units	Notes
<b>Electrical</b>					
Excitation (In)		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	45	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 gasses					
Solder temperature: max 250 °C, 5 seconds max					

**DIMENSIONS (millimeters)**

**SENSOR BRIDGE Pin-out**


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

**PACKAGING AND SHIPPING**

**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°C

