



# MINIATURE HIGH TEMPERATURE PRESSURE TRANSDUCER

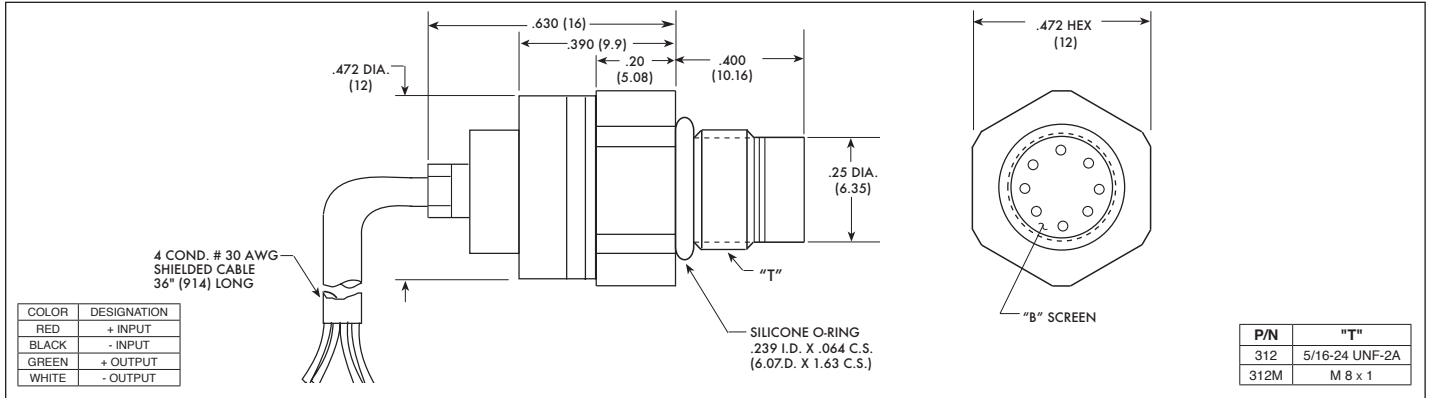
## HEM-312 (M) SERIES

- Wide Temperature Capability  
-65°F To 450°F
- High Natural Frequencies
- Robust Construction
- Silicon on Silicon Integrated Sensor **VIS**<sup>®</sup>
- Excellent Stability
- 5/16-24 UNF-2A or M8 x 1 Thread

The HEM-312 is a miniature threaded pressure transducer. The hexagonal head and o-ring seal make it easy to mount and simple to apply. The HEM-312 utilizes a flush metal diaphragm as a force collector. A solid state piezoresistive sensing element is located immediately behind this metal diaphragm which is protected by a metal screen. Force transfer is accomplished via non-compressible silicone oil. This sensing sub assembly is welded to a stainless steel body. Use of high temperature materials allows for use at temperatures up to 450°F (232°C). This advanced construction results in a highly stable, reliable and rugged instrument with all the advantages of significant miniaturization, excellent repeatability, low power consumption, etc. The miniaturization process also yields a marked increase in the natural frequencies of the transducers, making them suitable for use in shock pressure measurements and blast pressure wave studies.



Kulite recommends the **KSC Series** of signal conditioners to maximize the measurement capability of the HEM-312 transducer.



	35 500	70 1000	170 2500	350 5000	700 BAR 10000 PSI
<b>INPUT</b>					
Pressure Range					
Operational Mode	Absolute, Sealed Gage				
Over Pressure	1.5 Times Rated Pressure to a Max. of 15000 PSI (1050 BAR)				
Burst Pressure	3 Times Rated Pressure to a Max. of 25000 PSI (1700 BAR)				
Pressure Media	Any Liquid or Gas Compatible With 15-5 PH or 316 Stainless Steel (All Media May Not Be Suitable With O-Ring Supplied)				
Rated Electrical Excitation	10 VDC				
Maximum Electrical Excitation	12 VDC				
Input Impedance	1000 Ohms (Min.)				
Output Impedance	1000 Ohms (Nom.)				
Full Scale Output (FSO)	100mV				
Residual Unbalance	± 5 mV (Typ.)				
Combined Non-Linearity, Hysteresis and Repeatability	± 0.1% FSO BFSL (Typ.), ± 0.5% FSO (Max.)				
Resolution	Infinitesimal				
Natural Frequency of Sensor Without Screen (KHz) (Typ.)	Greater Than 400 KHz				
Acceleration Sensitivity % FS/g Perpendicular	1.1x10 <sup>-4</sup>	6.2x10 <sup>-5</sup>	2.6x10 <sup>-5</sup>	1.5x10 <sup>-5</sup>	1.3x10 <sup>-5</sup>
Insulation Resistance	100 Megohm Min. @ 50 VDC				
<b>ENVIRONMENTAL</b>					
Operating Temperature Range	-65°F to +450°F (-55°C to +232°C) (Short term use above 350°F / 177°C. Please consult factory.)				
Compensated Temperature Range	+80°F to +400°F (+25°C to +204°C) (Short term use above 350°F / 177°C. Please consult factory.)				
Thermal Zero Shift	± 1% FS/100° F (Typ.)				
Thermal Sensitivity Shift	± 1% /100° F (Typ.)				
Linear Vibration	10-2,000 Hz Sine, 100g. (Max.)				
Mechanical Shock	20g half Sine Wave 11μ sec. Duration				
<b>PHYSICAL</b>					
Electrical Connection	4 Conductor 30 AWG Shielded Cable 36" Long				
Weight	12 Grams (Max.) Excluding Cable				
Pressure Sensing Principle	Fully Active Four Arm Wheatstone Bridge Dielectrically Isolated Silicon on Silicon				
Mounting Torque	50 Inch-Pounds (Max.) 6Nm				

Note: Custom pressure ranges, accuracies and mechanical configurations available. Dimensions are in inches. Dimensions in parenthesis are in millimeters. All dimensions nominal. (K) Continuous development and refinement of our products may result in specification changes without notice. Copyright © 2014 Kulite Semiconductor Products, Inc. All Rights Reserved. Kulite miniature pressure transducers are intended for use in test and research and development programs and are not necessarily designed to be used in production applications. For products designed to be used in production programs, please consult the factory.