



MINIATURE HIGH PRESSURE PRESSURE TRANSDUCER

HKM-312 (M) SERIES

- Excellent Stability
- All Welded Construction
- Robust Construction
- Silicon on Silicon Integrated Sensor **VIS**[®]
- High Natural Frequencies
- 5/16-24 UNF-2A or M8 X 1 Thread
- Intrinsically Safe Applications Available (i.e. IS-HKM-312)

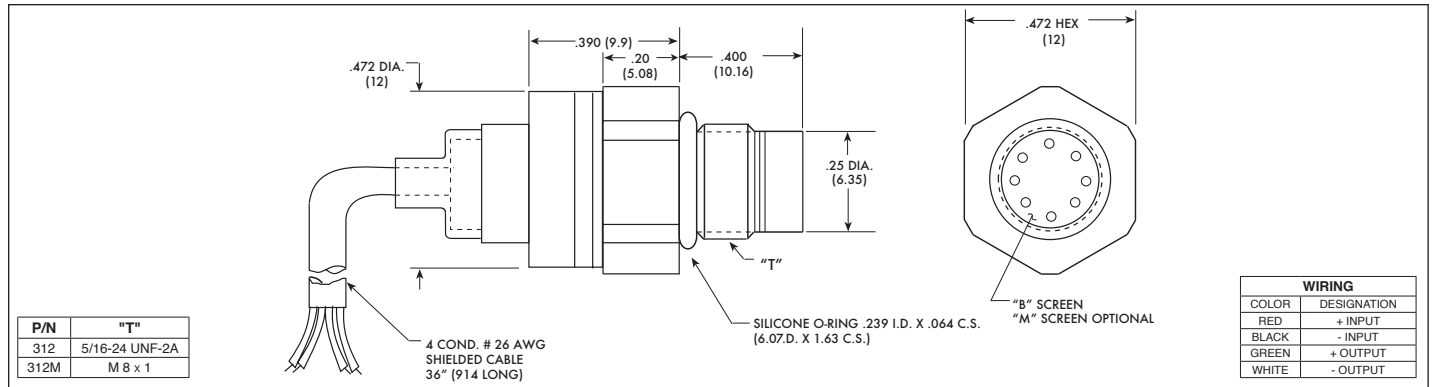


The HKM-312 is a miniature threaded pressure transducer. The hexagonal head and o-ring seal make it easy to mount and simple to apply.

The HKM-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.

This advanced construction results in a highly stable, reliable and rugged instrument with all the advantages of microcircuitry: 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 even in shock pressure measurements.

Kulite recommends the [KSC Series](#) of signal conditioners to maximize the measurement capability of the HKM-312 transducer.



INPUT	Pressure Range	17 250	35 500	70 1000	170 2500	350 5000	700 BAR 10000 PSI
	Operational Mode	Absolute, Sealed Gage					
	Over Pressure	2 Times Rated Pressure to 500 PSI (35 BAR), 1.5 Times Rated Pressure Above 500 PSI (35 BAR)					
	Burst Pressure	3 Times Rated Pressure					
	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/AC					
	Maximum Electrical Excitation	12 VDC/AC					
	Input Impedance	1000 Ohms (Min.)					
OUTPUT	Output Impedance	1000 Ohms (Nom.)					
	Full Scale Output (FSO)	100mV (Nom.)					
	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	2.2x10 ⁻⁴	1.1x10 ⁻⁴	6.2x10 ⁻⁵	2.4x10 ⁻⁵	1.5x10 ⁻⁵	1.3x10 ⁻⁵
	Insulation Resistance	100 Megohm Min. @ 50 VDC					
ENVIRONMENTAL	Operating Temperature Range	-20°F to +250°F (-29°C to +120°C)					
	Compensated Temperature Range	+80°F to +180°F (+25°C to +80°C) Any 100°F Range Within The Operating Range on Request					
	Thermal Zero Shift	± 1% FS/100° F (Typ.)					
	Thermal Sensitivity Shift	± 1% /100° F (Typ.)					
	Linear Vibration	10-2,000 Hz Sine, 100g. (Max.)					
PHYSICAL	Mechanical Shock	20g half Sine Wave 11 msec. Duration					
	Electrical Connection	4 Conductor 26 AWG Shielded Cable 36" Long					
	Weight	15 Grams (Max.) Excluding Cable					
	Pressure Sensing Principle	Fully Active Four Arm Wheatstone Bridge Dielectrically Isolated Silicon on Silicon					
Mounting Torque	50 Inch-Pounds (Max.) 6 Nm						

Note: Custom pressure ranges, accuracies and mechanical configurations available. Dimensions are in inches. Dimensions in parenthesis are in millimeters. All dimensions nominal. (M) 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.



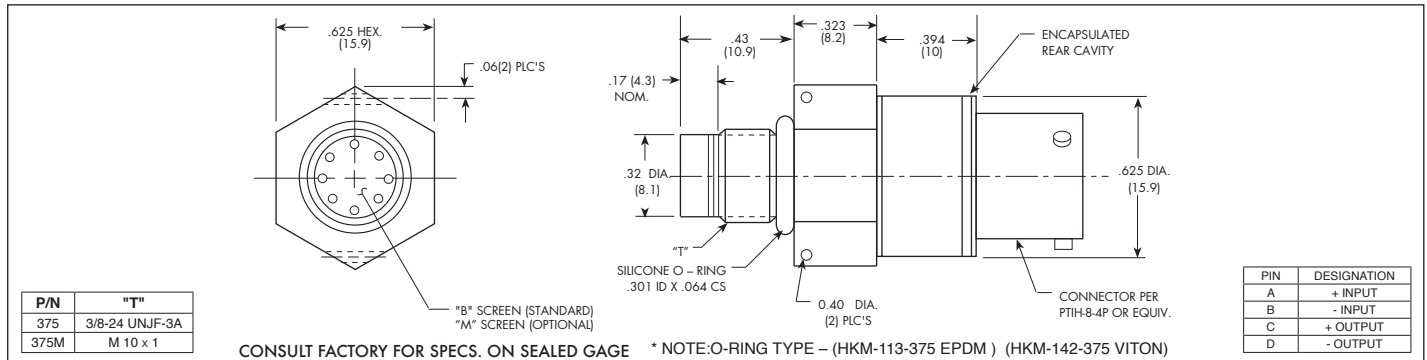
**METAL DIAPHRAGM
AUTOMOTIVE PRESSURE TRANSDUCERS**

**HKM-113-375 (M) (Braking Systems)
HKM-142-375 (M) (MAP Systems)**

- Easy Installation
- High Natural Frequency
- Silicon on Silicon Integrated Sensor **VIS®**
- 3/8-24 UNJF 3A or M 10 x 1 Thread
- Wide Temperature Range
- Compatible With Most Automotive Fluids
- Intrinsically Safe Applications Available
(i.e. IS-HKM-113-375 or IS-HKM-142-375)



Kulite recommends the **KSC Series** of signal conditioners to maximize the measurement capability of the HKM-113-375 and HKM-142-375 transducers.



	HKM-113-375				HKM-142-375				
	Pressure Range	3.5 50	7 100	17 250	35 500	70 1000	210 3000	350 5000	700 10000
Operational Mode	Absolute, Sealed Gage								
Over Pressure	2 Times Rated Pressure to 500 PSI (35 BAR), 1.5 Times Rated Pressure Above 500 PSI (BAR) to a Max of 25000 PSI (1724 BAR)								
Burst Pressure	3 Times Rated Pressure to a Max. of 25000 PSI (1724 BAR)								
Pressure Media	Any Liquid or Gas Compatible With 15-5 PH and 316 SS or Inconel 625								
Rated Electrical Excitation	10 VDC								
Maximum Electrical Excitation	12 VDC								
Input Impedance	1000 Ohms (Min.)								
Output Impedance	1000 Ohms (Nom.)								
Full Scale Output (FSO)	100 mV (Nom.)								
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 175 KHz								
Acceleration Sensitivity % FS/g Perpendicular	3.0x10 ⁻⁴	2.0x10 ⁻⁴	1.0x10 ⁻⁴	6.0x10 ⁻⁵	4.0x10 ⁻⁵	2.0x10 ⁻⁵	1.5x10 ⁻⁵	1.3x10 ⁻⁵	8.0x10 ⁻⁶
Insulation Resistance	100 Megohm Min. @ 50 VDC								
Operating Temperature Range	-65°F to +400°F (-55°C to +204°C)								
Compensated Temperature Range	-40°F to +350°F (-40°C to +175°C)			-40°F to +250°F (-40°C to +120°C)					
Thermal Zero Shift	± 1% FS/100°F (Typ.)								
Thermal Sensitivity Shift	± 1% /100°F (Typ.)								
Steady Acceleration and Linear Vibration	100g Peak, Sine up to 5000 Hz								
Humidity	100% Relative Humidity								
Mechanical Shock	100g half Sine Wave 11 msec. Duration								
Electrical Connection	PTIH-8-4P Connector or Equivalent								
Weight	21 Grams (Nom.)								
Pressure Sensing Principle	Fully Active Four Arm Wheatstone Bridge Dielectrically Isolated Silicon on Silicon								
Mounting Torque	80 Inch-Pounds								

Note: Custom pressure ranges, accuracies and mechanical configurations available. Dimensions are in inches. Dimensions in parenthesis are in millimeters. All dimensions nominal. (X) 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.



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HKM-375 (M) SERIES

- Excellent Stability
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- High Natural Frequencies
- 3/8-24 UNJF or M10 X 1 Thread
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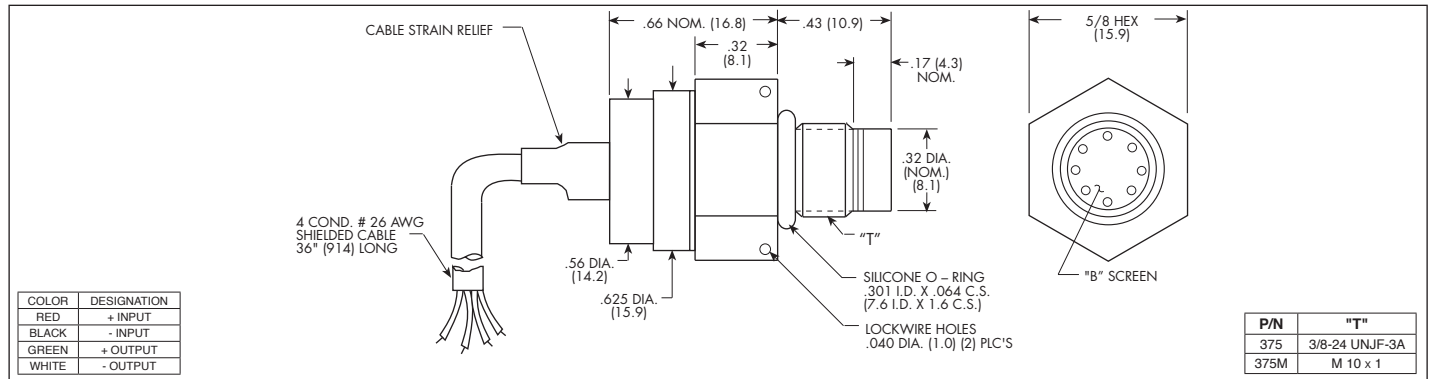


The HKM-375 is a miniature threaded pressure transducer. The hexagonal head and o-ring seal make it easy to mount and simple to apply.

The HKM-375 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.

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 even in shock pressure measurements.

Kulite recommends the [KSC Series](#) of signal conditioners to maximize the measurement capability of the HKM-375 transducer.



	7	17	35	70	170	350	700	1400 BAR
Pressure Range	100	250	500	1000	2500	5000	10000	20000 PSI
Operational Mode	Absolute, Sealed Gage							
Over Pressure	2 Times Rated Pressure to 1000 PSI (70 BAR) 1.5 Times Rated Pressure Above 1000 PSI to a Max. of 25000 PSI (1724 BAR)							
Burst Pressure	3 Times Rated Pressure to a Max. of 25000 PSI (1724 BAR)							
Pressure Media	Any Liquid or Gas Compatible with 15-5 PH and 316 Stainless Steel or Inconel 625 (All Media May Not Be Suitable with O-Ring Supplied)							
Rated Electrical Excitation	10 VDC/AC							
Maximum Electrical Excitation	12 VDC/AC							
Input Impedance	1000 Ohms (Min.)							
Output Impedance	1000 Ohms (Nom.)							
Full Scale Output (FSO)	100mV (Nom.)							
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	2.0x10 ⁻⁴	2.2x10 ⁻⁴	1.1x10 ⁻⁴	6.2x10 ⁻⁵	2.6x10 ⁻⁵	1.5x10 ⁻⁵	1.3x10 ⁻⁵	8.0x10 ⁻⁶
Insulation Resistance	100 Megohm Min. @ 50 VDC							
Operating Temperature Range	-65°F to +250°F (-55°C to +120°C)							
Compensated Temperature Range	+80°F to +180°F (+25°C to +80°C) Any 100°F Range Within the Operating Range on Request							
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 11 msec. Duration							
Electrical Connection	4 Conductor 26 AWG Shielded Cable 36" Long							
Weight	17 Grams (Max.) Excluding Cable							
Pressure Sensing Principle	Fully Active Four Arm Wheatstone Bridge Dielectrically Isolated Silicon on Silicon							
Mounting Torque	80 Inch-Pounds (Max.) 9 Nm							

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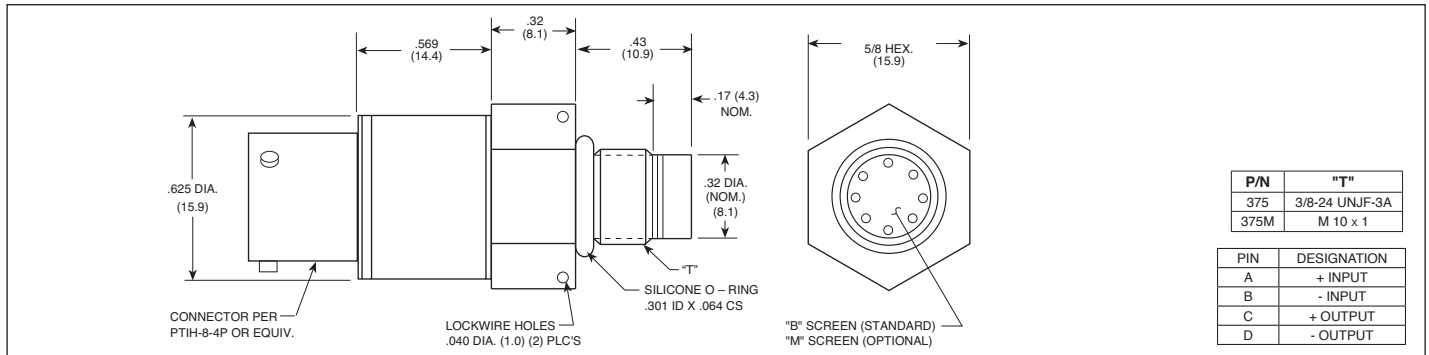
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	7 100	17 250	35 500	70 1000	170 2500	350 5000	700 10000	1400 BAR 20000 PSI
INPUT								
Pressure Range	Absolute, Sealed Gage							
Operational Mode	2 Times Rated Pressure to 1000 PSI (70 BAR) 1.5 Times Rated Pressure Above 1000 PSI to a Max. of 25000 PSI (1724 BAR)							
Over Pressure	3 Times Rated Pressure to a Max. of 25000 PSI (1724 BAR)							
Burst Pressure	Any Liquid or Gas Compatible with 15-5 PH and 316 Stainless Steel or Inconel 625 (All Media May Not Be Suitable with O-Ring Supplied)							
Pressure Media	10 VDC/AC							
Rated Electrical Excitation	12 VDC/AC							
Maximum Electrical Excitation	1000 Ohms (Min.)							
Input Impedance	1000 Ohms (Nom.)							
Output Impedance	100mV (Nom.)							
Full Scale Output (FSO)	± 5 mV (Typ.)							
Residual Unbalance	± 0.1% FSO BFSL (Typ.), ± 0.5% FSO (Max.)							
Combined Non-Linearity, Hysteresis and Repeatability	Infinitesimal							
Resolution	Greater Than 400 KHz							
Natural Frequency of Sensor Without Screen (KHz) (Typ.)	2.0x10 ⁻⁴	2.2x10 ⁻⁴	1.1x10 ⁻⁴	6.2x10 ⁻⁵	2.6x10 ⁻⁵	1.5x10 ⁻⁵	1.3x10 ⁻⁵	8.0x10 ⁻⁶
Acceleration Sensitivity % FS/g Perpendicular	100 Megohm Min. @ 50 VDC							
Insulation Resistance	-65°F to +250°F (-55°C to +120°C)							
Operating Temperature Range	+80°F to +180°F (+25°C to +80°C) Any 100°F Range Within The Operating Range on Request							
Compensated Temperature Range	± 1% FS/100° F (Typ.)							
Thermal Zero Shift	± 1% /100° F (Typ.)							
Thermal Sensitivity Shift	10-2,000 Hz Sine, 100g. (Max.)							
Linear Vibration	100% Relative Humidity							
Humidity	20g half Sine Wave 11 msec. Duration							
Mechanical Shock	PTIH-8-4P Connector or Equivalent							
Electrical Connection	17 Grams (Max.)							
Weight	Fully Active Four Arm Wheatstone Bridge Dielectrically Isolated Silicon on Silicon							
Pressure Sensing Principle	80 Inch-Pounds (Max.) 9 Nm							
Mounting Torque								

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