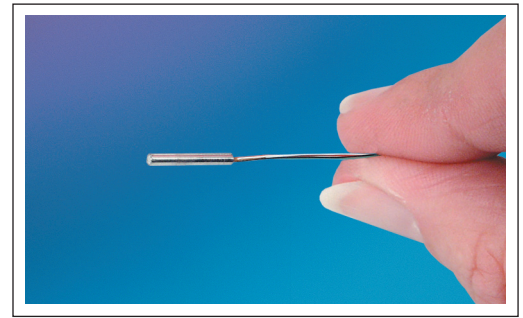


# kulite®

## CRYOGENIC ULTRAMINIATURE PRESSURE TRANSDUCER

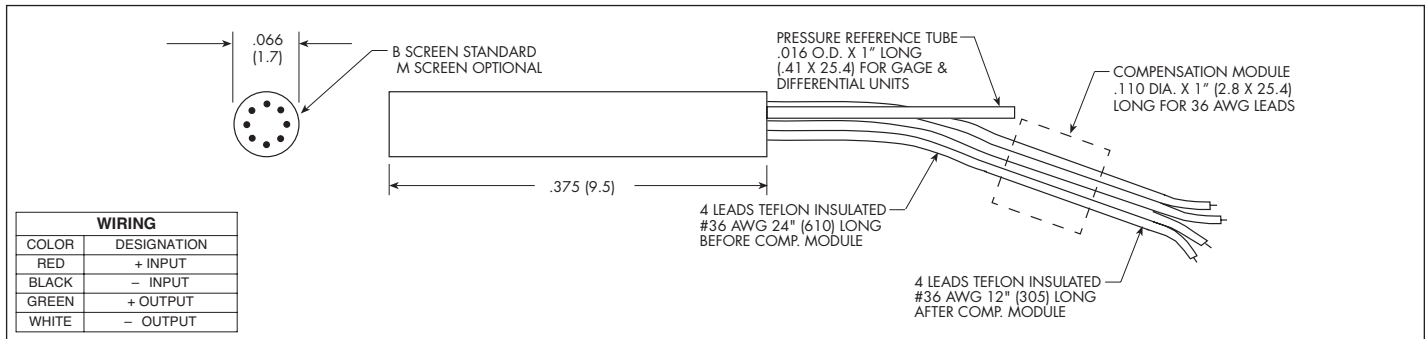
### CCQ-062 SERIES

- Cryogenic Operation -320°F to +250°F (-195.5°C to +120°C)
- Ideal For Turbine Engine Probes and Wind Tunnel Applications
- 50 Year History Of Successful Applications In Wind Tunnel And Flight Test Programs
- Patented Silicon on Silicon Integrated Sensor **VIS**®
- Size And Shape Ideal For Incorporation In User Designed Probes
- Excellent Static And Dynamic Performance



Similar in design to the XCQ-062 Series, these sensors are specifically intended for use in cryogenic wind tunnels. The extremely good low temperature stability of Kulite Sensors make them ideally suited for this application.

Kulite recommends the [KSC Series](#) of signal conditioners to maximize the measurement capability of the CCQ-062 transducer.



INPUT	Pressure Range	0.35 5	0.7 10	1.7 25	3.5 50	7 100	17 250	35 500	70 BAR 1000 PSI	
	Operational Mode	Absolute, Gage, Differential			Absolute, Gage, Sealed Gage, Differential			Absolute, Sealed Gage		
	Over Pressure	2 Times Rated Pressure								
	Burst Pressure	3 Times Rated Pressure								
	Pressure Media	Most Nonconductive, Noncorrosive Liquids or Gases								
	Rated Electrical Excitation	10 VDC								
	Maximum Electrical Excitation	12 VDC								
	Input Impedance	1000 Ohms (Min.)								
OUTPUT	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.)	150	175	240	300	380	550	700	1000	
	Acceleration Sensitivity % FS/g Perpendicular	1.5x10 <sup>-3</sup>	1.0x10 <sup>-3</sup>	5.0x10 <sup>-4</sup>	3.0x10 <sup>-4</sup>	1.5x10 <sup>-4</sup>	1.0x10 <sup>-4</sup>	6.0x10 <sup>-5</sup>	4.5x10 <sup>-5</sup>	
	Insulation Resistance	100 Megohm Min. @ 50 VDC								
ENVIRONMENTAL	Operating Temperature Range	-320°F to +250°F (-195.5°C to +120°C)								
	Compensated Temperature Range	-300°F to +100°F (-184.4°C to +37.5°C)								
	Thermal Zero Shift	± 2% FS/100°F (Typ.) (± 3% FS/100°F Max.)				± 1% FS/100°F (Typ.) (± 2% FS/100°F Max.)				
	Thermal Sensitivity Shift	± 2% /100°F (Typ.) (± 3% /100°F Max.)				± 1% /100°F (Typ.) (± 2% /100°F Max.)				
	Linear Vibration	10-2,000 Hz Sine, 100g. (Max.)								
	Mechanical Shock	20g half Sine Wave 11 msec. Duration								
PHYSICAL	Electrical Connection	4 Leads 36 AWG 36" Long								
	Weight	.2 Gram (Nom.) Excluding Module and Leads								
	Pressure Sensing Principle	Fully Active Four Arm Wheatstone Bridge Dielectrically Isolated Silicon on Silicon								

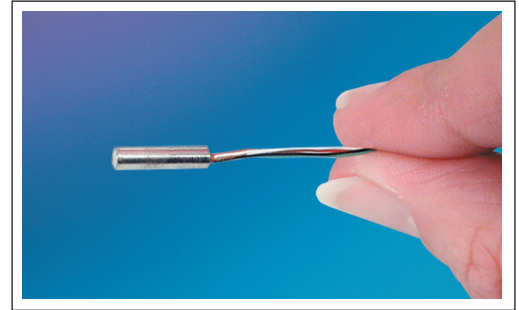
Note: Custom pressure ranges, accuracies and mechanical configurations available. Dimensions are in inches. Dimensions in parenthesis are in millimeters. All dimensions nominal. (I) Continuous development and refinement of our products may result in specification changes without notice. Copyright © 2014 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.



## CRYOGENIC STANDARD VERSION MINIATURE PRESSURE TRANSDUCER

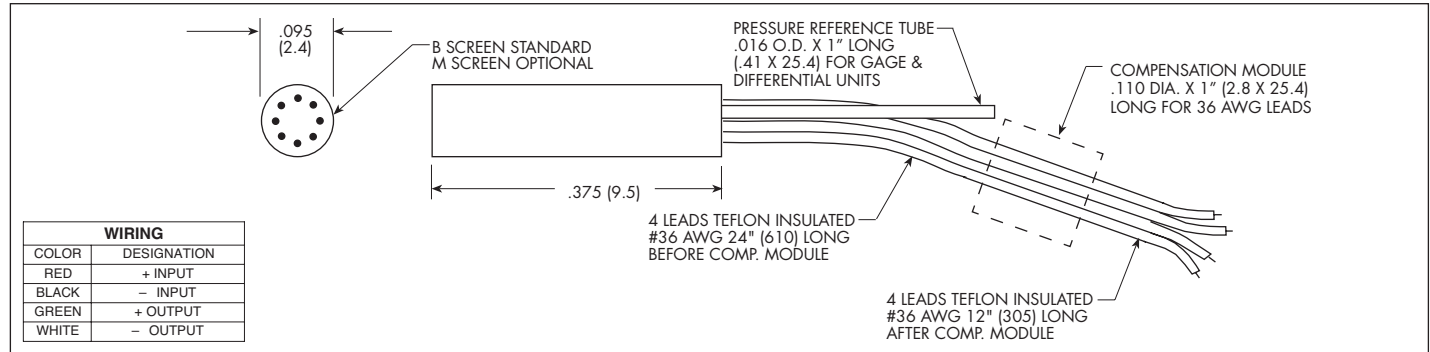
### CCQ-093 SERIES

- Cryogenic Operation -320°F to +250°F (-195.5°C to +120°C)
- Ideal For Turbine Engine Probes and Wind Tunnel Applications
- 50 Year History Of Successful Applications In Wind Tunnel And Flight Test Programs
- Patented Silicon on Silicon Integrated Sensor **VIS**<sup>®</sup>
- Size And Shape Ideal For Incorporation In User Designed Probes
- Excellent Static And Dynamic Performance



Similar in design to the XCQ-093 Series, these sensors are specifically intended for use in cryogenic wind tunnels. The extremely good low temperature stability of Kulite Sensors make them ideally suited for this application.

Kulite recommends the [KSC Series](#) of signal conditioners to maximize the measurement capability of the CCQ-093 transducer.



INPUT	Pressure Range	0.35 5	0.7 10	1.7 25	3.5 50	7 100	17 250	35 500	70 BAR 1000 PSI	
	Operational Mode	Absolute, Gage, Differential			Absolute, Gage, Sealed Gage, Differential			Absolute, Sealed Gage		
	Over Pressure	2 Times Rated Pressure								
	Burst Pressure	3 Times Rated Pressure								
	Pressure Media	Most Nonconductive, Noncorrosive Liquids or Gases								
	Rated Electrical Excitation	10 VDC								
	Maximum Electrical Excitation	12 VDC								
	Input Impedance	1000 Ohms (Min.)								
OUTPUT	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.)	150	175	240	300	380	550	700	1000	
	Acceleration Sensitivity % FS/g Perpendicular	1.5x10 <sup>-3</sup>	1.0x10 <sup>-3</sup>	5.0x10 <sup>-4</sup>	3.0x10 <sup>-4</sup>	1.5x10 <sup>-4</sup>	1.0x10 <sup>-4</sup>	6.0x10 <sup>-5</sup>	4.5x10 <sup>-5</sup>	
	Insulation Resistance	100 Megohm Min. @ 50 VDC								
ENVIRONMENTAL	Operating Temperature Range	-320°F to +250°F (-195.5°C to +120°C)								
	Compensated Temperature Range	-300°F to +100°F (-184.4°C to +37.5°C)								
	Thermal Zero Shift	± 2% FS/100°F (Typ.) (± 3% FS/100°F Max.)				± 1% FS/100°F (Typ.) (± 2% FS/100°F Max.)				
	Thermal Sensitivity Shift	± 2% /100°F (Typ.) (± 3% /100°F Max.)				± 1% /100°F (Typ.) (± 2% /100°F Max.)				
	Linear Vibration	10-2,000 Hz Sine, 100g. (Max.)								
	Mechanical Shock	20g half Sine Wave 11 msec. Duration								
PHYSICAL	Electrical Connection	4 Leads 36 AWG 36" Long								
	Weight	.4 Gram (Nom.) Excluding Module and Leads								
	Pressure Sensing Principle	Fully Active Four Arm Wheatstone Bridge Dielectrically Isolated Silicon on Silicon								

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