



# HIGH TEMPERATURE 5 VDC OUTPUT PRESSURE TRANSDUCER

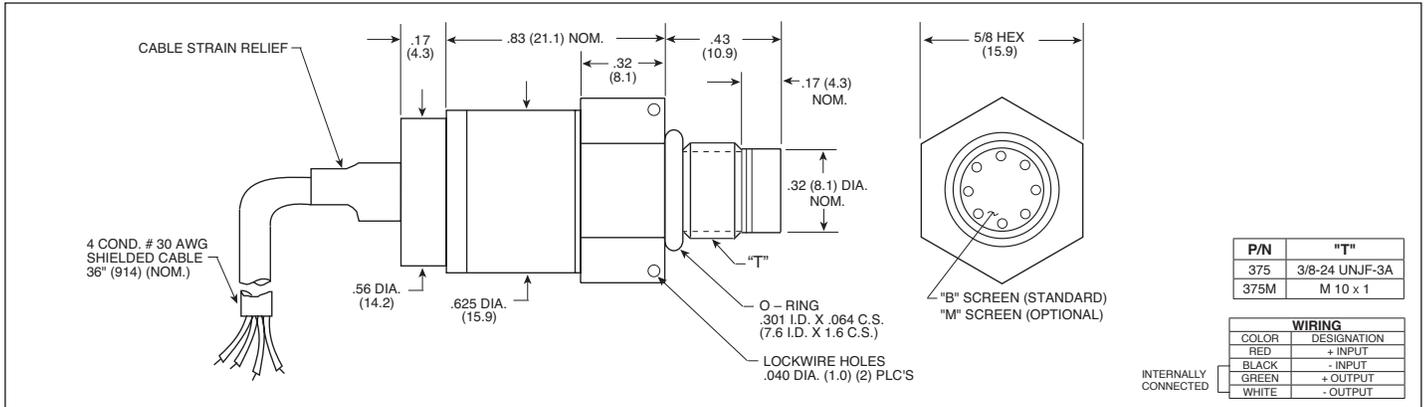
## ETM-HT-400-375 (M) SERIES

- 5 VDC Output
- 350°F Temperature Capability
- Hybrid Microelectronic Regulator-Amplifier
- Flush Diaphragm
- Silicon on Silicon Integrated Sensor **VIS**<sup>®</sup>
- All Welded Construction
- Secondary Containment On Absolute And Sealed Gage Units
- Aerospace Quality Components
- 3/8-24 UNJF or M10 X 1 Thread
- 4 Wire



ETM-HT-400-375 Series transducers are miniature, threaded flush diaphragm instruments. They utilize a flush metal diaphragm as a force collector. Force is transferred to a solid state piezoresistive sensing element via a thin intervening film of non-compressible silicone oil. This sensing sub-assembly is protected from mechanical damage by a solid screen which has been

shown to have minimal influence on the frequency response of the sensor. For applications where a true flush diaphragm is needed, Kulite will supply these transducers without the screen. Incorporation of a Kulite proprietary electronics module within the main body of this product allows for operation from an unregulated power supply of  $12 \pm 4$  VDC or  $28 \pm 4$  VDC. Standard output is a stable, low noise .5 to 5 VDC signal.



|                      | 35<br>500   | 70<br>1000  | 170<br>2500          | 350<br>5000          | 700<br>10000         | 1400 BAR<br>20000 PSI |                      |
|----------------------|---|---|----------------------|----------------------|----------------------|-----------------------|----------------------|
| <b>INPUT</b>         | Pressure Range  |   |                      |                      |                      |                       |                      |
|                      | 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 20000 PSI (1400 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                                      |                      |                      |                      |                       |                      |
|                      | Maximum Electrical Current                              | 25 mA   |                      |                      |                      |                       |                      |
|                      | Rated Electrical Excitation                             | 12 ± 4 VDC or 28 ± 4 VDC  |                      |                      |                      |                       |                      |
| <b>OUTPUT</b>        | Full Scale Reading                                      | 5 VDC ± 150mV   |                      |                      |                      |                       |                      |
|                      | Output Impedance  | 200 Ohms (Max.)   |                      |                      |                      |                       |                      |
|                      | Bandwidth (-3dB)  | DC to 3 KHz   |                      |                      |                      |                       |                      |
|                      | Residual Unbalance                                      | 500 mV ± 100 mV   |                      |                      |                      |                       |                      |
|                      | 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  |                      |                      |                      |                       |                      |
| <b>ENVIRONMENTAL</b> | 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>  | 8.0x10 <sup>-6</sup> |
|                      | Insulation Resistance                                   | 100 Megohm Min. @ 50 VDC  |                      |                      |                      |                       |                      |
|                      | Operating Temperature Range                             | -65°F to +350°F (-55°C to +175°C)   |                      |                      |                      |                       |                      |
|                      | Compensated Temperature Range                           | -40°F to +350°F (-40°C to +175°C) Other Ranges Quoted on Request  |                      |                      |                      |                       |                      |
|                      | Thermal Zero Shift                                      | ± 1% FS/100° F (Typ.)   |                      |                      |                      |                       |                      |
|                      | Thermal Sensitivity Shift                               | ± 1% /100° F (Typ.)   |                      |                      |                      |                       |                      |
|                      | Linear Vibration  | 20g Peak, Sine 10 to 2000 Hz  |                      |                      |                      |                       |                      |
| Mechanical Shock     | 20g Half Sine Wave 11 msec. Duration                    |   |                      |                      |                      |                       |                      |
| <b>PHYSICAL</b>      | Electrical Connection                                   | 4 Conductor 30 AWG Shielded Cable 36" Long  |                      |                      |                      |                       |                      |
|                      | Weight  | 24.5 Grams (Max.) Excluding Cable   |                      |                      |                      |                       |                      |
|                      | Pressure Sensing Principle                              | Fully Active Four Arm Wheatstone Bridge Dielectrically Isolated Silicon on Silicon                                    |                      |                      |                      |                       |                      |
|                      | Mounting Torque   | 80 Inch-Pounds (Max.)   |                      |                      |                      |                       |                      |

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