

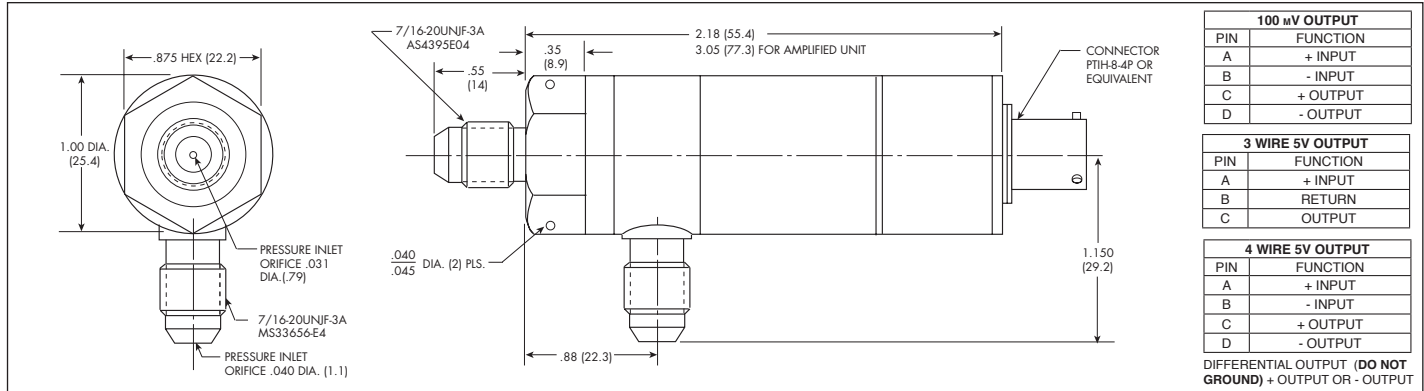
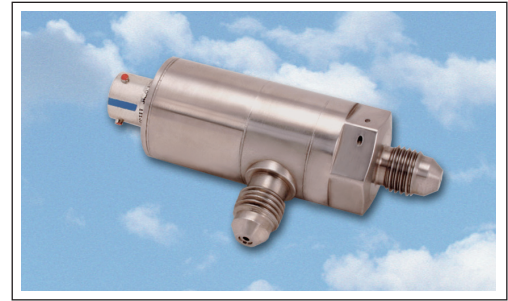


# AIRCRAFT DIFFERENTIAL PRESSURE TRANSDUCER

**APT-51HL-1000 Differential (100mV Output)**

**APTE-51HL-1000 Differential (5V Output)\***

- Developed For Use With High Line Pressure Compared To Low Differential Pressure
- Ideal For Measuring Pressure Drop Across Filters To Monitor Filter Clogging
- High Natural Frequencies
- Unprecedented Stability And Reliability To High Temperatures (Ruggedized Internal Construction)
- Leakproof, All Welded Construction (No Leak After Exposure To 2000°F 1093°C)
- Utmost In Safety (Secondary Containment Of Pressure Media)
- Fully Qualified (Passed Extensive Environmental Tests, RTCA/DO-160F)



| 100 mV OUTPUT |          |
|---------------|----------|
| PIN           | FUNCTION |
| A             | + INPUT  |
| B             | - INPUT  |
| C             | + OUTPUT |
| D             | - OUTPUT |

| 3 WIRE 5V OUTPUT |          |
|------------------|----------|
| PIN              | FUNCTION |
| A                | + INPUT  |
| B                | RETURN   |
| C                | OUTPUT   |

| 4 WIRE 5V OUTPUT |          |
|------------------|----------|
| PIN              | FUNCTION |
| A                | + INPUT  |
| B                | - INPUT  |
| C                | + OUTPUT |
| D                | - OUTPUT |

DIFFERENTIAL OUTPUT (DO NOT GROUND) + OUTPUT OR - OUTPUT

| SPECIFICATIONS                            | UNAMPLIFIED APT-SERIES  |           | AMPLIFIED APTE SERIES             |          |
|---|---|-----------|-----------------------------------|----------|
|   | Pressure Range  | 1.7<br>25 | 3.5<br>50                         | 7<br>100 |
| Excitation                                | 10VDC Regulated   |           | 28VDC ± 4V                        |          |
| Output                                    | 100mV (Typ.)  |           | 5VDC Diff. or Single Ended        |          |
| Power Consumption                         | 100mW (Typ.)  |           | 280mW (Typ.)                      |          |
| Input Impedance                           | 1000 Ohms (Min.)  |           | N/A                               |          |
| Output Impedance                          | 2000 Ohms (Max.)  |           | 100 Ohms (Max.)                   |          |
| Operating Temperature Range               | -65°F to +300°F (-55°C to +150°C)   |           | -65°F to +250°F (-55°C to +120°C) |          |
| Weight                                    | 0.45 Lb. (Max.)   |           | 0.6 Lb. (Max.)                    |          |
| Case Outline                              | Case Length May Vary With Range, Measuring Mode, Pressure Port and Connector  |           |                                   |          |
| Construction Materials                    | 316 SS And 17-4 PH SS   |           |                                   |          |
| Line Pressure                             | 10 Times Rated Pressure, 2000 PSI Max. (138 Bar)  |           |                                   |          |
| Proof Pressure                            | 2 Times Rated Pressure Range, 1000 PSID Max. (69 Bar)   |           |                                   |          |
| Burst Pressure                            | 5 Times Rated Pressure Range, 1000 PSID Max. (69 Bar)   |           |                                   |          |
| Insulation Resistance                     | 100 Megohms Min. @ 50VDC  |           |                                   |          |
| Mounting Torque                           | 75 Inch-Pounds (Max.)   |           |                                   |          |
| Total Error Band                          | ± 2% FSO From 32°F (0°C) to 185°F (85°C), Increasing to ± 3% FSO at -65°F (-55°C) and +250°F (120°C), The APT Maintains ± 3% FSO to 300°F (150°C)   |           |                                   |          |
| Resolution                                | Infinitesimal   |           |                                   |          |
| MTBF                                      | At Least 30,000 Hours   |           |                                   |          |
| Fluid Temperature                         | -65°F to +300°F (-55°C to +150°C)   |           |                                   |          |
| Storage Temperature Range (Non Operating) | -65°F to +185°F (-55°C to +85°C)  |           |                                   |          |
| Altitude-Operating                        | Up To 51,000 Feet   |           |                                   |          |
| Media Compatability                       | <b>Main Port:</b> JP-4 and JP-5 Grade Aviation Turbine Fuel Per MIL-T-5624, Hydraulic Fluid Per MIL-H-5606, MIL-H-83282, Engine and Transmission Lubrication Oil Per MIL-L-7808 and MIL-L-23699 and Aviation Gasoline Per MIL-G-5572 All Grades<br><b>Reference Port:</b> Clean Dry Gas |           |                                   |          |
| Humidity                                  | 100% Relative Humidity  |           |                                   |          |
| Acceleration                              | Operational After Being Subjected to "G" Levels of 12 "G"s Per MIL-STD-810C, Method 513.2 Procedure 1   |           |                                   |          |
| Vibration                                 | RTCA/DO-160F, Sec 8, Cat R, D & D1 Random Vibration Curves  |           |                                   |          |
| Mechanical Shock                          | RTCA/DO-160F, Sec 7, Cat B, 20g, 11 msec sawtooth shock   |           |                                   |          |
| Electromagnetic Interference              | <b>APTE SERIES:</b> Meets RTCA DO-160 Sections 18, 19 and 21 All Cat. A, Section 20 Cat. U. (With Shielded Cable)   |           |                                   |          |
| Electrical Spike Protection               | <b>APTE SERIES:</b> Unit Satisfies Power Input and Voltage Spike Conducted DO-160 Sections 16 and 17. Power Input Test 16 Voltage Spike Conducted Test 17   |           |                                   |          |

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

## TYPICAL ERROR BAND

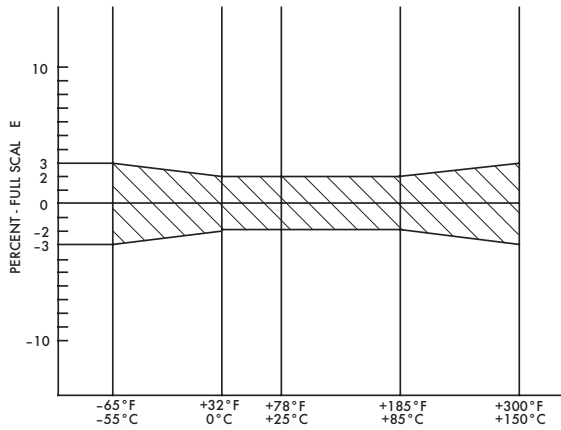


FIG 1: TYPICAL ERROR BAND - UNAMPLIFIED UNIT

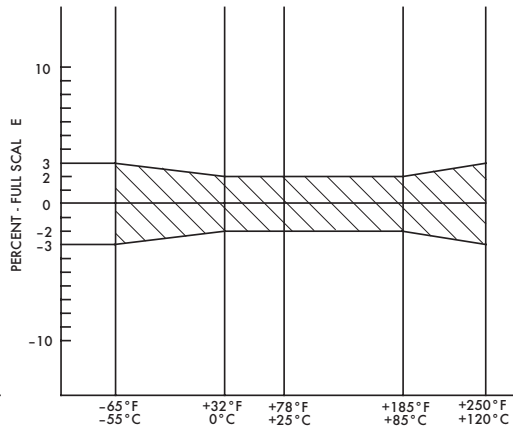
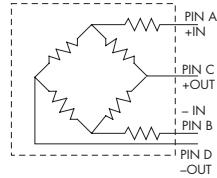


FIG II: TYPICAL ERROR BAND - AMPLIFIED UNIT

NOTE: OTHER TEMPERATURE RANGES AND TIGHTER SPECIFICATIONS ARE AVAILABLE.

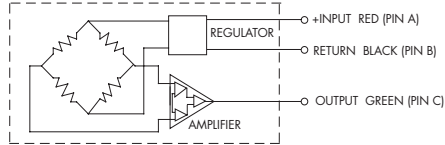
## WIRING

### 0 - 100 mV OUTPUT



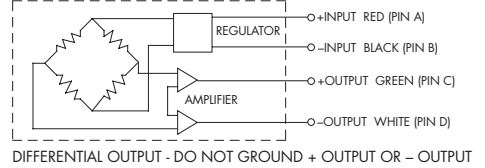
APT-51HL-1000

### 3 WIRE 0.5 - 5V OUTPUT



APTE-51HL-1000-XXXD-3

### 4 WIRE 0 - 5V OUTPUT



DIFFERENTIAL OUTPUT - DO NOT GROUND + OUTPUT OR - OUTPUT

APTE-51HL-1000-XXXD-4

### \* Ordering Information

3 Wire:

APTE-51HL-1000-XXXD-3

4 Wire:

APTE-51HL-1000-XXXD-4

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