**UL400 Series Intrinsically Safe Transducer**

- Eliminate Drift – Fused Bond sensor technology for long term stability
- Sensor wetted material machined from solid stainless steel bar stock – no welding
- No silicone oil fill, no internal o-rings, no welded diaphragms
- RFI/EMI protection on every transducer
- Outputs: 4-20mA, 1-5 Vdc and 1-6 Vdc
- Pressure ranges: 0-5 PSI to 10,000 PSI
- Standard accuracy of 0.25% BFSL
- Approved to UL 913 (CSA 157) for Class 1, Div 1, Groups C and D when used with suitable intrinsic safety barrier.
- Optional external Zero & Span controls (Model UL410)

Spectre's Series UL410 and UL440 Intrinsically Safe Pressure Transducers are specifically engineered with proprietary Fused Bond sensor technology to eliminate the two most common problems with pressure transducers, noise and drift. The UL410 and UL440 (with zero & span) are approved to UL 913 (CSA 157) for use in Class 1, Div 1, Group C & D hazardous areas when used with a suitable safety barrier.

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**Performance @ 25°C (77°F)**

- **Accuracy:** <±0.25% BFSL
- **Stability (1 year):** <±0.25% FS, typical
- **Over pressure protection:** 2X Rated Pressure
- **Burst Pressure:** 5X or 20,000 PSI (whichever is less)
- **Pressure Cycles:** >100 Million
- **Temperature range:** -55 to +125°C (-65 to +250°F)
- **Temperature Accuracy:** ±1°C (±1°F)

**Environmental Data**

- **Operating temp:** -40 to + 85°C (-40 to +185°F)
- **Storage temp:** -50 to +125°C (-60 to +250°F)
- **Compensated range:** 0 to 55°C (-32 to +130°F)
- **Temp comp Zero:** <±1.5% FS
- **Temp comp Span:** <±1.5% FS

**Electrical Data**

- **Excitation:** 10-26 Vdc
- **Output:** 4-20mA, 1-5 Vdc, 1-6 Vdc
- **Current consumption:** <5mA
- **Zero offset:** <±1% of FS
- **Span tolerance:** <±1% of FS
- **Output load:** 5K Ohm (voltage)

800 Ohm@24 Vdc (4-20mA)

**Physical data**

- **Sensor wetted material:** 17-4 PH stainless (316SS optional)
- **Pressure Connection:** 1/4” & 1/8”MNPT, SAE-4
- **Electrical connection:** 24” leads, ½” MNPT conduit connection, DIN 43650
- **Shock:** 100G, 11msec; ½ sine
- **Vibration:** 10G peak, 20 to 2000 Hz
- **ANSI/ISA 12.27.01-2003 Compliant**
UL400 Series Intrinsically Safe Transducer

Ordering guide – Example: UL440-A-(0-100PSI)-2-A-EC9-174

<table>
<thead>
<tr>
<th>UL440</th>
<th>A</th>
<th>0-100PSI</th>
<th>2</th>
<th>A</th>
<th>EC9</th>
<th>174</th>
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<tbody>
<tr>
<td>Model</td>
<td>Pressure port</td>
<td>Range</td>
<td>Units</td>
<td>Output</td>
<td>Connector</td>
<td>Material</td>
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<tr>
<td>UL410 (with zero and span)</td>
<td>A=1/4” MNPT</td>
<td>Specify pressure range in:</td>
<td>PSI (5-10,000)</td>
<td>2=Gauge 4=Sealed 5=Compound 6=Other</td>
<td>A=4-20mA B=1-5Vdc C=1-6Vdc</td>
<td>EC1=24&quot; wiring Leads EC2=Large DIN EC3=Mini DIN EC9=1/2” MNPT w/24” leads ECX=Other</td>
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<tr>
<td>UL440</td>
<td>B=SAE-4</td>
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<td></td>
<td>C=1/8” MNPT</td>
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</tbody>
</table>

Dimensions: Model UL440

Wiring 4-20mA output, Cable
- White + excitation
- Black - excitation/signal
- Power 10-28 Vdc

Dimensions: Model UL410

Wiring Voltage output, Cable
- Red + excitation
- White - signal
- Black - excitation/signal
- Power 10-28 Vdc

Above dimensions may vary with options. Specifications subject to change without prior notice

Entity Parameters
- \( V_{\text{max}} = 28 \text{ VDC} \)
- \( I_{\text{max}} = 150 \text{ mA} \)
- \( C_1 = 0.44 \mu \text{F} \)
- \( L_1 = 0 \)
- \( I_{\text{max}} \) is the total current consumption available from the Associated Apparatus under any condition

Notes
1) Associated Apparatus shall provide intrinsically safe connections which meet the following parameters:
   - \( V_{\text{oc}} \) or \( V_t \leq V_{\text{max}} \)
   - \( I_{\text{oc}} \) or \( I_t \leq I_{\text{max}} \)
   - \( C_a \geq C_1 + C_{\text{leads}} \)
   - \( L_a \geq L_1 + L_{\text{leads}} \)
2) Control room apparatus shall not generate in excess of 250V (U_{\text{max}})
3) Installation should be in accordance with Article 504 in the National Electrical Code, ANSI/NFPA 70