The 225-10-0X0 Series is our digital direct media temperature probe designed for temperature measurements up to +302 °F (+150 °C). Providing real time digital accuracy and rapid temperature detection, our 225-10-0X0 Series is well suited for continuous monitoring of remote fluid, material and equipment temperatures.

Along with it's small package size, our 225-10-0X0 Series provides designers with an easy installation offering greater performance in limited spaces.
Solutions

- Digital Accuracy.
- Immersion Design for Rapid Response.
- All-Welded, Sealed Construction.
- Harsh/Extreme Environment Ready.
- Longer/Simpler Network Connections.
- MIL-DTL-38999 Connector Option.

Potential Applications

- Fuel and Hydraulic Temperature Monitoring.
- Heavy Equipment/Off-Road Vehicle Hydraulic Monitoring.
- Well Bore Fluid Temperatures.
- Subsea Riser Temperatures.

Features

- Full Direct Media/Inflow Style Measurement.
- Operating Temperature: -40 °F to +302 °F
  (-40 °C to +150 °C).
- Temperature Total Error Band: 0.05% over the calibrated temperature range.
- Temperature Output: °F or °C.
- Media Compatibility: Alloy 725 solution annealed and aged to maximum hardness of 43 HRC.

Specifications

**Calibration:** Calibration Certificates are supplied with each unit and available on-line.

**Performance**

**Temperature Total Error Band:** ± 0.5 °F over the calibrated temperature range.

**Response Time:** 50% of temperature delta: 1 second, 90% of temperature delta: 4.5 seconds.

**Temperature Output:** °F or °C. User selectable.

**Temperature Resolution:** See 225-10-0X0 Transducer series table.

**Environmental**

**Operating Temperature Range:** See 225-10-0X0 Transducer series table.

**Calibrated Temperature Range:** 32 °F to +212 °F (-1 °C to +100 °C).

Contents

Specifications .................................................. 2  Dimensional Drawings .......................................... 4
Mechanical

**Pressure Range:** Contact factory for additional pressure ranges.

<table>
<thead>
<tr>
<th>225-10-0X0 Transducer series table</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paine part number:</strong></td>
</tr>
</tbody>
</table>
| 225-10-010-01 | -40 °F to +250 °F
(-40 °C to +121 °C) | 12 bits minimum, better than 0.05 °F | 20mA maximum at 5 VDC |
| 225-10-020-01 | -40 °F to +302 °F
(-40 °C to +150 °C) | 16 bits minimum, better than 0.05 °F | 60mA maximum at 5 VDC |

**Material:** Alloy 725 solution annealed and aged to maximum hardness of 43 HRC.

**External Pressure Rating From Hex to Tip of Probe:** 5,000 PSI maximum.

**Pressure Fitting:** 1/2-20 UNF 3A. Designed for use with 3-905 size O-ring.

**Installation Information:** Manifold/Immersion in-flow mount.

Electrical

**Input Voltage:** +5.00 VDC; ± 0.25 VDC.

**Overvoltage Protection:**

- **225-10-010-01** is not protected.
- **225-10-020-01** is protected from damage to 24 VDC with supply current limited to 60 ma max.

**Reverse Polarity:** Power In and Power Return are protected from the application of reverse polarity.

**Input Current:** See 225-10-0X0 Transducer series table.

**Excitation Return and Communication Return**\(^{1}\): Internally connected. Customer power supply ground and communication ground must be tied together.

**Digital Output:** RS-485.

**Insulation Resistance:** All conductors together to case. 100 MΩ minimum at 50 VDC @ 75 °F (23 °C) ±10 °F.

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1. Communication return is required.
Dimensional Drawings

Figure 1. 225-10-0X0 Series

225-10-010 Series

225-10-020 Series

225-10-010 Series

Connections

<table>
<thead>
<tr>
<th>PIN</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Power in</td>
</tr>
<tr>
<td>B</td>
<td>RS-485 “B”(1)</td>
</tr>
<tr>
<td>C</td>
<td>RS-485 “A”(1)</td>
</tr>
<tr>
<td>D</td>
<td>Power return</td>
</tr>
<tr>
<td>E</td>
<td>COMM RTN (2)</td>
</tr>
<tr>
<td>F</td>
<td>Do not connect</td>
</tr>
</tbody>
</table>

1. Per TIA-485-A
2. Communication return is required.

225-10-020 Series

Connections

<table>
<thead>
<tr>
<th>PIN</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power in</td>
</tr>
<tr>
<td>2</td>
<td>RS-485 “B”(1)</td>
</tr>
<tr>
<td>3</td>
<td>RS-485 “A”(1)</td>
</tr>
<tr>
<td>4</td>
<td>Power return</td>
</tr>
<tr>
<td>5</td>
<td>Sleep</td>
</tr>
<tr>
<td>6</td>
<td>Do not connect</td>
</tr>
</tbody>
</table>

1. Per TIA-485-A

A-F. See Connections Table
G. 1/2 UNF 3A thread
Dimensions are in inches.