### Series 450 Programmable Integral
Temperature Transmitter Specifications

#### INPUT

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MEASUREMENT RANGE</th>
<th>MINIMUM RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt100 ((\alpha = 0.003 85))</td>
<td>(-51 to 160) °C [-60 to 320] °F</td>
<td>10 °C [18 °F]</td>
</tr>
</tbody>
</table>

Connection Type: 4 wire connection (standard)

Sensor current: \(\leq 0.6\) mA

#### OUTPUT

<table>
<thead>
<tr>
<th>Output (Analog)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Output signal</td>
<td>(4 to 20) mA or (20 to 4) mA</td>
</tr>
<tr>
<td>Transmission as</td>
<td>Temperature linear</td>
</tr>
<tr>
<td>Maximum load</td>
<td>((V_{\text{power supply}} - 10 \text{ V}) / 0.023 \text{ A (current output)})</td>
</tr>
<tr>
<td>Induced current required</td>
<td>(\leq 3.5) mA</td>
</tr>
<tr>
<td>Current limit</td>
<td>(\leq 23) mA</td>
</tr>
<tr>
<td>Switch on delay</td>
<td>2 s</td>
</tr>
<tr>
<td>Electronic response time</td>
<td>1 s</td>
</tr>
</tbody>
</table>

#### Failure Mode

- **Undershooting measurement range**: Decreases to 3.8 mA
- **Exceeding measurement range**: Increases to 20.5 mA
- **Sensor breakage/short circuit**: \(\leq 3.6\) mA or \(\geq 21.0\) mA

#### ACCURACY

**Accuracy**

- **Electronics measurement error**: 0.1 °C or 0.08% [1]
- **Reference conditions**: Calibration temperature (23 ± 5) °C [73 ± 9] °F

**Sensor measurement error**

- Class A: \(\pm (0.15 + 0.002 |t|) °C\)
- Class B: \(\pm (0.3 + 0.005 |t|) °C\)
- Grade B: \(\pm (0.25 + 0.0042 |t|) °C\)
- Class AA: \(\pm (0.01 + 0.0017 |t|) °C\)
- 1/5 Class B: \(\pm (0.06 + 0.001 |t|) °C\)

\(|t| = \text{value of temperature without regard to sign, °C}\)

- **Influence of power supply**: \(\pm 0.01\% / V \text{ deviation from 24 V} [2]\)
- **Load influence**: \(\pm 0.02\% / 100 \Omega [2]\)
- **Temperature drift**: \(T = \pm (15 \text{ ppm/°C} \times (\text{full scale value} + 200) + 50 \text{ ppm/°C of set measuring range}) \times \Delta^\circ\)
- \(\Delta^\circ = \text{deviation of ambient temperature from the reference operation condition}\)

**Electronics long term stability**: \(\leq 0.1 °/\text{year} [3]\) or \(\leq 0.05%/\text{year} [3]\)

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[1] % is related to the adjusted measurement range (the value to be applied is the greater)
[2] All data is related to a measurement and value of 20 mA
[3] Under reference conditions