Model 451
Direct Immersion Sanitary RTD

Designed for temperature measurement applications in food, beverage, pharmaceutical and other applications where sensor corrosion and product contamination are critical.

Model 451 combines a polished RTD probe with a choice of sanitary cap fittings and connection heads. The probe sheath and sanitary cap are welded to the lagging extension.

- Surfaces are available ranging from 63 to 8 Ra.
- Choice of sanitary fittings.
- Reduced-tip option.
- Choice of connection heads including a special epoxy coated version for protection during caustic washdown.
- No. 4 finish meets 3A standards. (Min.)

### Specifications:

1. **Base Model**
   - Base Model/Series Number.

2. **A. Accuracy:**
   - Standard: Class B (no code)
   - High: Class A (code H)
   - Special: Customer Specified (code S)

   * Industry Standard is DIN Curve (code 01B), Platinum, 100@ 0°C. Conforms to IEC 751.

3. **B. TCR:**
   - Temperature Coefficient of Resistance is the temperature vs. resistance characteristics of a given metal (Pt, Cu & Ni) used in manufacturing the RTD. Determines the curve of the RTD.

4. **C. Ice Point Resistance:**
   - \( R_0 \) - Resistance at 0°C (32°F)

5. **D. Response Time:**
   - Dependent on sheath diameter, the narrower the diameter - the faster the response.

6. **Construction:**
   - Code A - 316L SS tube and wire construction, thin film element (.00385055), Teflon insulated lead wire.
   - Code C - 316L SS tube and wire construction, wire wound element, fiberglass insulated lead wire.

7. **Lead Wires:**
   - 3-Wire
   - 4-Wire
   - 6-Wire (Dual 3-Wire)
   - 8-Wire (Dual 4-Wire)

8. **Sheath Diameter:**
   - .250" (1/4") is the industry standard.

9. **Sheath Length:**
   - From flange to tip.

10. **Sanitary Fitting:**
    - Select type, size and material.

11. **Leadwire Length:**
    - Length of wires beyond sheath.

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Rev. 0905
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### Model Description
- **Model Number**: 451
- **Code**: 01B
- **R₂ & Temperature Coefficient**
  - 100 ohm Platinum: 0.00385055 TCR
  - 1000 ohm Platinum: 0.003902 TCR
  - 120 ohm Nickel: 0.0672 TCR
  - 10 ohm Copper: 0.004274 TCR
- **Material**: B = 316LSS - Industry Standard
- **Code Construction Temperature Limit**
  - A: 500° F Maximum
  - C: 900° F Maximum
- **Code Number of Lead Wires**
  - 2: 2-Wire (No lead Compensation)
  - 3: 3-Wire (Lead Compensation)
  - 4: 4-Wire (Complete Compensation)
  - 6: Dual 3-Wire (With dual element)
  - 8: Dual 4-Wire (With dual element)
- **Code Sheath Diameter**
  - C: .250" (1/4") Diameter
  - C/N: .250" (1/4") Diameter Sheath/.156" Diameter Tip
- **Code Sanitary Fitting**
  - A: Ladish Tri-Clover
  - G: Cherry -Burrell
- **Cap Nominal Size “X” Actual Size (for reference only)**
  - 0.5: .984
  - 0.75: .984
  - 1.0: 1.984
  - 1.5: 1.984
  - 2.0: 2.516
  - 2.5: 3.047
  - 3.0: 3.579
- **Material**: B = 316LSS - Industry Standard
- **Sample Model Number**

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451 - 01B - A - 2 - C - 003.5 - A2.0B - Z006
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Your Model Number

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