Resistance Temperature Detectors

Features:
- Sensors are fast responding due to the position contact for the measuring surface.
- Applications include temperature measurement inside tubes and drilled out blocks. Areas where conventional thermowires are inaccessible in casing and bearing housings. Where a temperature measurement is required in casings and bearing housings.
- The sensor can be mounted to the process with the use of linear spring, or adjustable spring on a variable-depth bayonet when inserting earlier adapter in too.
- The sensor has electrical approvals for internal safety regime protection and general purpose areas.
- Electrical authorities that have registered these approache include ATEX/IEC and HABUS.
- Sheath materials available include stainless steel, corrosion resistant and high temperature oxidation resistant alloys.
- RTD diameters are 0.188 inch and 4.8 mm, 6 mm or 8 mm.
- The sensor can be mounted to the process during manufacture or by the installer.
- Sensors are fast responding due to the positive contact for the measuring surface.

Options:
- Calibration - single point, multiple points, and to Callendar-Van Dusen coefficients.
- Material transmissivity of the conductors, metal sheath and mineral insulation.
- Selectable accuracy tolerance.
- Special designs and materials.
- Intrinsically safe version: ATEX, NAMUR.
- Non-sparking version: ATEX (Ex-e).

North America
- Canada
- Mexico
- USA
- Brazil

South America
- Argentina

Europe
- Bulgaria
- Germany
- Italy
- France

Africa/Middle East
- Egypt
- Saudi Arabia

Asia
- India
- China
- Korea
- Japan
- South Korea
- Thailand
- Singapore

Australia
- Australia

Part of your business
Bayonet Styles:

- **Fixed Depth**
  - Applications:
    - Water and wastewater treatment
    - Pulp and paper
    - Plastics and rubber industries
    - Pipeline control
    - Oil and gas industries
    - Machinery, plant and tank measurement
    - Energy and power plant technology
    - Air-conditioning and refrigeration systems

- **Variable Depth**
  - Applications:
    - Food and beverages
    - Chemical and petrochemical industries
    - Energy and power plant technology
    - Machinery, plant and tank measurement
    - Oil and gas industries
    - Pipeline control
    - Plastics and rubber industries
    - Power and utilities
    - Pulps and paper
    - Water and wastewater treatment

- **Adjustable Spring Loaded**
  - Applications:
    - Industrial processes
    - Plant and tank measurement
    - Oil and gas industries
    - Machinery and plant
    - Power and utilities
    - Pulps and paper
    - Water and wastewater treatment

Bayonet Styles:

- **Fixed Depth**
  - Applications:
    - Water and wastewater treatment
    - Pulp and paper
    - Plastics and rubber industries
    - Pipeline control
    - Oil and gas industries
    - Machinery, plant and tank measurement
    - Energy and power plant technology
    - Air-conditioning and refrigeration systems

- **Variable Depth**
  - Applications:
    - Food and beverages
    - Chemical and petrochemical industries
    - Energy and power plant technology
    - Machinery, plant and tank measurement
    - Oil and gas industries
    - Pipeline control
    - Plastics and rubber industries
    - Power and utilities
    - Pulps and paper
    - Water and wastewater treatment

- **Adjustable Spring Loaded**
  - Applications:
    - Industrial processes
    - Plant and tank measurement
    - Oil and gas industries
    - Machinery and plant
    - Power and utilities
    - Pulps and paper
    - Water and wastewater treatment
### Resistance Temperature Detectors

**TR53 - Bayonet RTD Sensor**

**Options:**
- Classification tolerance:
- Wiring configuration: 2, 3, and 4 wire
- Measuring range: -200 °C to +600 °C
- Sensor Element: Pt100, Pt1000, Pt10, Cu10, or Ni120 (depending upon element)
- ATEX (EEx-n)
- Non-sparking version: ATEX, and materials

**Features:**
- Sensors are fast responding due to the positive contact for the measuring surface.
- Applications include temperature measurement inside tubes and drilled-out blocks. Areas where conventional thermowires are inaccessible. In casing and bearing housings. Where a temperature measurement is required inside the wall of a plate or vessel.
- The sensor can be mounted to the process side or at the end of a flange, or adjustable spring under spring tension. Also a pipe clamp. The clamp sizes can be designed for inside tubes and drilled out blocks. Areas where conventional thermowires are inaccessible. In casing and bearing housings.
- The sensor has electrical approvals for intrinsic safety, engine protection and general purpose areas.
- Electrical authorities that have registered these approvals include ATEX, CE and HADUR.
- Sheath materials available include stainless steels, corrosion resistant and high temperature oxidation resistant alloys.
- RTD diameters are 0.188 inch and 4.8 mm, 6 mm or 8 mm.
- RTD temperatures ranges depend on bayonet style, the RTD element, and element accuracy.
- Terminations include stripped leads, spade lugs, or Lemosa plugs.
- Termination accessories include cord grips, cable or wire clamps, and brass, copper or compression adapters.
- The bayonet designs can be supplied with accessories for mounting to blocks, plates, pipes, tubes and vessel walls. The common accessories are a threaded adapter with alocating pin allowing the bayonet cap to be locked in place while under spring tension. Also a pipe or hose clamp that has the adapter welded to the clamp. The clamp sizes can be designed for a large variety of pipe and vessel diameters.

### North America

<table>
<thead>
<tr>
<th>Country</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>Canada</td>
<td>WIKA Instruments Canada Ltd.</td>
</tr>
<tr>
<td>Mexico</td>
<td>WIKA Instruments Mexico S.A. de C.V.</td>
</tr>
<tr>
<td>USA</td>
<td>WIKA Instruments Corporation N.J.</td>
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### South America

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<td>WIKA Instruments do Brasil Ltda.</td>
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### Europe

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<td>France</td>
<td>WIKA Instruments s.a.r.l.</td>
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### Asia

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<td>Australia</td>
<td>WIKA Australia Pty. Ltd.</td>
</tr>
<tr>
<td>China</td>
<td>WIKA International Trading Co. Ltd.</td>
</tr>
<tr>
<td>India</td>
<td>WIKA Instruments India Pvt. Ltd.</td>
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</tbody>
</table>

**Part of your business**
Bayonet Styles:

- **Fixed**
- **Variable Depth**
- **Adjustable Spring Loaded**

### Applications:

TR53 series RTD sensors are suitable for:

- **Air-conditioning and refrigeration systems**
- **Chemical and petrochemical industries**
- **Energy and power plant technology**
- **Machinery, plant and tank measurement**
- **Oil and gas industries**
- **Pipeline control**
- **Plastics and rubber industries**
- **Power and utilities**
- **Pulp and paper**
- **Water and wastewater treatment**

### TR53 Bayonet RTD Sensor

TR53 series RTD sensors are a quick, effective and inexpensive method of mounting a RTD into a housing or recess. The spring loaded sensor is inserted into a mating adapter and is secured by a slotted bayonet cap. Locating pin(s) on the adapter hold the bayonet cap and sensor in place. The push and twist mechanism allows for fast and easy installation or removal.

Three styles of bayonet sensor are available including fixed spring loading, adjustable spring loading, and variable depth.

- **The Fixed** design has a spring located below the bayonet cap and in a stationary position. This style is used when an insertion length into a recess or into a surface has a known dimension. The extension from the bayonet or recess can be split with double insulated wiring, with or without double insulated armor. This style is used when an insertion length into a recess or surface has a known dimension. The extension from the bayonet or recess can be split with double insulated wiring, with or without double insulated armor.

- **The Adjustable spring loaded** design has a spring loaded cap and is in a stationary position. The bayonet cap can then be rotated on the spring to allow for adjustment of insertion length. This design can also have wiring with double insulation, with or without double insulated armor.

- **The Variable** design has adjustment over the complete length of the sensor. It is constructed with a small capped tip and has a flexible interlocking stainless steel armor attachment. The bayonet cap is designed to rotate on the flexible armor to whatever the length of the armor might be. The variable design has a spring located below the bayonet cap and in a stationary position. This style is used when an insertion length into a recess or into a surface has a known dimension. The extension from the bayonet or recess can be split with double insulated wiring, with or without double insulated armor.

### Specifications:

- **Bayonet style**
- **Unit of measure**
- **Electrical approval**
- **Sensor tip design**
- **Sensor diameter**
- **Material bayonet cap**
- **Spring depth**
- **Sensor design**
- **Temperature range**

### Capacities:

- **Part of Your Business**
- **Spring loading, adjustable spring loading, and variable depth**

### Applications:

- **TR53 series RTD sensors are suitable for:**
  - Air-conditioning and refrigeration systems
  - Chemical and petrochemical industries
  - Energy and power plant technology
  - Machinery, plant and tank measurement
  - Oil and gas industries
  - Pipeline control
  - Plastics and rubber industries
  - Power and utilities
  - Pulp and paper
  - Water and wastewater treatment
Bayonet Styles:

- **Fixed**: A bayonet cap is designed to rotate on the flexible armour to whichever the length of the flex armour might be. The bayonet cap is designed to rotate on the flexible armour to accommodate any movement in the sensor.
- **Variable Depth**: The bayonet cap can then be rotated on the spring to allow for adjustment of insertion length. The design can also have wiring with double insulation, with or without the flexible armour protection.
- **Adjustable Spring Loaded**: A design has a spring located below the bayonet cap in a stationary position. This style is used when an insertion length into a process or into a surface has a known dimension. The extension from the tubing or mi-cable can be with or without the flexible armour protection.

**Bayonet Styles**

- **TR53 Bayonet RTD Sensor**

The TR53 series RTD sensors are a quick, effective and inexpensive method of mounting a RTD into a housing or recess. The spring loaded sensor is inserted into a mating adapter and is secured by a slotted bayonet cap. Locating pin(s) on the adapter hold the bayonet cap and sensor in place. The push and twist mechanism allows for fast and easy installation or removal.

Three styles of bayonet sensor are available including fixed spring loading, adjustable spring loading, and variable depth.

- **The Fixed Design** has a spring located below the bayonet cap and is in a stationary position. This style is used when an insertion length into a process or into a surface has a known dimension. The extension from the tubing or mi-cable can be with or without the flexible armour protection.

- **The Adjustable Spring Loaded Design** has a spring located below the bayonet cap and is in the wall of the sheath or end cap. The spring length is dependent on the amount of adjustment required.

- **The Variable Depth Design** has adjustment over the complete length of the sensor. It is constructed with a small capped tip and has a flexible interlocking stainless steel armoured attachment. The bayonet cap is designed to rotate on the flexible armour to whatever the length of the flex armour might be. The bayonet cap can then be rotated on the spring to allow for adjustment of insertion length. The design can also have wiring with double insulation, with or without the flexible armour protection.

**Applications:**

TR53 series RTD sensors are suitable for:

- Air-conditioning and refrigeration systems
- Chemical and petrochemical industries
- Energy and power plant technology
- Machinery, plant and tank measurement
- Oil and gas industries
- Pipeline control
- Plastics and rubber industries
- Power and utilities
- Pulp and paper
- Water and wastewater treatment

**Specifications:**

- **Sensor tip design:** 45 degree bend, 0 straight
- **Sensor diameter:** 3/8 inch (approx. 10 mm), 1/2 inch (approx. 15 mm), 1 5/8 inch (approx. 40 mm)
- **Material bayonet cap:** Stainless steel, nickel plated brass, copper
- **Spring dimension:** 1 5/8 inch (approx. 40 mm), 1 7/8 inch (approx. 45 mm)
- **Depth:** 3 1/2 inch (approx. 90 mm), 6 inch (approx. 150 mm)
- **Sheath material:** Stainless steel, teflon
- **Termination:** Miniature 3-pin-plug (male), lemosa plug size 1 S (male), 3-pin-plug DIN Barnant (male)
- **Wiring configuration:** Single 2-wire, single 3-wire, dual 2-wire, dual 3-wire
- **Element:** Pt100, Pt1000, Ni120, Cu10
- **Temperature range:** -200...+250 °C, -50...+450 °C, -200...+600 °C, -200...+450 °C

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