

# TC53 Bayonet Thermocouple Sensor

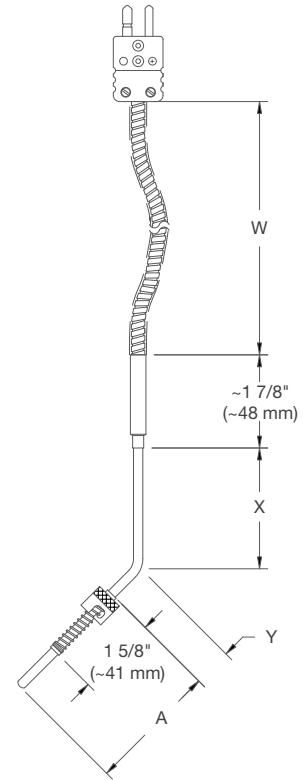


## TC53 Bayonet Thermocouple Sensor

TC53 series thermocouple sensors are a quick, effective and inexpensive method of mounting a thermocouple 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 process or onto a surface has a known dimension. The extension from the tubing or mi-cable can be with double insulated thermocouple wiring, with or without a stainless steel flexible armour protection.
- **The Adjustable spring loaded** design has a spring fitted over the thermocouple and fixed to the wall of the sheath or end cap. The spring length is dependent on the amount of adjustment required. The bayonet cap can then be rotated on the spring to allow for adjustment of insertion lengths. This design can also have thermocouple wiring with double insulation, with or without the flexible armour protection.
- **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 armour attachment. The bayonet cap is designed to rotate on the flexible armour to whatever the length of the flex armour might be. The spiral wound interlocking flex armour has a spring loading action when a compressive force is applied.

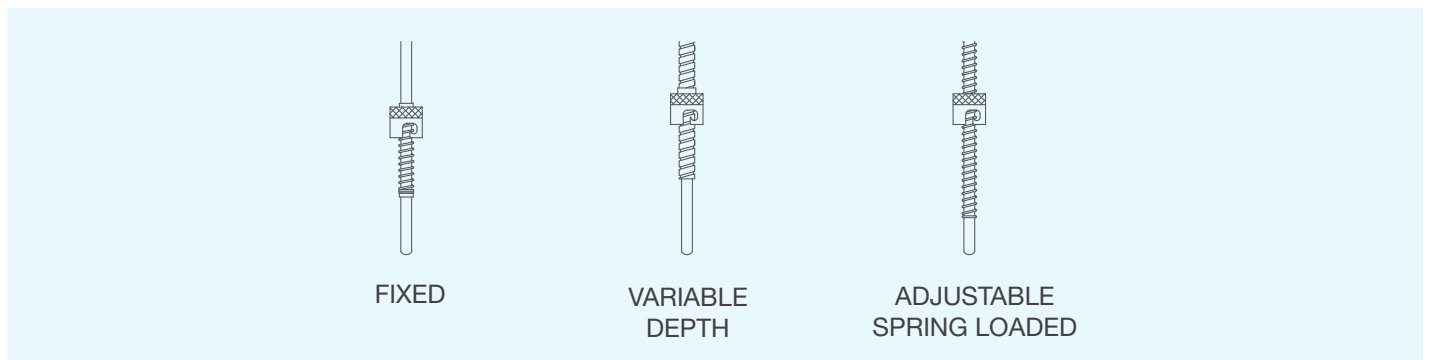


### Applications:

TC53 series bayonet 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:



## TC53 - Bayonet Thermocouple Sensor

Bayonet style:	Fixed spring loading, adjustable spring loading or variable depth
Sensor Element:	<ul style="list-style-type: none"> <li>■ Type K (NiCr-Ni),</li> <li>■ Type J (Fe-CuNi),</li> <li>■ Type E (NiCr-CuNi),</li> <li>■ Type N (NiCrSi-NiSi),</li> <li>■ Type T (Cu-CuNi)</li> </ul>
Temperature range:	-200 °C to +1260 °C (depending upon element and bayonet style)
Number of sensors:	<ul style="list-style-type: none"> <li>• 2-wire single circuit</li> <li>• 4-wire dual circuit</li> </ul>
Classification tolerance:	<ul style="list-style-type: none"> <li>• Class 2 and class 1 per DIN EN 60584</li> <li>• ISA standard and special to ANSI MC96.1-1982</li> </ul>
Measuring point:	Ungrounded or grounded
Electrical approvals:	ATEX/IEC, NAMUR
Options:	<ul style="list-style-type: none"> <li>• Calibration - single point and multiple points</li> <li>• Material traceability of the thermocouple alloys, metal sheath and mineral insulation</li> <li>• Selectable accuracy tolerance</li> <li>• Special designs and materials</li> <li>• Intrinsically safe version: ATEX, NAMUR (EEx-i)</li> <li>• Non-sparking version: ATEX (EEx-n)</li> </ul>

## Features:

- Sensors are fast responding due to the positive contact to the measuring surface.
- Applications include temperature measurement inside tubes and drilled out blocks. Areas where conventional thermowells are inaccessible. In casings 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 with the use of a fixed spring, an adjustable spring or a variable depth bayonet when a matching adapter is supplied.
- The sensor has electrical approvals for intrinsic safety, ingress protection and general purpose areas.
- Electrical authorities that have registered these approvals include ATEX/IEC and NAMUR.
- The thermocouple sensors available are provided with a variety of sheath materials including austenitic 300 series and ferritic 400 series stainless steels, corrosion resistant and high temperature oxidation resistant alloys.
- Thermocouple diameters are 3/16 inch and 4.8 mm, 6 mm or 8 mm.
- Thermocouple temperature ranges are dependent on the bayonet style, sheath & conductor diameter, and element calibration.
- Terminations include stripped leads, standard or mini plugs & jacks, or spade lugs.
- Termination accessories include cord grip, cable or wire clamps, and braze, crimp or compression adapters.
- If required the metal sheath can be formed during manufacture or by the installer.
- Extension cable is available in a variety of insulation and jacket materials. These include interlocking flexible armour, braided stainless steel, fibreglass, PTFE, PVC, and Silicon.
- 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 a locating 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.



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