

Thermometer with drift detection sensor technology

WIKA data sheet SP 05.26

Applications

- Chemical industry
- Petrochemical industry
- Offshore
- Plant and vessel construction

Special features

- Sensor range from -50 ... +500 °C [-58 ... +932 °F]
- Pt100 sensor
- Sensor diameter 6 mm [0.236 in]
- Explosion-protected versions are available for many approval types (depending on the approval of the respective thermometer types)



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Description

Resistance thermometers with True Drift Detection can be implemented in a variety of thermometer designs.

The sensors integrated in the measuring tip, in conjunction with the WIKA T38 temperature transmitter, allow permanent drift monitoring of the resistance sensor. As soon as a drift is detected, this error can be signalled by the temperature transmitter via HART or directly on the current loop. A faulty measuring location is thus identified immediately and before the next recalibration. Uncertainty between the regular calibration times can thus be eliminated.



Smart in sensing

Suitable thermometers with optional True Drift Detection

In principle, drift detection can be implemented in all resistance thermometers, which are made of mineral-insulated sheathed cable in diameters of 6 mm [0.236 in] and allow the integration of a head transmitter.

Design

Resistance thermometer



In sheathed resistance thermometers the flexible part of the probe consists of a mineral-insulated cable (MI cable). It features a stainless steel outer sheath, which contains the insulated internal leads, embedded within a high-density ceramic compound. The measuring resistor is connected directly to the internal leads of the sheathed cable. The drift detection sensor design differs from the standard versions by a special design of the probe tip.

Sensor

Measuring element		
Connection method		
Single element	■ Pt100, 1 x 4-wire	
Validity limits of the class accuracy in accordance with EN 60751		
Pt100	Class A	-30 ... +300 °C [-22 ... +572 °F]
	Class B	-50 ... +500 °C [-58 ... +932 °F]

Measuring insert

Thin-film measuring resistor Pt100 ¹⁾

Diameter Ø d in mm [in]	Index per DIN 43735	Tolerance in mm	Sheath material	
			Standard design	Recessed soldering lugs
6 [0.24]	60	±6	1.4571	1.4571

1) Bendable from 50 mm [1.97 in] of measuring insert length