

Temperature sensors

for temperature compensation
of pH measurements



Kuntze Instruments

Instrumentation for Water
and Waste Water Analysis

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Description

The pH-value of a test solution (i.e. a buffer solution) is influenced by the temperature. This is an intrinsic effect (the pH-value really changes) so it is not to be „compensated“.

Temperature changes influences the output of a pH electrode. At different temperatures the sensors provide different voltages for identical pH-values. The false reading is about 0.3 % per 1 °C of temperature change. For precise measurements in variable temperatures this effect should be compensated. To do this automatically, a temperature sensor must be used.

Design

Temperature sensors have a protection body made of stainless-steel (for higher chemical resistance the stainless steel body is teflon covered). Depending on the application glass or PVC bodies are also available.

The sensor is equipped with a platinum RTD. The resistance of this RTD is 100 ohm at 20°C and is called 'PT 100'. A water tight plug-in connector connects to the cable. For pH temperature compensation a 2-wire cable is sufficient.

Shaft materials

The following materials are available:

- Stainless steel (temperatures up to 140 °C)
- Teflon-covered stainless steel (temperatures up to 140 °C)
- Glass (temperatures up to 100 °C)
- PVC (temperatures up to 50 °C)



Name Description

Pt-100-G-160	Pt-100, Glass shaft, l = 160 mm, 12 mm Ø, plug-in connector
Pt-100-G-120-PG	Pt-100, Glass shaft, l = 120 mm, 12 mm Ø, PG-13.5 thread plug-in connector
Pt-3-G/Teflon	Pt-100, teflon-covered stainless steel shaft, l = 170 mm, 12 mm Ø, plug-in connector
Pt-3-G/PVC	Pt-100, PVC shaft, l = 160 mm, 12 mm Ø, sensor-element with glass-body jutting out at the bottom, plug-in connector
Pt-1-S-1/2"	Pt-100, stainless steel shaft, l = 36 mm, 7 mm Ø, Thermo-head (connector socket, die cast aluminium), 1/2"-thread

Order-No.

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