



TEMPERATURE



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# Pre-assembled stainless sheath temperature probe RPT0K1.625.2K.A.385-4.H



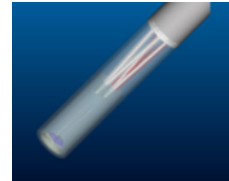
## Product

The RealProbeTemp is a pre-assembled stainless sheath probe for the simplified manufacturing of temperature probes. RealProbeTemp is tip sensitive providing superb response time and minimized immersion depth (e.g. liquids at a depth of 10mm or in some cases slightly less. Standard probe assemblies in comparison require a depth of 25 to 30mm).

A unique patented probe tip assembly utilizing a special thermal conductive metallization construction encased in thin wall tubing provides an unequalled probe assembly with fast response times. Tip sensitivity and fast response times allow for the RealProbeTemp to be used as a bearing temperature sensor or surface contact temperature sensor as well. The RealProbeTemp can act as a stand alone probe assembly or as a sub assembly insert to minimize the fabrication process and materials of larger or more complex probe assemblies. This results in cutting manufacturing costs and enhancing performance of the finished assembly.

## Features

- Cost saving through pre-assembly and inspected probe
- Fast response time
- Isolated thermal conductivity for fast accurate measurement
- Ability to measure at minimal immersion depths (< 10mm)
- Resistant against vibrations (tested according to IEC 60751)



## Applications

- Immersion probes
- Contact- and surface probes
- Bio-reactors
- CIP (cleaning in process)
- Food industry
- Process industry
- HVAC

## Technical Data

Nominal resistance:	100 Ohm at 0°C
Temperature range:	-50°C - +200°C
Characteristic curve:	3850 ppm/K
Long term stability:	< less than 0.04% @ 1000 hrs. max. temperature
Response time $t_{90}$	< 1.5s (in water, 0.4m/s, assembled, immersion depth 80-100mm)
Max. allowed pressure	100 bar
Electrical strength	1000 V <sub>DC</sub> , 1s
Tolerance:	DIN EN 60751 class A
Contacts:	4x Cu/Ag stranded wire AWG 28/7, PTFE insulation, 385 mm long, 2x red, 2x white
Deep drawing sheath	Material: 1.4404 / 316L, wall thickness: 0.4mm, length: 25mm, outer Ø: 6mm
Recommended applied current:	100 Ohm:1mA



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### Further Process Recommendations

Welding with tube extension

Material: stainless steel, 1.4404 / 316L, wall thickness: 0.5... 1.0mm, welding method: micro plasma

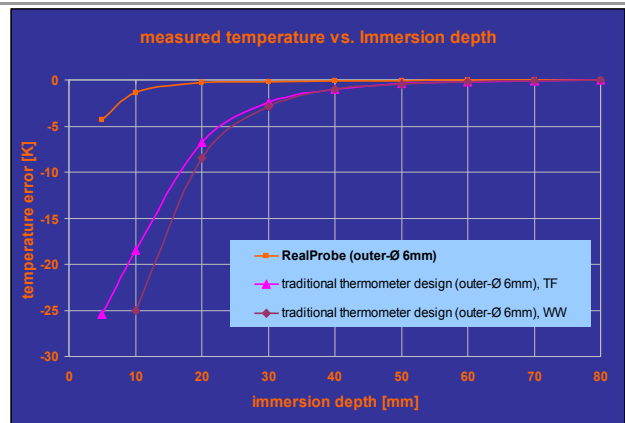


### Minimized Immersion Depth Recommendations

Through its improved thermal sensitivity the RealProbeTemp can drastically reduce the required immersion depth into the medium. With only 10mm immersion depth it can achieve a measurement performance where conventional temperature probes need more than 25 mm immersion depth.

Especially for applications with reduced space and large temperature gradients between surroundings and the measurement medium poses a challenge the RealProbeTemp is the ideal solution for pin point accurate measurement.

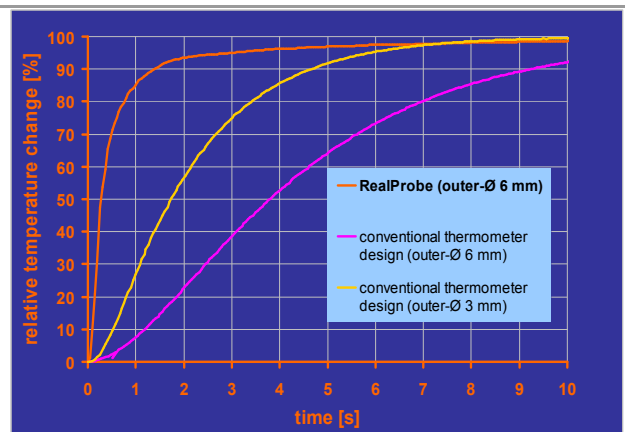
The graphic shows the measured temperature versus the immersion depth. The probes were tested in a circulated, 100°C silicon oil bath and immersed in different depths.



### Fast response time

After less than 1.5 seconds the RealProbeTemp has reached already 90% of the temperature change. The T63 value is below 0.5s. Compared with conventional temperature probes you can achieve a drastic improvement of the response time with the RealProbeTemp – even compared with the much thinner thermometers with 3 mm outer diameter. Measured in water (v = 0.4 m/s, assembled, immersion depth 80-100 mm). Probe was dropped from the ambient air into water.

Temperature step: room temperature → 30°C.



All mechanical dimensions are valid at 25°C ambient temperature. If not differently indicated. ■ All data except the mechanical dimensions only have information purposes and are not to be understood as assured characteristics. ■ Technical changes without previous announcement as well as mistakes reserve. ■ The information on this data sheet was examined carefully and will be accepted as correct. No liability in case of mistakes. ■ Load with extreme values during a longer period can affect the reliability. All rights reserved. The material contained herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner. Typing errors and mistakes reserved. Product specifications are subject to change without notice. All rights reserved.



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