



## Pt100 Type N Medium Temp. Precision Thermometers

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The eXacal precision thermometers are used for precise temperature measurements or as calibration standards.

- ✓ Temperature range: **-38°C to 420°C**
- ✓ small measurement uncertainties: **6mK to 21mK**
- ✓ robust alternative to ITS-90 standard thermometers
- ✓ high stability and good calibration capability
- ✓ **Configurable**  
In our thermometer configurator you can individually configure the thermometer according to many parameters.
- ✓ **Small measurement uncertainties with DAkkS calibration certificate**  
The thermometer can be calibrated at fixed temperature points with smaller measurement uncertainties.

## Calibration

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eXacal thermometers are calibrated in our own DAkkS calibration laboratory. The DAkkS accreditation ensures that all calibrations are traceable to national and international standards. The calibration of eXacal resistance thermometers is carried out at ITS-90 fixed points. It is also possible to carry out calibrations according to the comparison method in liquid baths and calibration furnaces. The measurement uncertainty is calculated from many components. The largest contributions are reproducibility, ITS-90 function, self-heating and hysteresis.

- ✓ Small measurement uncertainties with DAkkS calibration certificate
- ✓ Temperature fixed points from mercury triple point -38,8344 °C to zinc freezing point 419,527 °C
- ✓ ITS-90 standard thermometer for comparison calibration

Range	Fixed Point	Uncertainty
-38,8344°C	Mercury	6mK
0,01°C	Water	6mK
29,7646°C	Gallium	6mK
156,5985°C	Indium	10mK
231,928°C	Tin	11mK
419,527°C	Zinc	21mK

The given measurement uncertainties correspond to k=2, include an ITS-90 function and are given for the respective range.

# Technical data

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<b>Model</b>	<b>eXacal Pt100N</b>
Temperature range	-38,8344 °C to 419,527 °C
Nominal resistance	Pt100 (100 Ohm)
typical annual drift	2,5mk
Connection type	Four-wire
Connecting cable	temperature resistant – very low EMF stranded wires from own production
Connection	depending on configuration
Sheath material	Metal
Thermometer wire	silver
<b>Dimensions</b>	
Handle	∅20mm x 100mm
diameter	6mm
Length	depending on configuration
Connection cable	depending on configuration
<b>Detector</b>	
R0	100 Ohm ± 0,05 Ohm
Alpha	0,003850 ± 0,000005
Standard	IEC 60751:2008
tolerance	1/10 DIN
length	25mm
recommended measuring current	1mA
Self-heating	5mK to 10mK
<b>DAkkS Calibration</b>	
Fixed point calibration	6 mK to 21 mK
Comparison calibration	15 mK to 35 mK

Further information:  
**[www.exacal.de](http://www.exacal.de)**

