



Platinum - Gold Thermocouple TC-Au/Pt Primary Standard

- Calibration uncertainties of $\pm 0.030 \text{ }^\circ\text{C}$ @ $1000 \text{ }^\circ\text{C}$.
- Stability better than $\pm 0.050 \text{ }^\circ\text{C}$ over long periods of use.
- Best alternative for high temperature PRT.
- More robust and less annealing care than PRTs.
- Does not deteriorate the electrical isolation between sensor element and sheathed as PRTs.

Presys Au/Pt thermocouple sensor follows the design, care selection of raw material and handling in accordance with NIST and McLaren guidelines.

It is a high performance sensor, more robust and stable than PRT for high temperature and level of accuracy of secondary or primary temperature standards.

R and S thermocouples use platinum alloys in their composition which causes deterioration in performance and variable behavior depending on their immersion in the heat source (presence of non-homogeneities).

The Au/Pt thermocouple developed by Presys uses Au and Pt wires with 99.999% of purity, and as these metals are very stable from 0 to $1000 \text{ }^\circ\text{C}$, the stability of the thermocouple is excellent for this range. The international literature has extensively described the exceptional qualities of this type of thermocouple.

Can be used with the Presys Precision Thermometer PT-511 which already has the Au/Pt thermocouple curve developed by Burns. The reading is obtained directly in temperature unit. This set calibrated by fixed points results in a digital thermometer with the best uncertainties for such a wide range as 0 to $1000 \text{ }^\circ\text{C}$.

Technical Specifications

Temperature Range:	0 to 1000 °C
Typical stability:	± 0.050 °C
Thermocouple Material:	Gold 99.999 % of purity Platinum 99.999 % of purity
Sheath material:	Measurement junction in quartz Reference junction in stainless steel
Measurement Junction Dimensions:	Ø 7 mm x 560 mm
Reference Junction Dimensions:	Ø 6 mm x 230 mm
Typical Calibration Uncertainties:	0.070 °C @ 231.928 °C (Sn) 0.050 °C @ 419.527 °C (Zn) 0.035 °C @ 660.323 °C (Al) 0.025 °C @ 961.78 °C (Ag)
Weight:	0.5 kg
Order Code:	PROBE – PT – TC – Au/Pt
Warranty:	1 year

Example of an Au/Pt Thermocouple Certificate:

Temperature values measured in the thermometer with deviation function already programmed.

Cell	Temperature / °C	e.m.f. / µV	Indicated Value / °C	Uncertainty / °C	Immersion / mm
Ag 23	961.78	16114.11	961.78	0.025	200
Al 34	660.323	9317.45	660.33	0.035	160
Zn EPC 033	419.527	4944.28	419.54	0.050	160
Sn EPC 047	231.928	2235.25	231.91	0.070	160
In EPC 046	156.5985	1350.62	156.58	0.13	180
Ga ISO 168	29.7646	196.23	29.70	0.13	180
Ice Point 0 °C	0.00	0.14	-0.08	0.13	250

The calibration uncertainty is estimated with a confidence level of 95% ($k = 2$).

- Carrying case included.