

## Thermocouples

Heraeus Quartz is a world class producer and supplier of quartz glass products. We are now in a position to complement our range of products by offering our customers thermocouples for Semiconductor applications. We have the infrastructure to provide profile and spike T/Cs to most end user specifications. As most of the raw material for our T/Cs is available within the Heraeus group it allows us to provide a highly competitive price and service package.

### T/C-Services

#### ■ New

A complete new T/C constructed from high quality new materials.

#### ■ New-for-Old

The junctions of the T/C are replaced with new wire. The scrap value of the precious metal from the returned T/C is deducted from the cost of the new T/C. The hardware and ceramics can be reused if in good condition thus providing more cost savings. Metal banks can also be offered.

#### ■ Repair & Recalibration

- Any damaged quartz sheath can be replaced.
- The junctions of the returned T/C can be individually tested for calibration performance. Any failing junctions will be replaced. The T/C is then rebuilt with new quartz sheath, ceramics and hardware as required. The T/C is then calibrated.



### T/C-Specifications

Accurate temperature control within a CVD or diffusion furnace is important to achieve tight process conditions. It is therefore vital that we can offer our products with the following parameters:

- We use high purity pre-calibrated wire which can achieve a tolerance of  $\pm 0.5^\circ\text{C}$  at  $1000^\circ\text{C}$
- Fabricated thermocouples are calibrated to  $\pm 0.3\%$  of the master T/C used
- Calibrated data is given over a range from  $100^\circ\text{C}$  to  $1200^\circ\text{C}$  with step size of  $5^\circ\text{C}$  (down to  $1^\circ\text{C}$  if required)
- 0.5 mm wire used for all new and new-for-old
- Purity of AISint ceramic used exceeds 99.7%

### Thermocouple types

Notation	Conductor (+)	Conductor (-)	Temperature range [ $^\circ\text{C}$ ]
<b>R</b>	Pt - 13% Rh	Pt	0 to 1600
<b>S</b>	Pt - 10% Rh	Pt	0 to 1500
<b>B</b>	Pt - 30% Rh	Pt - 6% Rh	100 to 1750 (intermittent)
<b>K</b>	Ni-Cr	Ni-Al	0 to 1000

Our thermocouples are supplied in the internationally recognized type designations, R,B,S and K and are determined by the materials used in the junction.

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