

▶ The ultimate resource for SEMICONDUCTOR INDUSTRY

Flokal



# THERMOCOUPLES

## Contact

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ENGINEERED PRODUCTS FOR THE MODERN INDUSTRY

**We turn your drawing into a high quality customized TC:**

### **Flokal: supplier for semiconductor components**

Flokal was founded in 1992 as independent distributor for mass flow controllers and pressure transducers and to provide calibration services for all mass flow controller and pressure transducer brands and types. Today, Flokal's semiconductor components group has grown out to one of the main suppliers of components for semiconductor industry in Europe. Flokal semiconductor components group provides a complete range of products and services including: thermocouple manufacturing and repair, MFC distribution and in-house calibration service, susceptor manufacturing and refurbishment and many others.

### **Thermocouples for semiconductor equipment**

Since 1995 Flokal started manufacturing and refurbishment of thermocouples for the semiconductor industry. Our portfolio includes paddle (profiling) thermocouples and spike thermocouples. As the quality of thermocouple is highly dependent on the working standards in the production area, Flokal's strategy over the years has been to seriously invest in people and equipment. The quality of our thermocouples is recognized by many of our customers, including the main semiconductor equipment suppliers.

Flokal is specialized in the following products:

- Manufacturing of three and five zone paddle (profiling) thermocouples
- Manufacturing of spike thermocouples
- Repair of paddle and spike thermocouples
- Refurbishment of paddle and spike thermocouples
- Manufacturing of thermocouples from any drawing as provided by customer

Thermocouples can be manufacturing using the well-know conductor material types available in the market, being R, S and B-types:

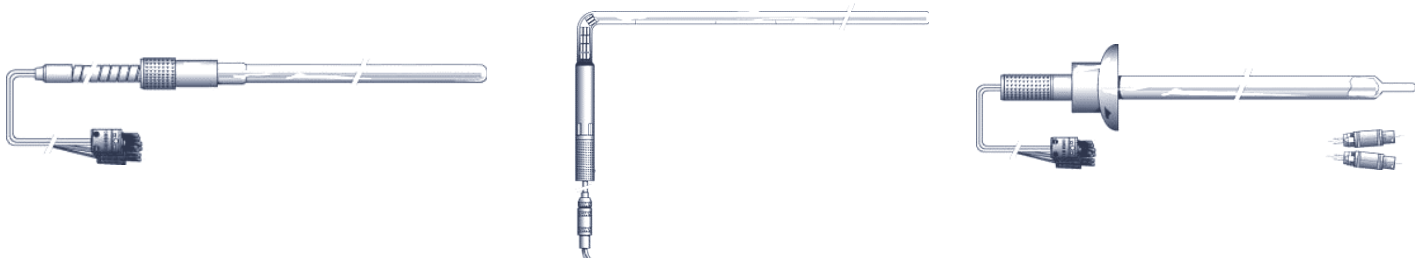
- R-type: + conductor Pt-13%Rh/- conductor Pt
- S-type: + conductor Pt-10%Rh/- conductor Pt
- B-type: + conductor Pt-30%Rh/- conductor Pt-6%Rh

Profiling thermocouples for the semiconductor industry are available both with or without quartz sleeve.

Flokal has an in-house calibration center for thermocouples. Each thermocouple can be delivered including a multiple zone multiple temperature calibration report. Calibrations are performed against a standard thermocouple which is calibrated at the National Physical Laboratory using the latest international specifications and criteria. Thermocouples can also be delivered with a calibration based upon the batch calibration of the wire. These thermocouples will be shipped only after an internal reference check with the standard reference thermocouple.

### **Paddle (profiling) Thermocouples**

Paddle thermocouples are manufactured to the needs of our customer. Typically we will build thermocouples using customer engineering drawings. For most furnace equipment, Flokal is able to manufacture thermocouples after supplying the OEM part number.



## • Spike Thermocouples

Flokal has become a renowned supplier of custom-made Spike profiling thermocouples in both simplex and duplex configurations. We supply custom-designed thermocouples, with any combination of ceramic and lead length.

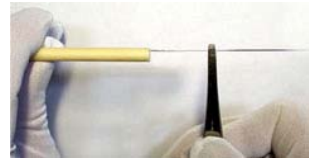


## • Thermocouple Services

Flokal offers the following services for thermocouples:

- **Manufacturing** of new thermocouples

New thermocouples are manufactured using the highest quality materials. Thermocouples can be built from an engineering drawing as provided by the customer or in most cases after supplying OEM part number.



- **New-for-old** service

Flokal offers a unique cost saving service for customer. With an order for a new thermocouple, the customer ships the used thermocouple to Flokal. The scrap value of the used thermocouples' junction material is deducted from the cost of the new thermocouple.

- **Refurbishment** service

All material of the used thermocouple is being checked on functionality and will be re-used to build a new thermocouple. Broken parts will be replaced with new material. The refurbished thermocouple will be intensively tested to make sure that it meets the performance of a new thermocouple.

- **Repair and calibration** service

Flokal has an in-house repair and calibration centre to provide maximum service to our customers.

### TC ready for shipment



**We invite you into the world of our services!**

We provide Products and services for the front-end Semiconductor Market (Diffusion/LPCVD/APCVD/ PECVD/MOCVD and epitaxial processes), for Fiber Optical Manufacturing and for various processes in the petrochemical and chemical industry. We focus on product and service excellence. We offer:

**For the semiconductor industry**

- ✓ Diffusion-oxidation systems
- ✓ LPCVD-PECVD-systems
- ✓ RTP & RTA - Systems
- ✓ System Upgrades
- ✓ Wet-benches
- ✓ Spin-coater
- ✓ Hot-plates
- ✓ Temperature controller
- ✓ Clean room equipment
- ✓ Dry & Wet etch & clean
- ✓ Photochemical filtration and dispense systems
- ✓ Thermal control systems
- ✓ Gas systems
- ✓ MFC's & Valves
- ✓ Pressure and Vacuum measurement & control
- ✓ Gas flow standards
- ✓ Gas/Liquid purification and filtration
- ✓ Vacuum products
- ✓ Vacuum inlet and waste gas collision traps
- ✓ Chemical blending and delivery modules
- ✓ Power supply/readout
- ✓ Accredited calibrations (flow, temperature, pressure, geometry)
- ✓ Cleaning, repair and maintenance
- ✓ Automation and Software
- ✓ Humidity sensors
- ✓ Specialty gases, liquids, solids
- ✓ Heating elements
- ✓ Thermocouples
- ✓ Precursor delivery technology
- ✓ Process Analysis
- ✓ Quartz; Tungsten; Molybdenum; Tantalum; Graphite; Platinum

**For the process industry**

- ✓ Gas / liquid flow measurement & display
- ✓ Temperature measurement & display
- ✓ Pressure measurement & display
- ✓ Valve positioners & control valves
- ✓ Level measurement & display
- ✓ Turbidity measurement & display
- ✓ Humidity measurement & display
- ✓ Accredited calibrations (flow, temperature, pressure, level)
- ✓ Process Analytical solutions
- ✓ Automation and Software
- ✓ Flow meters

**For the pharmaceutical industry**

- ✓ Cryotechnology
- ✓ Gas / liquid flow measurement & display
- ✓ Temperature measurement & display
- ✓ Pressure measurement & display
- ✓ Accredited calibrations (flow, temperature, pressure, level)
- ✓ in-line particle analyzers
- ✓ Fluid dispensers & metering pumps
- ✓ Filter and separation systems
- ✓ Process Analytical solutions
- ✓ Automation and Software

Visit our site [www.flokal.com](http://www.flokal.com)

**For any particular request please contact:** [info@flokal.com](mailto:info@flokal.com)



**Your request/Feedback**

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