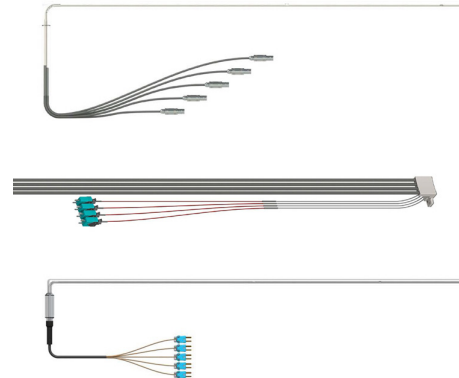


# Profile thermocouples for diffusion furnaces

SPS provides profile thermocouples by Conax. These thermocouples are high-precision temperature sensors designed for accurate temperature measurement and control in semiconductor thermal processing. Available in both standard and custom configurations, they deliver the reliability, repeatability, and durability required for diffusion, oxidation, annealing, and other high-temperature furnace applications in semiconductor, photovoltaic, and LED industries.



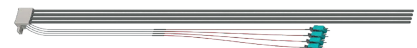
## DESIGNED FOR VERTICAL & HORIZONTAL FURNACES

Conax manufactures profile thermocouples for both vertical and horizontal furnace systems and offers solutions for many of the industry's leading platforms, including:

- ASM\*\*
- BTI/Tempress
- MRL
- ATV Technologies
- Centrotherm
- SVCS
- Aviza / SVG / Thermco
- TEL
- Kokusai
- Tystar

\*ASM® is a registered trademark of ASM International. Conax Technologies and its products are not affiliated with, endorsed by, or sponsored by ASM International.

Typical applications include:



- ASM Advance® 4XX furnaces with standard 5-zone configurations and options such as removable or extra-thick sheaths, vacuum feedthroughs, and custom product features.
- Tokyo Electron (TEL) furnace platforms, including the Alpha® series.
- Hitachi Kokusai furnace systems, including the Vertron® series, available with either quartz or SiC sheaths.

## STANDARD OR CUSTOM ENGINEERED

Whether you require a direct replacement or a fully customized solution, Conax engineers can design a profile thermocouple tailored to your equipment, process conditions, and temperature control requirements.

Available customization options include:

- Quartz or SiC sheaths
- Extra-thick or removable sheaths
- Vacuum feedthroughs
- Replacement sheaths for aggressive process environments
- Wire and insulator assemblies for retrofit applications (refurbished thermocouples)
- Custom connector configurations
- Thermocouple "swap" trading in a used unit and applying the platinum valve toward a new replacement unit

Contact us with your requirements. We will happily work with you to find the best configuration!

## FLEXIBLE CONFIGURATIONS

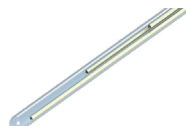
Conax offers a wide range of straight-sheath profile thermocouples, primarily for horizontal furnace applications. These are available with or without quartz socket connections and can be supplied with replacement sheaths, allowing the sheath to be replaced while the internal thermocouple remains in service.



Profile thermocouples are typically configured with either 3-zone or 5-zone sensing elements. Thermocouple wires can be installed in a single 6-hole or 10-hole insulator, or in individual 2-hole insulators for each sensing zone.



6-hole or 10-hole insulator



Three or five 2-hole insulators

Standard and miniature 2-pin connectors are available, as well as multi-pin screw and bayonet-style connectors. Lead wires normally run continuously from the sensing junction to the connector using the same noble metal thermocouple wire as the probe. For applications where cost optimization is desired, extension-grade wire can be used in the lead wire section.

## AVAILABLE THERMOCOUPLE TYPES

Conax profile thermocouples are available in the following calibrations:

- Type B (Pt-Rh)
- Type R (Pt-Rh)
- Type S (Pt-Rh)
- Type K
- Type N

These options allow you to select the thermocouple best suited to your operating temperature, process environment, and accuracy requirements.

## PROFILE THERMOCOUPLE CALIBRATIONS

Conax offers Profile Thermocouple calibrations at standard or customer specified temperature intervals. All calibrations are conducted under the guidance of our quality system, certified to ISO 9001 and are performed by comparison techniques as defined in ASTM E220. Conax utilizes primary and secondary standard thermocouples that are traceable to NIST and state-of-the-art equipment with a custom automated process control and data acquisition system.