

Engineering, Test & Calibration Services

Conax built its reputation on exceptional engineering capabilities and dedication to a thorough understanding of all aspects of temperature measurement. That tradition continues today, with a full complement of engineering, test, quality assurance and calibration services available in our state-of-the-art manufacturing facility.

Conax engineers welcome the opportunity to discuss and develop solutions to challenging applications. In addition, we offer the latest technology in test equipment for prototyping and design to assist in development of new solutions to customer problems.

This dedication to excellence is also a foundation of our quality assurance program. Raw materials for critical components are thoroughly tested prior to assembly, and all RTDs and thermocouples undergo rigorous electrical inspection before shipment. Conax Quality Assurance programs conform to ISO 9001/ANSI/ASQC Q9001:2000, MIL-I-45208A and MIL-I-45662 standards. Specific tests may be ordered by a customer to meet application standards.

Our in-house capabilities include:

- Temperature Sensor Calibration
- Time Response Testing in accordance with ASTM E644 methods and procedures
- X-Ray and Liquid Dye Penetrant Non-Destructive Testing
- Thermowell Analysis to ASME Performance Test Code 19.3
- Vibration Testing
- Hydrostatic & Pneumatic Pressure Testing
- Helium Mass Spectrometer Leak Testing
- Temperature/Humidity Chambers
- Dimensional & Optical Gauging Systems

Calibration Services

While all Conax sensors are designed to perform accurately, calibration can often be useful in ensuring that your system will provide the most accurate output possible at a given temperature point. Calibration services report the actual deviation of a specific sensor at a given temperature within the allowable limits of error. This improves the overall system accuracy by providing the data to subtract out the sensor error. As sensor characteristics change over time due to aging, mechanical

working and effects of environment, periodic recalibration is essential to re-establish the known deviation and ensure that your sensor system continues to provide accurate data.

Conax can precision calibrate your thermocouples, RTDs and thermistors, alone or in assemblies, using industry accepted comparison techniques in a modern, environmentally controlled calibration lab to the following specifications:

- Calibration to NIST traceable standards
- Calibration methods and procedures complying with ASTM E220 and E644
- Calibration ranges:
 - -30° F to +3000° F (-34° C to +1650° C) (For lower temperatures, consult factory)
 - -320° F (-195.8° C) (Boiling Point of Liquid Nitrogen)
 - For 900° F or higher, the minimum probe length is 18 inches.
- Temperature control methods include highly stable liquid baths, fluidized powder baths or electrically heated tube furnaces.

Reports

Detailed calibration reports are provided for each test temperature, indicating the temperature of the unit under test, the temperature of the calibration standard, and the allowable deviation vs. the actual deviation.

For RTDs, a resistance vs. temperature report based on the Callendar Van Dusen equation can be provided. This report specifies the temperature vs. resistance characteristics specific to the RTD under test when the sensor is calibrated at a minimum of three points.

Each report is certified by highly trained quality personnel and is maintained on file for future reference.

Calibration Guidelines

Sheath Material	Maximum Recommended* Calibration Temperature
Stainless Steel	1650° F (899° C)
Inconel	2100° F (1149° C)
Noble Metal (Platinum)	3000° F (1650° C)
Ceramic (Alumina)	3000° F (1650° C)
Refractory Metal (Molybdenum)	800° F (427° C) in air 3000° F (1650° C) in inert atmospheres

*Recommended temperatures are a guide and can be exceeded pending Thermocouple and RTD element type.

The image displays a technical drawing of a thermocouple assembly with labels for 'T11 TERMINATION HEAD', 'Ø.08', '(50-14 NPT)', 'TYPE T/C DUAL UNGROUNDED 304 SST SHEATH', and '13.00" ±.015'. It also includes a 'RETURNED MATERIALS AUTHORIZATION' form, a 'CERTIFICATE OF CALIBRATION THERMOCOUPLE ASSEMBLIES' data sheet with a table of calibration points, and a 'PARTS LIST' table.

Customer Tag No.	Specimen #	T _{Actual} (°F)	T _{Standard} (°F)	Deviation (±°C)	Compliance
51943-4-97	43.896	1067.79	1067.86	0.07	Accept

Pressure/Vacuum Sealing of Wires and Probes

Conax Buffalo developed the “soft sealant” method of pressure/vacuum sealing and is still the leading manufacturer of this type of sealing device. Based on the compression of a sealant material within a fixed housing, the practical application of this technology relies on a thorough understanding of the behavior of sealant materials. Conax offers a complete range of pressure/vacuum compression sealing gland options for wires and probes, including packing glands, transducer glands, electrode glands, power lead glands, split glands, multi-hole metal, multi-hole ceramic and metal ferrule glands.

We also offer a line of accessories, including torque wrenches, crow's feet, socket adaptors and lubrication kits. For information, request the Conax Pressure and Vacuum Sealing Catalog or contact a Conax sales engineer at 800-223-2389.



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com



For more information call: 1-800-223-2389 • e-mail: conaxbuf@conaxbuffalo.com • visit our website: www.conaxbuffalo.com