Furnace Parts
Excellence in temperature measurement

CURTISS-WRIGHT

PRECISION TEMPERATURE SENSORS FOR METALS PROCESSING

ENGINEERED FOR YOUR SUCCESS

ULTRA | Energy

METALS PROCESSING

Precision temperature sensors for metals processing environments

Producing and heat-treating metals has a unique set of requirements. Furnace Parts was a company founded in 1974 in Cleveland Ohio to provide temperature sensors to metals processing firms. Part of Ultra Energy, which was acquired by Curtiss-Wright in late 2024, Furnace Parts products remain available through a team of metals processing specialists who are dedicated to ensuring customers have a reliable supplier of high-quality temperature sensors and associated systems.

- Metals processing measurement and control since 1974
- Temperature sensors designed for metals processing applications
- Consultative approach to recommending product-based solutions
- Highly responsive to your needs
- Short lead times for order fulfilment
- Continuous supply of sensors for effective inventory management
- Long term sustainment of critical parts and documentation

Temperature sensors designed for your application

The temperature sensors we manufacture are designed for the challenging environments associated with metals processing. Our complete offering encompasses thermocouples through to sensor assemblies and service packages that ensure you always have the sensors you need on site.

Focus on quality

Our products provide exceptional accuracy, stability and reliability to support your applications, with their accuracy verified in our ISO/IEC 17025:2005 calibration facilities and offer accuracy of documentation IAW AMS2750, BAC 5621, NIST, etc. Our design, fabrication, validation and supply chain set-up ensure we can develop and deliver sensors to meet all your production requirements.

Calibration Laboratory

Our in-house Calibration Laboratory provides sensor calibration services for secondary standards as well as working standards. Our customers can count on our experienced technical and management personnel to provide accurate and reliable service with quick turnaround. Our in-house Calibration Laboratory was one of the first of its kind to receive the prestigious ISO/IEX 17025 accreditation.

We can also certify to AMS 2750 & BAC 5621, and many other specifications when applicable
NIST traceable calibration reports are available based on customer requirements.

Thermocouples

The Calibration Laboratory has five furnaces and is capable of calibrating the following types of thermocouples: C, E, J, K, N, T, R, S and B.

Thermocouples are calibrated by comparison techniques based on ASTM E220, against secondary standard thermocouples. The standard thermocouples are calibrated against a reference standard thermocouple directly traceable to the National Institute of Standards and Technology within a temperature range of 110°F to 2700°F.

Thermocouples are certified, as specified by contract, to either standard or special limits of error as stated in ASTM E230.

In addition to meeting the required limits of error for initial calibration, other acceptance criteria – such as sampling, lot size, front to back tolerances, etc. – is based upon AMS 2750 E, unless otherwise specified by contract

Industries

- Steel fabrication
- Aluminum
- Casting and forging
- Specialty metals
- Industrial heat treating/thermal processing
- Aerospace
- Power generation
- Oil and gas
- Petro chemical
- Glass
- Cement
- Cremation industry
- Military and defense
- Plastics
- Diesel and gas turbine

PRODUCTS, PARTS & ACCESSORIES

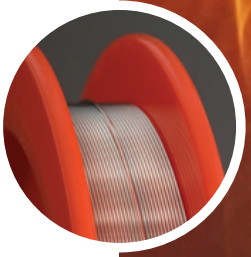
Mineral insulated metal sheathed thermocouples (MgO)

These types of thermocouples are perfect for use in demanding applications. Compact, moisture proof and pressure resistant, MgO thermocouples are ideal for control or load thermocouples or for furnace surveys and system accuracy tests. Available in Types E, J, K, N and T.

High temperature thermocouples

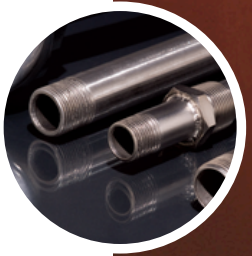
Types R, S, B and C are available with ceramic, Inconel, Hastelloy and Molybdenum sheaths in standard and custom lengths. We offer a Platinum reclamation program for used Noble metal thermocouples to reduce total costs.

Noble metal thermocouple wire



Bare thermocouple wire for use in-house applications. Multiple calibrations and wire sizes are available to meet various specifications. We offer a Platinum reclamation program for used Noble metal thermocouple wire to reduce total costs.

Metal protection tubes



Protection tubes are offered in Inconel, 300 and 400 series stainless steels, cast iron and carbon steels. Tubes are tapered closed for increased durability and
added protection. Stocked in many diameters and bore sizes.

Resistance temperature detectors (RTD)

RTDs are available in 2, 3 and 4 wire designs, in classes A and B. Standard and high-temperature elements are configured to meet customer requirements.

Ceramic Insulators

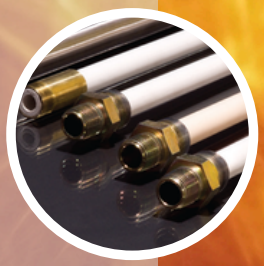
Manufactured in a wide range of diameters, bore sizes and configurations, ceramic insulators are available in alumina, mullite and hafnia.

Insulated wire thermocouples

Custom assemblies for a wide variety of environments and applications – from the plastics industry to high-temperature vacuum heat treating. Lengths and assemblies are configured to exact specifications.

Ceramic protection tubes

Available in custom lengths with cemented mounting fittings, ceramic protection tubes are manufactured in alumina, mullite, quartz, recrystallized silicon carbide, Hexalloy® and LT-I metal ceramic.



Thermowells

Made from a variety of materials, such as 300 & 400 series stainless, Inconel, Hastelloy and titanium, thermowells are configured to customer specifications.

Hardware

We offer a wide variety of hardware and accessories, such as heads, and blocks, plugs and jacks, tube adapters and compression fittings. Our hardware is offered for efficiency, convenience and added value.

Thermocouple wire

Available in bare or insulated, thermocouple grade or extension grade. We stock a wide variety of wire sizes and types, pre-calibrated per AMS 2750. Insulation types include fibreglass, high temperature glass, Refrasil® and ceramic fiber, among others.

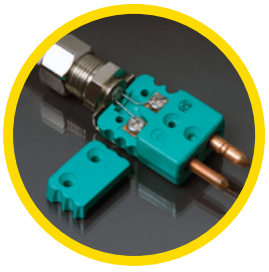
PRODUCTS, PARTS & ACCESSORIES (CONTINUED.)

Base metal thermocouples

Types E, J, K, N and T are available in a variety of wire sizes and configurations. Custom lengths, insulators, heads, plugs, jacks, blocks and flanges are available to meet application requirements.

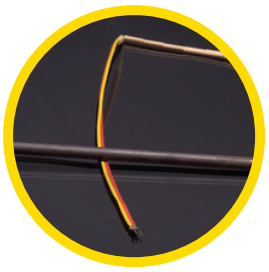
Vacuum furnace

Types R, S, B and C, these thermocouples are argon backfilled and epoxy sealed, ideal for use in vacuum furnace applications.



Immersion tips

A unique temperature measurement tip with a reusable handle, this product is made for intermittent temperature measurement of nonferrous molten metals (such as aluminum, brass, copper and other non-ferrous applications).



QUALITY STANDARDS

Supplying safety-critical industries brings with it the responsibility to meet the highest standards at all times. We are committed to consistently delivering above and beyond industry-recognized standards to support our customers' success.

Furnace Parts has a robust quality management system and maintains international certification in all relevant areas. This commitment guides our work and provides reassurance that we will consistently deliver above and beyond the level you require.

We vet companies in our supply chain to ensure they meet our high standards, commit to our code of conduct and always meet our requirements, as documented in our Supplier Requirements Manual.

United States of America standards and certification

- ISO 19443 (QMS for nuclear suppliers)
- AS9100=2016 / JISQ 9100:2016 / EN 9100:2018 and ISO 9001:2015 – ASQ/ANSI/ISO 9001:2015
- ASME section III certification (NPT)
- TSSA N285.0 (CSA)
- ATEX Quality Assurance Certificate
- HAF604 for Design
- Laboratory scope of accreditation A2LA ISO/IEC 17025:2017 and ANSI/NCSL Z540-1-1994
- ITAR DDTC Manufacturer and Exporter Registration Statement
- ASME NQA-1 (Nuclear Quality Assurance)
- CSA N299 (Nuclear Quality Assurance

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CURTISS-WRIGHT

United States of America

707 Jeffrey Way
Round Rock
Texas 78665-2408
USA

Tel: +1 512-434-2800

United Kingdom

Innovation House
Lancaster Road
Ferndown Industrial Estate
Wimborne
Dorset BH21 7SQ
UK

Tel: +44 (0) 1202 850 450

For more information

Web: ultra.energy
Email: sales@ultra.energy

About Ultra Energy

Organizations working with industrial technologies must deliver reliable operations at the same time as safeguarding people, the environment and infrastructure. We develop and manufacture measurement and control solutions that give our customers complete, long-term control over systems operating in harsh environments, helping them operate safely and increasing the value derived from their investments over their total lifespan.

Part of Curtiss-Wright since January 2025, Ultra Energy has worked with industrial customers for nearly 70 years. We support customers across the world from facilities located in the US and UK. Our solutions are embedded in strategic national infrastructure and our people are active partners in customer programs focused on delivering advanced future capabilities.

Contact us today

Our engineered solutions, sales and customer service groups are readily available to meet and exceed your needs. We are dedicated to providing our customers with the highest level of service, creative solutions and short product lead times.