



CCPI Europe Ltd.

Temperature Technology Centre

CCPI Europe Ltd. History

1984

Consolidated Ceramic Products was established by Fred Knight as a wholly owned subsidiary of Consolidated Ceramics Products Inc. based in Blanchester, Ohio. Manufacture and stocking was carried out from Fred's home.

1988

The company had now grown to a level where larger premises and additional personnel were required. This involved a move to industrial units at Chesterfield.

1994

Due to further expansion the company moved to Norwood, Industrial Estate, Sheffield.

1996

A service department was added providing on-site and workshop based instrumentation repairs and calibration with a 24 hour call out facility.

1998

The company had expanded from the one unit in 1994 to now four units on this industrial area. This gave the company 10,000 square feet of manufacturing and stocking space. With this extra space the addition of a UKAS (NAMAS) calibration laboratory was established that became accredited in November 1998. This laboratory allowed thermocouples and test equipment to be calibrated with traceability to National Standards.

1999

In order to expand into the European market our Amsterdam based distributor, Mefec BV was purchased and integrated into the company.

2000

The service department achieved UKAS accreditation for on-site surveys and instrumentation calibrations.

2001

Expansion continued with the establishing of a joint venture in India, with Ajay Syscon to design and introduce premier products into this sub-continent market.

In September the laboratory achieved accreditation to ISO/IEC 17025:1999 general competence of testing and calibration laboratories worldwide standard operated by UKAS.

During October saw further expansion into the Middle East in the establishing of a joint venture company based in Bahrain. Gulf Temperature Sensors is a majority UK owned manufacturing facility established to become a centre of temperature sensing excellence in the Middle East.

2002

The company achieved accreditation to BS EN ISO 9001:2000 for its quality management system, one of the first companies to achieve this accreditation.

2003

The company redeveloped its manufacturing facilities, doubled its personnel to meet with containing expansion of its business.

2006

The company had expanded further with major business and contracts in Europe and North America.

2008

Consolidated Ceramic Products became CCPI Europe.

Acquisition of Able Wire Company, Naugatuck, New England and re-named CCPI Wire and Sensors.

This manufacturing facility will extend CCPI Europe's range of products it can offer with the inclusion of coated thermocouple wires to the North American, European and Middle East. In September installation began of a new temperature calibration laboratory which will have traceability to NIST.

2009

The company moved to a new 30,000 square foot, £3 million, state-of-the-art purpose built manufacturing and calibration facility.

The UKAS laboratory is recognised as one of the best commercial temperature calibration laboratory in Europe and works with the National Physical Laboratory to implement the latest advances in temperature technology into industrial applications.

Achieved accreditation to BS EN ISO 9001:2008.

In March announced that Gulf Temperature Sensors were to built a new production and calibration facility at a new prestigious development in Bahrain.



Temperature Sensors

Coil Calibration

Individual calibration of multiple thermocouples can work out very expensive and increase delivery times. In order to combat this, the CCPI Europe calibration laboratory developed the coil calibration concept.

This entails manufacturing a thermocouple from each end of a coil of thermocouple wire and calibrating them over their complete temperature range and the results tabulated showing conformity to the relevant standards I.E **AMS2750, RPR953, BAC5621, BS 2M54** and **AIAG CQI-9**. We have proved through extensive testing that the mean of these results can then be applied to ALL the thermocouples produced from this coil and all Aerospace auditors agree and accept coil calibrated thermocouples.

Temperature Sensors

CCPI Europe manufactures temperature sensors for the following industries:

Aerospace

For many years we have supplied thermocouples of the highest quality to meet the stringent demands of the Aerospace Industry, manufacturing to all quality standards including **AMS 2750**, **RPS953** and **BAC 5621**. Our design team can offer advice on specific thermocouple assemblies incorporating resident and non resident SAT sensors as well as for TUS and control/record.

Automotive

We have a wide range of special design thermocouples for the Automotive industry which meet the requirements of **AIAG CQI-9**.

Glass

In-Glass temperature measurement for effective fore hearth and crown temperature control resulting in increased efficiency and lower costs.

Molten Metal

From its conception CCPI Europe has served the molten metals industry, particularly Aluminium with the manufacture of ceramic coated cast iron products which give protection against corrosion during immersion in molten Aluminium, Zinc and Lead.

Food and Medical

Temperature sensors specifically designed to meet the strict International Health and Hygiene regulations

Electronics and Semiconductors

Custom made profiling and spike assemblies to ensure a cost effective service to meet customers Individual needs in temperature control



Excellence in Temperature Measurement

Temperature Sensors

Mineral Insulated Thermocouples

Mineral Insulated thermocouples are a form of thermocouple manufactured from cable consisting of matched thermocouple wires typically insulated by magnesium oxide and having an integral outer sheath. During the thermocouple manufacturing process hot and cold junctions are formed which hermetically seal the conductor wires from the surrounding atmosphere.

It can easily be bent and formed without affecting its performance resulting in it being ideal for installation in difficult locations. By careful selection of the sheath material, conductors, diameter and terminations it can be used in nearly all applications.

The following thermocouple element types are available in mineral insulated form: Types T, J, K, N, R, S and B.

Mineral Insulated Thermocouple cable is strong, reliable, inexpensive and an industry standard; it is drawn down or swaged from its original size to a range of diameters, the more common sizes are :1.5, 2.0, 3.0, 4.5, and 6mm. Usual sheath materials are: Stainless Steel, Inconel and Nicrobel

Resistance Thermometers

A Resistance Temperature Detector (RTD) is a resistor designed to measure temperature using the known resistance vs. temperature relationship of metals. An RTD is the actual temperature-sensing element and is usually specified by its resistance @ 0°C and a Fundamental Interval (FI). The FI is the ohmic change of its resistance between 0°C and 100°C. It is typically unprotected and offers only the element leads for terminations.

A Platinum Resistance Thermometer (PRT) probe is an assembly composed of an RTD, a sheath or tube to protect the element, lead wires, and a termination or connection head. The PRT offers the best accuracy of any device for temperature measurement over the range -200°C to +800°C.

The most common form of RTD is the Platinum 100Ω @0°C with a 38.5 FI which is dominant in Europe and in many other parts of the world

There are 3 common types of wiring configuration for RTD's

2 Wire System – a lead wire is connected to each side of the element – the disadvantage is that the resistance/errors of the lead wires is added to the resistance of the element causing inaccuracies. These inaccuracies increase directly in proportion to the length of the lead wires so the length of this type of probe is usually restricted to 150mm max. Even taking these inaccuracies into account the 2 wire PRT is still a far more accurate device than a base metal thermocouple at lower temperatures

3 Wire System – 2 wires are connected to one side of the element and the loop resistance is measured and compensated for giving a more accurate measurement – This is the most common form of PRT used in Industry today

4 Wire system – 2 wires are connected to each side of the element and, using the Wheatstone Bridge Principle an extremely accurate measurement of the resistor can be made. – This system is usually reserved for laboratory work where the highest precision is required

CCPI Europe can design and build Resistance Thermometer Assemblies to suit all industry requirements



Excellence in Temperature Measurement

Accessories

Noble Metal Wires

We stock thermocouple wire in Types R & S to Class 1 and Type B to Class 2, in diameters ranging from 0.15mm to 0.5mm. Diameters outside this range can be manufactured to customer requirements.

Ceramic Protection Sheaths

We offer a full range of ceramic protection sheaths to cover all industrial applications. Delivery is ex stock on most diameters and lengths

Ceramic Insulators

A range of 2, 4, and 6 bore insulators in various ceramics is also available off the shelf

Fittings

CCPI hold large stocks of compression fittings available to suit all standard thermocouple sheath sizes, in all of the popular thread sizes.

Standard materials available are stainless steel and brass. Cable sealing glands are also available for use with Autoclaves and other vacuum processes.

Connectors

CCPI offer a complete product range of thermocouple connectors in miniature and standard versions. In addition, a complete range of accessories and panels is available. All products can be supplied in either IEC or ANSI colour codes.

Also available are RTD connectors in a two, three or four wire version.

Three Body materials are available

1. Thermoplastic (200°C maximum) in IEC or ANSI Colour Codes
2. High Temperature Thermoplastic (350°C maximum) body colour
Brown with colour coded dot
3. Ceramic (600°C maximum) body colour White with colour coded dot

Wire and Cable

We now have our own wire and cable manufacturing capability so we can offer not only a standard range of thermocouple wire available ex stock but also a custom build facility where we can offer a bespoke service to meet customer specifications



UKAS & In House Calibration

The CCPI Europe calibration laboratory is a fully automated state of the art thermal calibration facility having the capability of conducting the calibration of all the standard thermocouple types (K, J, T, N, E, R, S, B) and many non-standard thermocouple types (Tungsten Rhenium, Nickel Molybdenum, Platinel, Iridium Rhodium) to the highest level of accuracy.

The laboratory covers the temperature range -200°C to 1600°C and has UKAS accreditation for the calibration of thermocouples and Resistance Thermometers to some of the tightest levels of uncertainty in the United Kingdom. We can also offer a calibration service for the supply of master thermocouples utilising fixed point calibration methods.

We also offer a full calibration service for thermal measurement instrumentation.

In addition to UKAS certification the CCPI Europe laboratory can also issue "In-House" calibration certification that is fully traceable to both the UK and USA National Standards utilising fully traceable equipment.

On Site Servicing and Surveys

Our Servicing Department offers a wide range of options for both on-site and factory based work to cover customers' requirements and, on completion, issue the relevant certification

On Site Servicing

Our technicians will visit your site at predetermined intervals to service and calibrate the agreed range of Instrumentation. Maintenance contracts can be set up to cover such things as replacement of instruments, thermocouples and breakdowns at fixed prices.

Breakdowns

Our Technicians would normally be on-site within 24 hours of being contacted but special arrangements such as 24 hour cover, 4 hour call out etc can be arranged if necessary

Temperature Gradient Surveys

We will carry out Temperature Gradient Surveys on your ovens or furnaces in compliance with your working specifications, the most typical being AMS2750, RPS 953, BAe RD 007 and BS 2M54:1991., ISPM 15. Through our UKAS accredited Laboratory we can carry out temperature gradient surveys on a wide range of ovens, furnaces, autoclaves, wood kilns etc and issue UKAS certification.

New Instrumentation

We can offer a wide range of Temperature monitoring and control equipment supplied individually or complete in a total control system

