PRODUCT OVERVIEW

AS COMPOSANTS

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RESPONSIVENESS
CUSTOMER SUPPORT
PRODUCT KNOWLEDGE

ABOUT US

Founded in 2001, **AS Composants** is a French company located in Normandy, 100 km west of Paris. It specializes in the sale of accessories dedicated to sensor production, with recognized expertise in the field of temperature and pressure measurement.

REACTIVITY - 5000 STOCK REFRENCES

A TECHNICAL CUSTOMER SUPPORT

LONG TERME CONTRACT OR EMERGENCY ORDER

CABLES AND WIRES

Thermocouples require specific cables to ensure proper transmission of the temperature signal. AS Composants offers the following three main families:

• So-called **"thermocouple" cables** which are made with the same alloys as the sensor itself, ensuring optimal accuracy. They are available with different insulation types: PVC, ceramic fiber, fiberglass, fluoropolymers (Teflon), Kapton or silicone, depending on the conditions of use. They are identified with the letter "T" in their designation according to the DIN IEC 60584.

• **Extension cables** replicate the nominal composition of the thermocouple but are used at lower temperatures to extend the signal to the measurement system. They are identified with the letter "X" in their designation according to the DIN IEC 60584.

• **Compensation cables** use substitute alloys that have a thermoelectric behavior similar to that of the thermocouple within a limited temperature range. They are identified with the letter "C" in their designation according to the DIN IEC 60584.

Multi-pair versions are also available, where several twisted pairs are grouped under a single sheath to optimize installation. The cables are flexible, durable, economically viable, and designed to minimize both signal disturbances & attenuation.

They can operate in temperature ranges up to 1200 °C, depending on the insulation materials used. The range includes a wide variety of insulators each suited for a specific temperature range. They also can be customized according to applications: reinforced against moisture, oils, chemicals, electromagnetic interference, mechanical stress, and high-temperature environments.

Construction	Single or Multi Pair
Conductor	Thermocouple, Extension, Compensation
Thermocouple Type	K, T, J, E, N, R, S, B, C
Conductor Size	AWG 12 to AWG 34
Conductor Stranding	Solid or Multi Strand
Core Insulation	PVC, Teflon, Kapton, Silicon, Fiber Glass, Ceramic Fiber
Screen	Braid and external armoring available
Colour Code	Following IEC or ANSI
Standards	IEC584.3 and ASTM E 230

MINERAL INSULATED CABLES

AS Composants has a complete range of mineral-insulated (MI) thermocouple cables, known for quality, robustness, and performance in extreme environments.

These cables consist of thermocouple wires surrounded by compacted magnesia (MgO) and inserted into a metallic sheath such as stainless steel or Inconel.

MI cables are used in many critical industrial sectors such as aerospace, nuclear power plants, chemical industry, marine applications, and semiconductors. Our company has stock available that can be supplemented by a European stock, ensuring quick availability and an effective response to requests. All the sheathed cables offered comply with international standards such as IEC 60584-2 Class 1, ASTM E230, and AMS2750G. They come with certificates guaranteeing their traceability and compliance.

The range of cables includes many sheath alloys, including AISI 316(L), 310, 321, Inconel 600, Inconel 625, Haynes, Hastelloy, platinum-rhodium, and other exotic materials such as molybdenum, titanium, and tantalum. Custom combinations of wires and sheaths are possible to meet specific needs. The cables are typically available in diameters ranging from 1mm to 10mm but other diameters are also possible.

These cables stand out for their excellent electrical resistance: their insulation resistance often exceeds 1000 MΩ, even at high temperatures. Their dielectric strength and low capacitance ensure a stable signal.

Finally, they can withstand temperatures ranging from -270 °C to 1650 °C, pressures up to 50,000 psi, and resist irradiated environments in nuclear facilities.

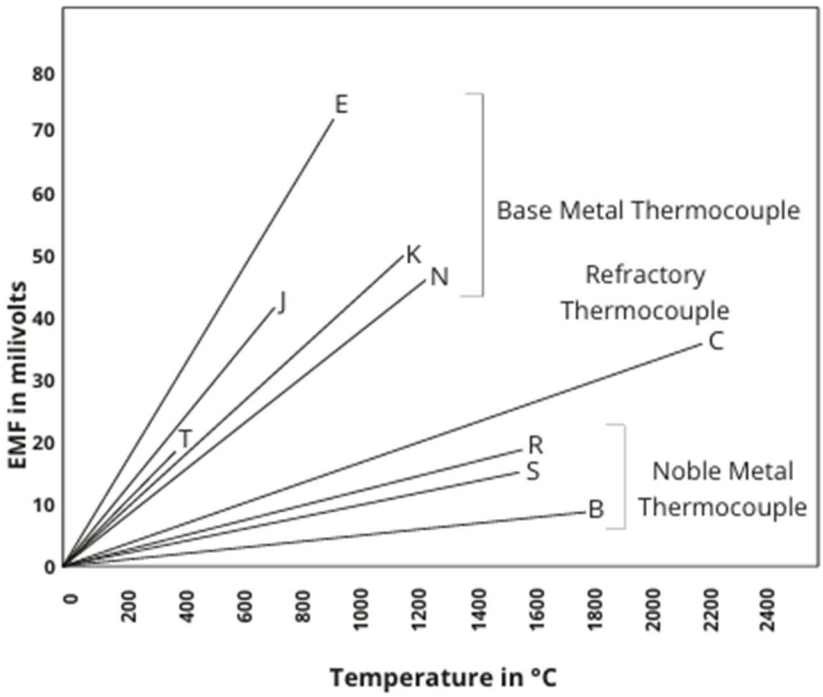
Construction	Simplex or Duplex
Sheath Material	304, 316, 321, Inconel, Pyrosil®, Pt10%Rh
Thermocouple Type	K, T, J, E, N, R, S, B, C
External Diameter	From 0.5 to 10mm
Standards	IEC584.3 and ASTM E 230

THERMOCOUPLE WIRES

To meet certain requirements, customers can build the thermocouple and its packaging. This requires extremely pure elements, calibrated metals, where each production batch is rigorously tested in an accredited laboratory and accompanied by a quality certificate.

The thermocouples are available as individual wires or pairs. All thermocouples comply with EN 60584-1, based on the international temperature scale ITS-90.

The choice of thermocouple type and diameter depends primarily on the application temperature, the surrounding atmosphere, the desired service lifetime, the required accuracy and sensitivity.



Thermocouples are supplied straight, in coils or in spools, depending on their length and diameter. The wires are wound on specific spools and protected by cushioning materials such as foam strips or stretch films.

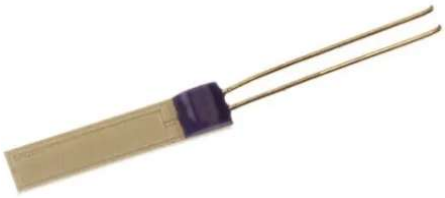
Construction	Individual wires
Thermocouple diameter	From 0.1 to 0.5mm (Thermocouple S, B, C, R)
	From 0.5 to 3mm (Thermocouple K, T, J, E, N)
Standards	EN 60584

SENSITIVE ELEMENTS

Temperature sensor core, the sensitive elements proposed in this section are mainly platinum resistance temperature detectors (RTD), supplemented by thermistors. They cover a very wide temperature range from -200 °C to +850 °C.

Three types of RTD highlighted are:

- Thin film elements
- Wire Wound in ceramic
- “Glass” probes

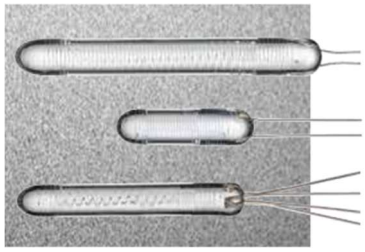


The Pt100 sensor is the most popular and also the most used in these three categories, although other resistance values are available such as Pt50, Pt200, Pt500, and Pt1000.

Thin film RTDs, also known as “thin film RTD” have become very popular due to their wafer processing which provides reliability, low cost and small size. They are covered with an insulator that gives them high resistance to thermal shocks and vibrations. Their flat profile is well suited for many industrial, medical, automotive, aerospace, cryogenic, and household applications.

Wound ceramic probes are among the most accurate. Although their cost is higher, they are indispensable in extreme and critical environments where stability, vibration resistance, and long-term reliability are essential. This product family is available in single and duplex versions.

Wound glass fiber platinum RTD elements are made by winding a pair of platinum wire around a glass core and then fusing the outside with glass. They are suitable for temperatures ranging from -200 °C to +450 °C and have the advantage of excellent resistance to vibrations and thermal shocks.



Construction	Thin films, Wire Wound ceramic, Glass probes or Kapton surface
Resistance value	PT50 to PT10000
Size and diameter	Starting 0.8mm
Accuracy *DIN4370* *IEC 60751*	 From Class B to 1/10 W0.3 to W0.03
T°C range	From cryogeny to +850°C

TERMINAL HEADS

A complete range of heads are waiting for you, intended for measuring equipment, mainly cast in aluminum but also in stainless steel and technical composite materials. We partner with identified and recognized manufacturers for their high-quality components, for their standardized connecting heads, as well as for their terminal blocks intended for connecting temperature sensors. We can also respond to our customers' innovative requests by collaborating on specific projects and needs:

- Creation of prototypes and pre-series
- The manufacture of custom covers
- The addition of personalized markings
- Painting in a wide range of colors

Each project is analyzed with the utmost care by our specialized teams to ensure technical feasibility, aesthetic quality, functionality, and adherence to the schedule. Quality is at the heart of our approach. We can meet international standards:

- Products with Protection Indices (IPxx)
- Ex Certification (ATEX/IECEx)
- Salt mist compatibility
- Etc.

We have an operational stock with many configurations to meet your urgent needs.

Our delivery times are thus quick, especially since our responsiveness is one of our great strengths. In addition to these heads, we also offer various mechanical and electrical connection accessories.

Terminal Head	DIN A, DIN B, KSE, KNE, MA, BUZ, NS, etc.
Cover	Normal, Oversize
Material	Aluminum, Stainless Steel, Composite
Input Process	1/2BSPP, M24x1.5
Cable Output	M20x1.5 (unique or Dual)
Color	Grey, Blue, Red

CONNECTORS

As a Hamitherm partner, AS Composants offers a wide range of miniature and standard connectors for both thermocouples and RTDs, as well as a complete range of accessories, panel inserts, terminals, tools, and mounting solutions.

HAMI-THERM

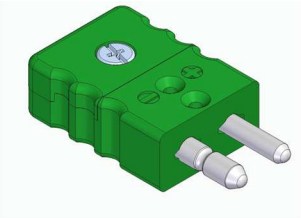
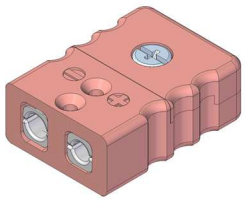
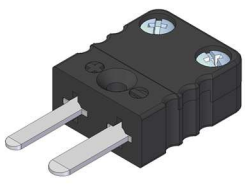
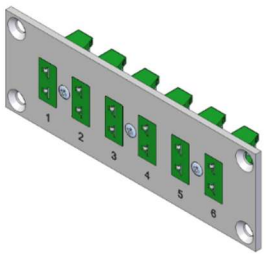
The very popular miniature connectors are an essential part of the range. They are made of fiberglass-reinforced thermoplastic with stainless steel screws and are resistant up to 220°C. High-temperature (540°C), ceramic (650°C) or locking variants are also available. They can be selected in 3 or 4-pin versions for ground connections or for 3 & 4-wire RTDs.

The range includes many accessories: silicone cable inserts, protective sleeves, locking clips, clamping rings, crimp inserts, stainless steel supports, etc. These parts increase reliability and provide mechanical protection and sealing.

Standard connectors are available in thermoplastic, thermoset, or ceramic materials for the very high-temperature version (up to 1200°C) and also in 3-pin and duplex configurations.

To equip your enclosures, we will find a complete range of panels and associated sockets, with various mounting options. Some versions feature a locking system to prevent accidental disconnections.

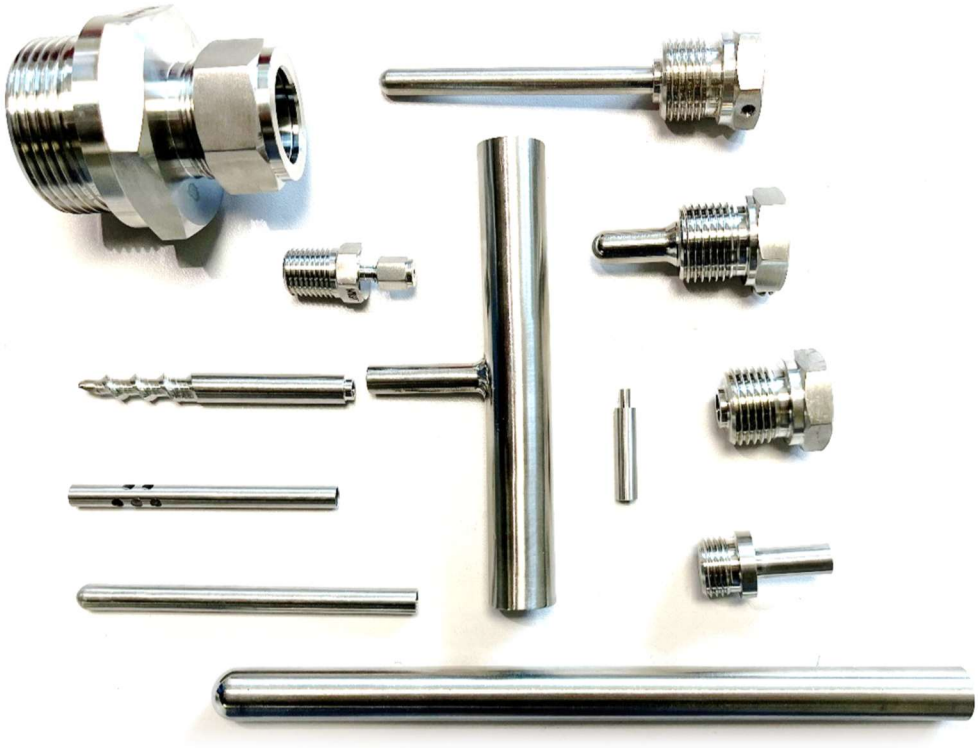
All of these products are available in all standard thermocouple color codes. This range meets the needs of manufacturers for connecting temperature sensors with reliability, durability, and modularity in the most demanding environments.

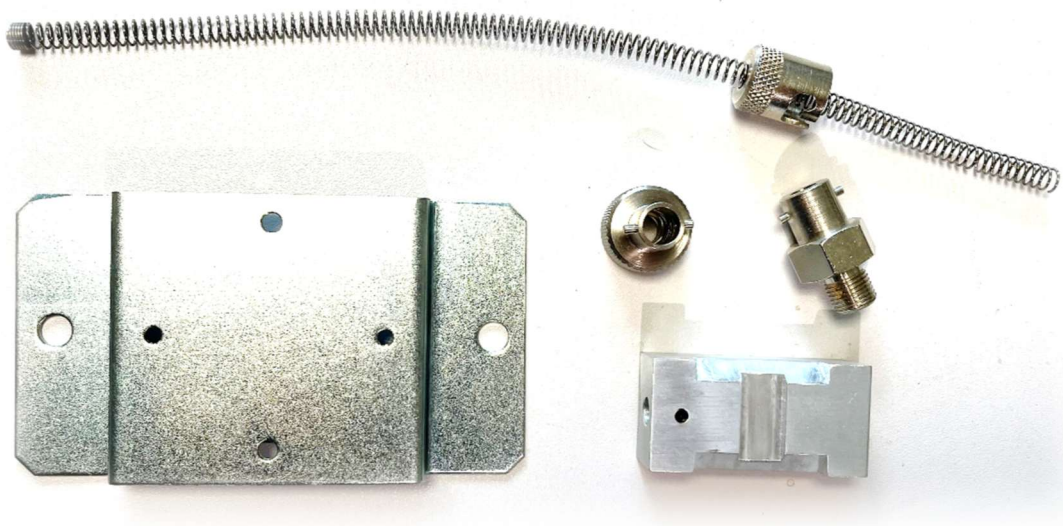
Thermocouple	K, T, J, E, N, R,/S, B, C and RTD
Size	Standard, miniature
Mounting	Straight or Panel mounted
Type	Plug, Jack
Materials	Thermoplastic, Ceramic
Number of contacts	2, 3 or 4 pins
Color	IEC or ANSI

MECHANICAL PARTS

To build your temperature sensor, we store for you a lot of accessories from pot seals to compression fittings. Mainly machined from massive stainless Steel (316L) rods, these parts can integrate safely most of application where corrosion, pressure, abrasion, or shear forces may threaten the component lifetime.



Although not exhaustive, here are some pieces: Bayonet Caps, Springs, closed one end tubes, thermowells, plates and so on.



COE TUBES & ISOLATORS

AS Composants has selected a wide range of technical ceramic, Closed One End (COE) and open both ends tubes for thermal, chemical, and mechanical applications, using oxide and non-oxide materials. These products are designed to operate at temperatures up to 2000°C.

Our range covers various materials of varying porousness: CRP530, CRE610, or APF710. These ceramics are suitable for extreme environments, whether oxidizing, corrosive, or with high thermal variation. The choice of sheath material depends on the ambient gas, temperature, and probe configuration. Recommendations are based on DIN 43724. Standard dimensions are available on stock, but custom sizes are also available upon request.

APF710 tubes, made from high-purity alumina, offer exceptional resistance to temperature and corrosion. CRE610, made from aluminum silicate, is recommended up to 1400°C. The more porous CRP530 is used up to 1350°C.

Silicon carbide (SiC) versions are also available in various configurations, such as recrystallized or nitrogen-containing. These tubes are suitable for inert, oxidizing, and corrosive atmospheres and can withstand temperatures up to 2000°C, depending on the version.

Open both ends tubes are available in CRE610 and APF710 versions, depending on the required temperatures. They are available in several geometries: lengths, diameters, and number of holes.

Material	CRP530, CRE610 and APF710 (C799)
Type	Closed One End (COE)
Length (mm)	530, 740, 1030,1430, etc
ODxID (mm)	6x4, 8x5, 10x6, 12x8, 15x10, 17x13, 15x8, 20x15, 24x18, etc.
Insulated Tubes, Beads	2, 4, 6 holes
OD (mm)	3.5, 5.5, 8.5, etc


DESLIGA LIGA
ZONA 7
ZONA 6
85/145
ZONA 5
TCY-48
Sensym
99
OUT
MAN.
A.T.
SET
85
133
35
DESLIGA LIGA
BANHEIRA

ELECTRONIC CONVERTERS

We offer a complete range of temperature converters for both RTD and thermocouples. Various output available from analog (0-5V, 0-10V, 4-20mA) to digital (RS-232, RS-485, CANbus, etc.).

Depending on your application, head or Rail Din mounting modules are proposed to directly integrate the terminal head of your instrumentation cabinet.

Other models are available:

- Dual inputs for redundant sensors
- Modules with display
- HART protocol combining 4-20mA signal and digital data for monitoring applications and/or harsh industrial environments.

AS Composants programs your modules to the desired temperatures, facilitating the commissioning of your future products.

OTHER : MAGNESIA, CEMENT, ETC.

To create your sensors, AS Composants also offers a full range of essential accessories, from conductive paste to insulating magnesia powder.

These accessories are technical products, like refractory cement, which enables reliable components assemblies and, consequently, future measurements. This product consists of two parts (powder and liquid), with mixing ratios varying depending on the application. It is suitable for both porous materials and metallic or dense surfaces. It cures completely at room temperature over 24–48 hours, with heat treatment possible to improve mechanical strength.

More than a supplier

EUROPE

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