

The background features a grid of temperature values in both Celsius and Fahrenheit, ranging from 0 to 100. A bright sunburst effect is visible at the top center. A horizontal bar with a gradient from orange to red is positioned above the main text. The bottom right corner shows a partial view of the Earth from space.

# ALLTEMP SENSORS

THE GLOBAL LEADER IN  
TEMPERATURE SENSORS

A Division of



[www.wika.ca](http://www.wika.ca)

# 2 MILLION SENSORS AND GROWING

Since 1978 we have manufactured over two million sensors guided by a simple principle—deliver a quality product, at a competitive price, first time, every time. That is why we are the global leader in the research, development and production of industrial temperature sensors.

Our 85,000 square foot primary manufacturing facility, located in Western Canada, in conjunction with our two satellite manufacturing plants in Eastern Canada and Texas, USA, gives us a solid base for designing and manufacturing over 200,000 temperature sensors every year. The delivery of those sensors is made possible by over 200 employees dedicated to customer satisfaction. Further, our sales initiatives are supported by strategically located offices across Canada, a first-rate distribution network in the USA and WIKA'S worldwide platform of manufacturing and distribution centres.

No matter where you are on the planet, you can be sure that one of our representatives is available to work with you for your sensor solutions.



## STATE-OF-THE-ART STATE-OF-THE-ART TEMPERATURE SENSORS TEMPERATURE SENSORS

Alltemp Sensors' Engineering department is tasked with two objectives:

**Improve our standard product offering and develop leading edge sensors using the latest technologies**—this has led to products such as our patented V-Pad Thermocouple, Transmitter Bushing, Cut-To-Length Sensor, and CSA/FM, CENELEC approved Flame Path Fitting.

**Design custom sensors for our customers**—we have an excellent reputation for custom designing and manufacturing sensors for specific applications that are beyond the scope of our catalogue.

Meeting these two challenges would not be possible without our first-rate engineers, state-of-the-art CAD department, complete manufacturing and testing facilities, and a corporate culture that enhances customer satisfaction.

Our development of state-of-the-art temperature sensor technology is complemented by our extensive and informative web-site. Our entire product catalogue is available in electronic format (pdf) along with various product templates that allow customers to add notes, dimensions and mark-ups right from their computers.

# THE QUALITY AND SERVICE THAT BUILDS CUSTOMER LOYALTY

We have built Alltemp Sensors on a foundation of service—that is why our customer loyalty is the envy of the industry. For us, service is more than just providing 24 hour access to people who can solve problems. Maintaining a large inventory of standard and exotic materials enables us to respond to rush and custom orders. Getting to know our customers, understanding their needs and being prepared for their product requirements is what service means to us.

Of course great service means nothing without an assurance of quality. Our Quality Assurance Manager guides an experienced team of inspection staff to ensure that every sensor meets the stringent criteria of ISO 9002 and conforms to standards such as ANSI/ASME, ASTM, and A.B.S.A.

Alltemp Sensors' commitment to quality also extends to our employees and the environment. We support ongoing professional development and actively pursue more environmentally friendly methods of manufacturing.



## Perfectly calibrated sensors

We recognize that your business relies on accurate, high-quality sensors. As a result, we have constructed one of the finest calibration labs in Canada.

Our lab has the following capabilities:

**Temperature Range:** -40 – 1100°C (-40 – 2000°F)

### Products:

- Resistance Temperature Detector (RTD) Sensors
- Thermocouple Sensors
- RTD Elements
- Infrared Guns
- Hand Held Meters
- Temperature Transmitters
- Thermocouple Simulators / Calibrators
- Temperature Sources (e.g. Dry Block Calibrators)

### Standards of Conformance:

- ITS-90
- ASTM E563, E644, E1137, E220, E230, STP 470
- NIST TN 1265, Monograph 175, TN 1297

### NRC & NIST Traceability:

All calibrations and equipment are traceable to the National Research Council (NRC) or National Institute of Standards and Technology (NIST).

### RTD Tolerance:

- Class A, Class B, 1/10 DIN, Callander-Van Dusen Coefficients (A, B, C, R<sub>0</sub>,  $\alpha$ ,  $\delta$ ,  $\beta$ )
- For other available tolerances please consult factory

### Thermocouple Tolerance:

- Standard & Special Limits
- For other available tolerances please consult factory

### Documentation:

A "Calibration Certificate" is issued for each calibration. This certificate is verification that the purchased sensor or product conforms to a specific tolerance at a given temperature (i.e. Measurement Conformance).





# MANUFACTURING TO THE HIGHEST STANDARD



Alltemp Sensors manufactures temperature sensors for industries such as: petrochemical, power and utilities, oil and gas, pulp and paper, research and development, pharmaceutical and secondary manufacturing. Our commitment to quality is supported by many product approvals that include CSA, FM, UL, and CENELEC. All of our products are manufactured in accordance with ISO 9002. Additionally, many of our products conform to the stringent guidelines set by organizations including ASME, ANSI and A.B.S.A.

As a division of WIKA Instruments Ltd., a subsidiary of Wika Alexander Wiegand GmbH & Co., the leader in pressure measurement, we offer our customers not only a full range of pressure and temperature instrumentation, but global service that is unparalleled in our industry.

When you take delivery of an "Alltemp" sensor you take delivery of a precision product that has been manufactured to the highest of standards and is supported world wide.

## Manufacturing and Testing Overview

### Machine Shop

- Thermowells & custom fittings
- Gas Tungsten Arc Welding (GTAW)
- Over 50 registered welding procedures including super alloys
- Welders are pressure "B" certified
- 8 CNC machines
- Host of GunDrill machines (up to 72" deep)
- Milling machines
- In-house shot peening

### Testing

- Pressure testing (hydro & pneumatic) up to 10,000 psi
- Liquid penetrant inspection (LPI)
- Hardness testing (HT)
- Ultrasonic testing (UT)

### Outside Services

- Radiography (RT)
- Positive material identification (PMI)
- Magnetic particle inspection (MPI)
- Chemical analysis (Destructive)
- Charpy testing (Destructive)

# CUSTOM MANUFACTURER OF TEMPERATURE SENSORS FOR ALL APPLICATIONS

## Multi-point, Multi-well Reactor Assemblies:

- Lengths up to 140 feet
- Constructed from various alloy steels
- In-house pressure and non-destructive testing
- Engineering certification available to ANSI/ASME codes
- Custom built to your requirements
- Over 50 welding approvals covering a wide variety of metals



## Custom Made Sensors:

- Mineral insulated thermocouples ranging from .010" to .500" in diameter
- RTD's designed for high temperature and high vibration applications
- Patented "V-Pad" thermocouple for accurate, reliable, tube skin temperature measurement
- CSA approved "spring loaded flamepath fitting"
- Large inventory of exotic materials
- Electrically isolated and tip sensitive sensors
- 24 Hr. rush service 7 days a week



## Industrial assemblies:

- CSA explosion proof design
- Full penetration welding on all flanged assemblies
- Spring loaded design for fast response
- Coated heads for corrosive service
- Custom built to your specifications
- Latest space age materials for high temperature erosive and corrosive applications



## Down Hole Multi-point Assemblies:

- Major supplier to the oil field market
- Up to 36 points in one bundle
- Assemblies in excess of 5,000' long
- Custom designs utilizing metal sheath and soft cable
- Exclusive "Alltemp" transition design
- Self-contained data logger for remote locations
- Custom built reeling machines

## Thermowells and protection tubes:

- Manufactured by Alltemp Sensors
- Solid bar stock thermowells up to 72" long
- Standard threaded thermowells available from stock
- Custom software for thermowell design calculations
- All flanges are full penetration tig welded
- CSA approved thermowells

## Repair & test services:

- Thermocouple harness rebuild and repair services
- Field inspection and repair
- Material identification and performance testing available
- Thermocouple splicing and straightening services available
- Full engineering and CADD support for all your requirements
- De-contamination for noble metal thermocouple sensors

# TEMPERATURE ACCESSORIES & SUPPORT



Temperature Calibrators



Temperature Transmitters



Rotary Switches



Dial Thermometers



Hand Held Indicators

# THERMOCOUPLES VS. RESISTANCE TEMPERATURE DETECTORS

**Thermocouples (T/C's)** are the most widely used sensors for temperature measurement in the industrial market place. They can be manufactured from a variety of thermocouple types and sheath materials. Sizes range from .010" to .500". Alltemp Sensors can assist you in selecting the correct thermocouple for your application, and our sales staff are available to answer your application questions or concerns.

**Advantages**

- Inexpensive
- Quick response time
- Rugged
- Tip sensitive
- Self-powered
- -200 to 2300°C range
- Small diameters—0.010"
- Multi-point sensing

**Disadvantages**

- Non-linear
- Less stable than RTD's
- Low Sensitivity
- Low voltage output
- Requires T/C extension wire
- Reference required
- Accuracy degrades over time

**Resistance Temperature Detectors (RTD's)** are temperature sensors with the greatest degree of accuracy. The element is a two wire circuit in four basic designs: thin film, wire wound ceramic, glass, and kapton. Each element design has its application advantages and limitations. Alltemp Sensors can assist you in selecting the correct element and advise on the most effective assembly design for your application.

**Advantages**

- Linear output
- Stable
- Special extension wire not required
- Cold junction compensation not required
- More accurate than a thermocouple
- Repeatable

**Disadvantages**

- Limited range of -200 to 850°C
- Slow response
- Current source required
- Self heating error
- More expensive than a thermocouple
- Less rugged than a thermocouple

Thermocouple Type		°C.			°F.		
ANSI Type Symbol	Wire Alloys	Temperature Range	STD. Limits	Special Limits	Temperature Range	STD. Limits	Special Limits
T	Copper (+) Blue Constantan (-) Red	-200° to -65° -65° to +130° +130° to +350°	±1.5% ±1° ±.75%	±.8% ±.5° ±.4%	-330° to -85° -85° to +270° +270° to +660°	±1.5% ±1.8° ±.75%	±.8% ±.9° ±.4%
J	Iron (+) White Constantan (-) Red	0° to +285° +285° to +750°	±2.2° ±.75%	±1.1° ±.4%	+32° to +545° +545° to +1400°	±4° ±.75%	±2° ±.4%
E	Chromel™ (+) Purple Constantan (-) Red	-200° to -170° -170° to +250° +250° to +340° +340° to +900°	±1% ±1.7° ±1.7° ±.5%	±1° ±1° ±.4% ±.4%	-330° to -270° -270° to +480° +480° to +640° +640° to +1600°	±1% ±3° ±3° ±.5%	±1.8° ±1.8° ±.4% ±.4%
K	Chromel™ (+) Yellow Alumel™ (-) Red	-200° to -110° -110° to 0° 0° to +285° +285° to +1250°	±2% ±2.2° ±2.2° ±.75%	±1.1° ±.4%	-330° to -165° -165° to +32° +32° to +545° +545° to +2300°	±2% ±4° ±4° ±.75%	±2° ±.4% ±.4%
N	Nicrosil (+) Orange Nisil (-) Red	0° to +285° +285° to +1250°	±2.2° ±.75%	±1.1° ±.4%	+32° to +545° +545° to +2300°	±4° ±.75%	±2° ±.4%
S	Platinum 10% Rhodium(+)Black Platinum (-) Red	0° to +600° +600° to +1450°	±1.5° ±.25%	±.6° ±.1%	+32° to +1112° +1112° to +2642°	±2.7° ±.25%	±1.1° ±.1%
R	Platinum 13% Rhodium(+)Black Platinum (-) Red	0° to +600° +600° to +1450°	±1.5° ±.25%	±.6° ±.1%	+32° to +1112° +1112° to +2642°	±2.7° ±.25%	±1.1° ±.1%
B	Platinum 30% Rhodium(+)Black Platinum 6% Rhodium(-) Red	+870° to +1700°	±5%	±.25%	+1600° to +3090°	±.5%	±.25%
WR <sup>†</sup>	Tungsten(+) Tungsten 26% Rhenium(-)	+400° to +2300°	±1.0%	N/A	+752° to +4175°	±1.0%	N/A

<sup>†</sup>Not an ANSI Symbol.  
<sup>™</sup>Trademark, Hoskins MFG. Co.

Measuring Temp. °C	Permissible Deviations					
	1/10 DIN		Class A		Class B	
	Ω	°C	Ω	°C	Ω	°C
-200	±0.17	±0.43	±0.24	±0.55	±0.56	±1.3
-100	±0.09	±0.23	±0.14	±0.35	±0.32	±0.8
0	±0.01	±0.03	±0.06	±0.15	±0.12	±0.3
100	±0.09	±0.23	±0.13	±0.35	±0.30	±0.8
200	±0.16	±0.43	±0.20	±0.55	±0.48	±1.3
300	±0.24	±0.63	±0.27	±0.75	±0.64	±1.8
400	±0.31	±0.83	±0.33	±0.95	±0.79	±2.3
500	±0.36	±1.03	±0.38	±1.15	±0.93	±2.8
600	±0.41	±1.23	±0.43	±1.35	±1.06	±3.3
650	±0.44	±1.33	±0.46	±1.45	±1.13	±3.6
700	—	—	—	—	±1.17	±3.8
800	—	—	—	—	±1.28	±4.3
850	—	—	—	—	±1.34	±4.6

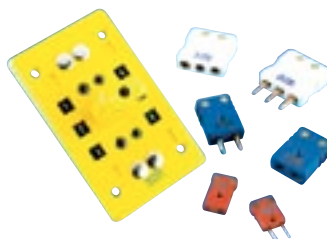
## PRODUCTS



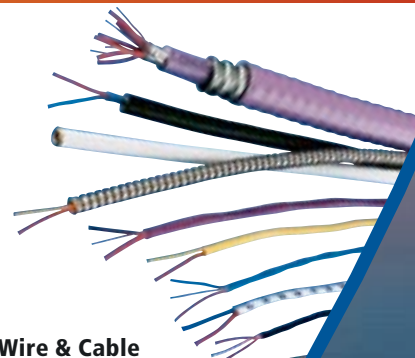
Infrared Pyrometers



Panel Meters & Controllers



Plugs, Jacks & Panels



Wire & Cable



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LOCAL REPRESENTATIVE: