



Temperature Sensors

Thermocouple

RTD'S

Pyrometer

Thermocouple Protection Tubes

cables

Services



Non Ferrous Industries



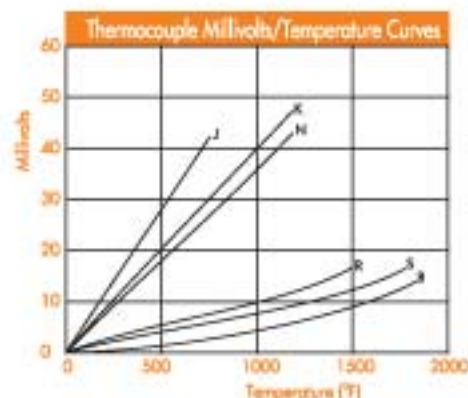
TEMPSENS
INSTRUMENTS

www.tempsensindia.com

Thermocouple Element

BASE METAL ELEMENT Tempsens offer following type of base metal thermocouples; Insulated wire, bare element and ceramic insulated elements. These element are available in K, N, J and T Type

NOBLE METAL ELEMENT Tempsens Noble Metal thermocouple offer high temperature range and greater accuracy than base metal elements. These elements are available in R, S and B Type

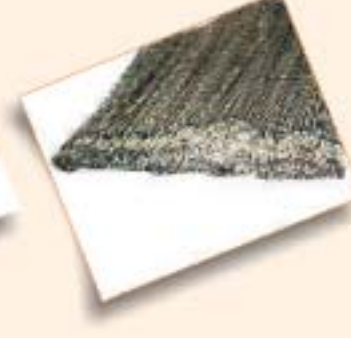


Thermocouple Type	Element	Temperature Range (°C)	Sensitivity (µV/°C)	Tolerance as per ASTM E-230	
				Standard Tolerance(°C) Whichever is greater	Special Tolerance(°C) Whichever is greater
T	Copper/Constantan	up to 350	42	± 1 or 0.75%	± 0.5 or 0.4%
J	Iron/Constantan	up to 750	55	± 2.2 or 0.75%	± 1.1 or 0.4%
E	Chromel/Constantan	up to 750	68	± 1.7 or 0.5%	± 1 or 0.4%
K or N	NiCr ₂ /NiAl OR NiCr-Si/NiSi	up to 1200	39	2.2 or 0.75%	± 1.1 or 0.4%
R or S	Pt - 13%Rh/Pt OR Pt-10%Rh/Pt	up to 1500	6-12	± 1.5 or 0.25%	± 0.6 or 0.1%
B	Pt-30% Rh/Pt-6%Rh	up to 1750	6-12	± 0.5%	± 0.25 %

Resistance Temperature Detector

Resistance thermometers may be called as RTDs (resistance temperature detectors), PRT's (platinum resistance thermometers), or SPRT's (standard platinum resistance thermometers). These thermometers operate on the principle that, electrical resistance changes in pure metal elements, relative to temperature. They are suitable for temperature rang - 100 to 400 °C

Tempsens Provide RTD's in Class A, Class B in 1/3, 1/5, 1/10 DIN Accuracy



Thermocouple Protection Tubes



Cast Iron & Enamel Coated cast Iron

Are widely used common protection tube designed to provide Excellent Physical Strength, Durability & Robustness. Useful in aluminium zinc furnaces, the charging of scrap and ignot, as well as other application requiring physical strength

The Enamel coating provides for longer life and less routine maintenance than the uncoated tube, over all better life.

Nitride Bounded Silicon Carbide

Due to Non-wetting to aluminium these tubes are best suitable for use in molten aluminium/zinc application. These tubes have Excellent thermal response properties, high level of oxidation resistance, high chemical corrosion & high abrasion resistance.



Silicon Nitride

These tube provide Excellent thermal shock resistance and excellent thermal conductivity for quick response to temperature changes with availability in wide variety of formulations. Most suitable and gives very long life for Molten Aluminium application.

Recrystallized SiC

These tubes provide high resistance to acids and alkalis.

Recommended for use in air neutral atmospheres up to 1,400 Deg C and also in high temperature. Due to its recrystallized microstructure it provide good oxidation resistance, good response time.



Tempguard

Protection tubes are constructed of a phosphate bonded refractory material developed for use in molten non-ferrous metals, specifically molten aluminium and zinc. This tube has excellent non wetting properties allowing easy slag removal. The smaller diameter provides fast thermal response to process temperature changes

LT-1

Thermocouple tubes are specially designed for immersion in molten copper, brass, zinc and lead. They are unique blend of metal and ceramic. The refractory surface of the LT-1 resist ersion by molten metal up to temperature of 1375 °C No additional coatings are required to prolong useful life.



Other Protection Tube

MATERIAL	Melting Point °C	Usable Temp. °C	Feature
Alumina 99.7% (KER 710)	1800	1500	Good capability to withstand thermal sock, Excellent resistance to corrosion.
Mulite (80 % Alumina)	1700	1500	Recommended for use in heating furnace regenerator, impervious
SS304	1430	800	Widely used as a common protection tube against heat & corrosion. Good physical strength
SS316	1430	900	Excellent resistance to corrosives, heat, acids & Alkalies
SS310	1410	1100	Higher corrosion resistance than SS304 and excellent resistance to grain boundary corrosion
HRS-448	1400	1150	Suitable for use in non-ferrous molten metal & other higher temperature application, but less mechanical strength
INCONEL-801	1410	1100	Excellent resistance to oxidizing & reducing atmospheres at high temperature. But sulphurous atmospheres should be avoided.
INCONEL-600	1400	1100	Superior oxidation resistance at higher temperature to Inconel 600, by virtue of strong bonding of metal oxide film.

Accessories

Accessories as connectors, compensating and extension cable and plug in connection head are available.

Connectors

Plug and jack compensated connectors for thermocouples.

J, K, R, S, B, T, E Types

Standard, Miniature, Panel Mounted, Simplex, Duplex

Material: Special PVC and CERAMIC



Thermocouple Cable

Thermocouple & Compensating Cables for thermocouple J, K, R, S, B, T, E Types.

Wire Gauge : 14 to 36 Gauge (AWG/SWG)

Conductor : Solid/ Multistrand

Insulation : Single and double fibre glass, Teflon Ceramic fiber, silica fibre, ss braided PVC etc.

Protection : Armored/ Unarmored



Calibration Services

Tempsens has always tried to anticipate and accommodate customer needs in temperature measurement, To this end Tempsens has commenced new "Calibration Center". The calibration center function as per ISO 17025/NABL. Calibration of contact type sensor can be made in temperature range of -38 to 1500 Deg C. Calibration of Non- contact type sensor can be made in temperature range of 50 to 1500 Deg C.

- In house calibration facility for contact and Non-contact type sensor.
- State-of-the art mobile labs provide cost effective services at your facility.
- First private company to install fixed point temperature calibration for triple point of water (TPW), Gallium (Ga), Tin (Sn), Zinc (Zn), & Aluminum Cells.

Calibration Equipments

The highly innovative calibration bath, furnaces and master sensor to fulfill most demanding calibration of temperature sensors & most precise NABL Accredited temperature calibration facility upto 1500 Deg C



	Contact Type	Non Contact Type	Stability	Temperature Range (°C)														
				-38	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	100
Calays-40/200	☑		0.01	-40														200
Calays-30/50	☑		0.1	-30														50
Calays-1.5/110	☑		0.2	-15														110
Calays300	☑		0.1	50														200
Calays500B		☑	1.0	50														500
Calays650		☑	0.1	50														650
Calays1200		☑	0.5															1200
Calays1200L		☑	0.5															1200
Calays1200B		☑	0.5															1200
Calays1500L		☑	1.0															1500
Calays1500B		☑	1.0															1500
Calays1700L		☑	2.0															1700
Calays1700B		☑	2.0															1700

☑ Bath ☑ Dry Block ☑ Black Body

Display for operaor

Always one step ahead.....Committed to success

TEMPSENS Instruments (I) Pvt. Ltd. is a part of Pyrotech group which was established by four technocrats in 1976 at Udaipur, with our first product as Thermocouples and RTDs. To enhance our customer's success we provide high quality products and services for "Temperature Solution", tailored to their needs, and delivered to meet their schedule.

We have tied up with world leaders in Temperature measuring technology for critical components, Non contact Temperature measurement and Thermal imaging solutions. We add value to these products and deliver complete engineered solutions, backed by efficient service and application support.

Today we have strong sales and service network operating from important locations of India and Abroad. Continuing our constant endeavor of delivering solutions for temperature technology to our large base of over two thousand satisfied customers.

- 35 years of experience.
- Large Customer base.
- Executed Major Projects in India and Abroad.
- Production Expertise-Specialised Team & Facility



TOTAL SOLUTION TO TEMPERATURE SENSOR TECHNOLOGY



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Our Other Websites :

www.thermowellworld.com

www.compensatingcables.net

www.glassthermocouples.com

www.temperaturecalibration.in