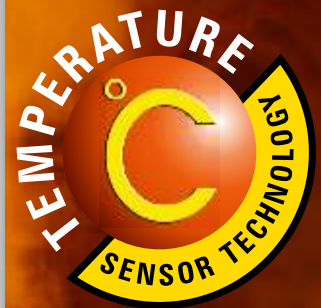




Temperature Sensors



Thermocouples

RTDs

Compensating Cables

Non Contact Pyrometers

Line Scanner

Furnace Camera

Thermal Imager

Thermography Survey

Temperature Calibration
Equipment

Calibration Services



steel industry



TEMPSENS
INSTRUMENTS

www.tempsensindia.com

STOVE DOME THERMOCOUPLE

A Blast furnace consist of four major sections

- > Blast furnace
- > Charging unit
- > Gas cleaning equipment
- > Hot blast stove

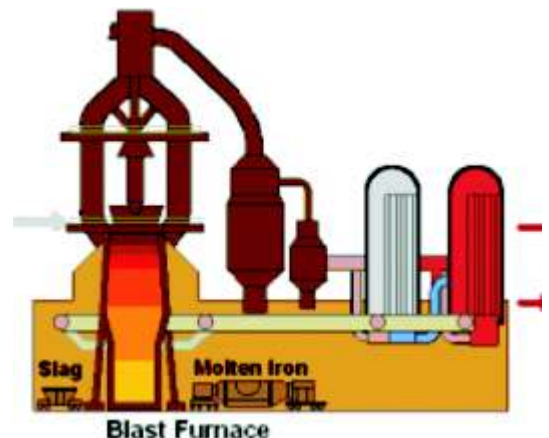
Stove dome / hot blast stove is one of the most critical section in the steel industry. The hot blast has 3 stage operation, either on gas, on blast or bottled up (ready and waiting to be put on blast).

Temperature is one of the major parameter for controlling of this critical process. The temperature inside the blast furnace is about 1100°C and high pressure. The high temperature and high pressure makes the assembly very critical.



The critical components of Stove dome thermocouple are :

- **Element** : 'S' Type / 'R' type , recommended 0.50 or 0.45mm, in some cases 'N' type thermocouple can be used for cost saving where the temperature is max 1100°C.
- **Inner protection tube** : 99.7% Recrystallised Allumina
- **Outer tube (Options):**
 - **Recrystallised Allumina 99.7%** - High wall thickness recommended
 - **Recrystallised Silicon Carbide** – Better thermal shock resistant
 - **Inconel 600** – Better mechanical strength, temperature limited to 1150°C
 - **Inconel 600 with ceramic coating** – good mechanical strength and good abrasion resistance, temperature limited to 1100°C
- **Glass Sealing** : Glass sealing provides a pressure boundry, even if the bottom of the thermocouple breaks there shall be no leakage from the thermocouple head
- **Holding tube** : SS310
- **Flange** : Welded (recommended) or threaded
- **Head** : Die cast aluminium, Ingress protection IP67



COKE OVEN THERMOCOUPLE

Coke is the most important raw material fed into the blast furnace in terms of its effect on blast furnace operation and hot metal quality. The coke making process involves carbonization of coal to high temperatures (1100°C) in an oxygen deficient atmosphere in order to concentrate the carbon. The commercial coke making process can be broken down into two categories: a) By-product Coke making and b) Non-Recovery/Heat Recovery Coke making.

The critical components of Coke oven thermocouple are :

- **Element** : 'S' Type / 'R' type , recommended 0.50 or 0.45mm.
- **Double Protection tube** : 99.7% Recrystallised Allumina with high wall thickness outer and inner tube.
- **Holding tube** : SS310, SS316
- **Head** : Die cast aluminium, Ingress protection IP67



HEARTH REFRACTORY THERMOCOUPLE

Refractory thermocouple (BF thermocouple)

Refractory thermocouples are very important for the startup phase and running phase of the refractory in the steel plants. These are normally very long length thermocouples (upto 40 meters) in mineral insulated construction.

- Thermocouple type : K, Mineral insulated Metal sheathed
- Outer sheath : SS316/ SS310/ Inconel 600
- Sheath Dia : 3mm / 4.5mm / 6mm / 8mm
- Length : As per requirement
- Termination : Aluminium Head or Teflon flying leads

Thermocouples of various lengths can be grouped together in a single flange, for a particular area of the furnace.



DRI KILN THERMOCOUPLES

Quick Response Thermocouple

Fast response thermocouple normally K type with miniature or Standard connector for DRI kiln application and normally used with a hand held indicator for checking immediate temperature.

- Thermocouple type K, Mineral insulated
- Outer sheath : SS316/ SS310 / Inconel 600
- Sheath Dia : 3mm / 4.5mm / 6mm / 8mm
- Length : 600, 750, 1000mm (As per req)
- Termination : miniature or standard connectors

in dia meter 3mm / 4.5mm or 6mm with SS316 / Inconel sheathing.



GENERAL THERMOCOUPLE & RTD

High accurate Thermocouples for variety of application

BASE METAL THERMOCOUPLES



- | | |
|-------------------|---|
| Type | : J, K, T, E, N |
| Element size (MI) | : 1, 1.5, 3, 4.5, 6, 8 (mm) |
| (Non-MI) | : 1.2, 1.6, 2, 2.5, 3.2 (mm) |
| Protection sheath | : Seamless SS 316, SS 310, HRS 446, INCONEL, Nickel, Monel, Hastalloy, Titanium, Ceramic, Silicon carbide etc |
| Configuration | : Simplex / Duplex / Multipoints |

SPECIAL

- Coated Thermocouples
- Thermocouples with IBR Approved Thermowells
- Drilled Bar stock



MINERAL INSULATED RTDs



- | | |
|-------------------|--|
| Type | : Pt 100 , 200 , 500 , 1000
Copper 50, 53 etc. |
| Element | : Wire wound ceramic encapsulated
Wire wound Glass encapsulated
Thin film ceramic encapsulated |
| Connection | : 2 , 3 , 4 wire |
| Accuracy | : Class A, B, 1/2 , 1/3 , 1/5 DIN |
| Protection sheath | : SS 304, SS 316, SS 310, INCONEL, Hastalloy, Monel etc. |

SPECIAL

- Slide shoe RTDs
- Vibration proof RTDs for DG sets
- Bearing & Winding temperature RTDs
- Handheld & Probe in various designs
- RTDs with IBR approved Thermowells.



THERMOWELLS AND PROTECTION TUBES

A wide choice of refractory and Stainless Steel protective sheathing is available to suit for various applications.

METAL



Material	: SS304, SS 316, SS 316L, SS 321 : HRS 446, INCONEL 600/800 : Hastalloy, Monel, Alloy 20 : Titanium etc
Type	: Drilled barstock, Fabricated
Construction	: Tapered, Straight
Process connection	: Screwed, Flanged

CERAMICS



Material	: Recrystallised Alumina 99.7%
Type	: KER 710 (C-799)
Length	: 350, 530, 600, 650, 740, 900, 1030, 1200 1430 mm
OD x ID	: 6x4, 8x5, 10x6, 12x8, 15x10, 20x15 24x18mm etc.
Insulating Tubes	: 2/4/6 Holes.
OD	: 2.8, 3.5, 5.5, 8.5, etc.

SPECIAL



Metal Thermowells with Tungsten carbide / Ceramic / PTFE / PVDF / PFA coatings
Solid sintered tungsten carbide
Silicon carbide
Platinum thimble
Tantalum, Titanium, Nickel cladding
Graphite Thermowells

CABLE

Compensating cables for thermocouples J,K,T,E,N,R,S,B Types.


Wire Gauge	: 14 to 36 gauge (AWG/SWG)
Conductor	: Solid / Multistrand
Insulation	: Single and double fibre glass, teflon, ceramic fibre, silica fibre, SS braided, PVC etc.
Protection	: Armored / Unarmored




NON CONTACT PYROMETER



PORTABLE

				
Instrument	IN14/ IN15	IGA 15 plus	IS 8 plus	IS 8 GS plus
Temperature ranges (Between.....and.....)	-32....600°C -32....900°C	250....1800°C	600....2500°C	1000....2000°C
Spectral range	8....14 μm	1.45....1.8 μm	0.6....1.1μm	0.55 μm
Field of view (minimum spot size in mm)	10:1 15:1 30:1 50:1(min 2.2)	200:1(min 1.25)	Min 300 : 1(min 0.8)	Min 300 : 1(min 0.8)
Response time t ₉₀	300 ms 150 ms	20 ms	1 ms	500 ms
Output	-/RS232 or RS232 and analog output	RS232 and Analog output	RS232	RS232

ONLINE

				
Instrument	IN 510,IN 510-N IN 520,IN 520-N	IS/IGA 200	IS/IGA 5	IS 50-LO PLUS IGA 50-LO PLUS
Temperature ranges (Between.....and.....)	-40....700°C	650...2500°C 300...1800°C	650...3000°C 250...3000°C	550....3300°C 300....2500°C
Spectral range	8....14 μm	0.8...1.1μm 1.45....1.8 μm	0.8...1.1 μm 1.45...1.8 μm	0.8....1.1μm 1.45....1.8μm
Field of view (minimum spot size ? in mm)	2:1 or 10:1	3 fixed optics Min 200: 1 (min 5) Min 100: 1 (min 6)	Optics N Min 160 : 1 (min 0.5) Optics F Min 200 : 1 (min 1)	Optical head I Min 100:1 (min1.2) Optical head II min 200:1 (min 0.45)
Response time t ₉₀	180 ms adjustable up to 30 s	20 ms adjustable up to 10 s	?2 ms adjustable up to 10 s	< 1 ms Adjustable up to 10 s
Output	0/4...20 mA, 0...5 V, thermoc. J / k, RS232/ RS485 (switchable)	4...20 mA	0/4... 20 mA, RS232 or RS485, PID-controller (option)	0/4...20 mA, RS232/ RS485 (switchable)

NON CONTACT PYROMETER



TWO COLOUR (RATIO)

Instrument	ISQ 5-LO	ISR/IGAR 12 -LO	ISR 50-LO	ISQ 5
Temperature ranges (Between.....and....)	700...2500°C	600...3300°C 300...2200°C	700...3000°C	600...3000°C
Spectral range	Channel 1: 0.9 μm Channel 2: 1.05 μm	0.8...1.1 μm 1.28...1.7 μm	Channel 1: 0.9 μm Channel 2: 1.05 μm	Channel 1: 0.9 μm Channel 2: 1.05 μm
Field of view (minimum spot size ? in mm)	Optical head I Min 100 : 1 (min1.2) optical head II (focusable) Min 200:1(min 0.45)	Optical head I Min 100 : 1 (min1.2) optical head II (focusable) Min 200:1(min 0.45)	Optical head I Min 100 : 1 (min1.2) optical head II (focusable) Min 200:1(min 0.45)	Min 200 : 1 (min1.5)
Response time t ₉₀	?10ms adjustable up to 10 s	2 ms ¹⁾	< 10 ms adjustable up to 10 s	< 10ms adjustable up to 10 s
Output	0/4....20mA, RS232 or RS485 PID-controller (option)	0/4...20mA, RS232 or RS485 (switchable)	0/4...20 mA, RS232 or RS485 (switchable)	0/4...20 mA, RS232 or RS485

SPECIAL ONLINE PYROMETER



IS/IGA 12 with scanner

Fully digital, highly accurate, fast pyrometer with built in scanner, digital display, view finder and optional targeting light, very small spot sizes, variable or fixed optics, analog output, digital interface maximum value storage. For small objects, oscillating wire, moving objects

Temperature ranges (Between.....and....)	550...2500°C 300...1800°C
Spectral range	0.7...1.1 μm 1.45...1.8 μm
Field of view (minimum spot size in mm)	6 fixed optics Min 900:1 (min 0.1) 3 focusable optics min 800:1 (min 0.4)
Response time t ⁹⁰	1 ms adjustable up to 10 s
Output	0/4...20mA, RS232 & RS485 (switchable)

PORTABLE TWO COLOUR PYROMETER

Typical Applications

Hot and molten metals, foundries, forging, annealing, induction heating etc.

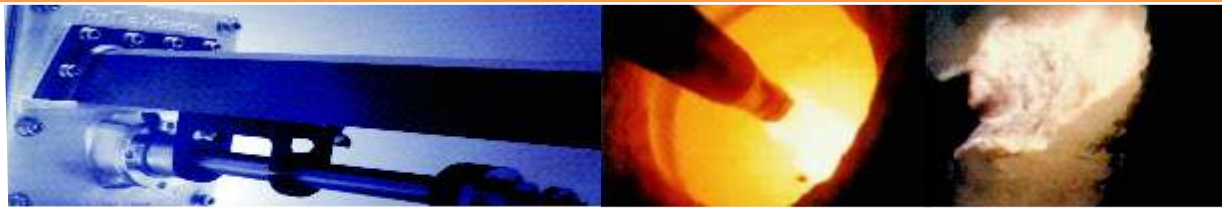
Features

- Two colour technique
- Through-lens sighting
- Sharp focusing on targets
- 0.25% accuracy
- 10 different spectral responses
- Minimum measurable target diameter 0.65mm (0.025") (M90V with close focus lens set)
- Temperature display in eyepiece and rear window
- Outputs for remote recording, printing
- Built-in data logging



Model	Temperature Range °C	Spectral Response μm	Field of View	Accuracy
M90V	800 °C to 3000 °C	0.65 (same as optical pyrometers)	300:1	0.25% of reading
M90R-1	700 °C to 2000 °C	2-colour near 0.9 (μm)	60:1	0.70% of reading
M90R-2	900 °C to 3000 °C		180:1	





STRAIGHT VIEW (RNV-103, 203, 303)

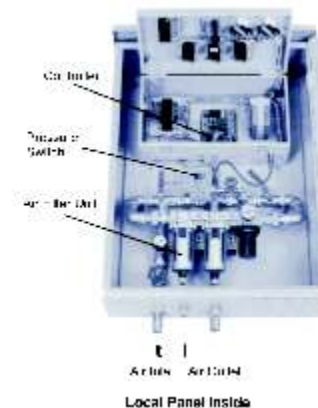
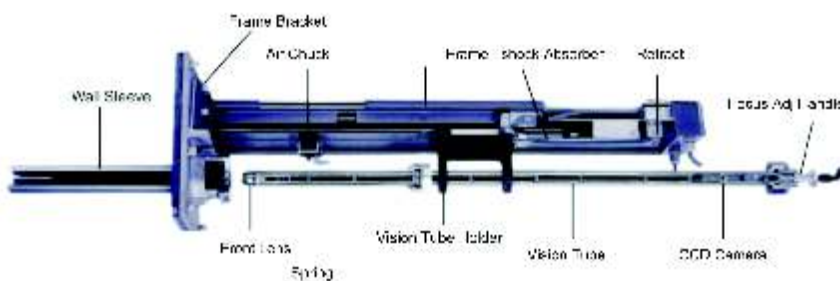
As a standard model of Ro-Ne Vision, it is used for monitoring the front image of the furnace interior and you can select various angles and lengths of the vision tube and this model is suitable for steel reheating furnace, kilns or Power generations etc.

VISION TUBE & WALL SLEEVE

Image Sensor	1 /4" interline transfer CCD
H. Resolution	More than 480 TV Lines
Video Output	Composite Video ,IVp_p ,75 NTSC/PAL
Power Source	DC 12V ± 10%
Current Consumption	Max.200mA
Angle of View	Horizontal :89°,Vertical:68 ,Digonal:105°
Length	VT-1180:1180mm/VT 980:980mm
Wall Sleeve Length	350/500/600 (mm)
Wall Sleeve Diameter	Outer diameter :58mm Inner diameter :42mm

RETRACT CONTROLLER

Size(mm)	440(W) x225(H)x 160(D)
Power Source for Main	AC 220V
Power Source for Camera	DC 12V
Solenoid Power for Retract	DC24V
Locking Device	Air Chuck



THERMAL VIEW (RNV-503)

With the NIR camera and computer system. This product features an average atmosphere temperature display within any 20-point areas, and date recording/control function in additional to viewing the furnace interior. Each area is adjustable.

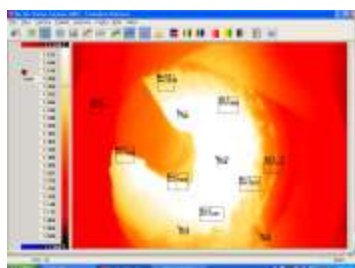
Thermal view is designed to process images by blocking visible images while only receiving infrared image, so it receives clear pictures, and using the software, it is possible to measure the regional temperature by coloring and different shades of infrared image source.

VISION TUBE

Image Sensor	1 /2" interline transfer CCD
H. Resolution	More than 600 TV Lines
Power Source	DC 12V
Current Consumption	Max.200mA
Angle of View	Horizontal:89°- Vertical:68°.Digonal: 107°
Length	VT-1100:1100mm

TEMPERATURE MEASUREMENT SYSTEM

CPU	Pentium IV 2.4 GHz
Hard Disk	100GB
RAM	512MB
Monitor	17"
OS	Windows 2000 or XP
Power Source	AC 100 or 220 V
Temperature Range	600 ~ 2000 °C
Measurement Frequency	Min. 1 Sec.
No. of Measurement Place	Max. of 32 places
Measurement Errors	±1% (Standard : black body)
Temperature Display	Celsius or Fahrenheit
Optional	4-20 mA output



PORTABLE THERMAL IMAGERS & THERMOGRAPHY SERVICES

Affordable portable thermal imagers for predictive and preventive maintenance Thermal Imaging is technique for creating an image of scene based on the invisible thermal radiation emitted from an object. Using this technology, thermal images of faults in mechanical and electrical application can be easily located, before occurrence.

■ THERMAL IMAGERS - For Predictive Preventive Maintenance

Specification	Model IRI 4010	Model IRI 4030
Field of View	20° x 15°	20° x 15°
Focus	Manual	Manual
Thermal Sensitivity	150mK @ 25° C	150mK @ 25° C
Detector	160 x 120 pixels	160 x 120 pixels
Image Storage	Up to 1000 Images	Up to 1000 Images
Display	3½" colour LCD 4 colour palettes	3½" colour LCD 4 colour palettes
Temp. Range	-10°C to + 250°C	200°C to + 900°C
Emissivity	0.2 to 1.0 adjustable	0.2 to 1.0 adjustable
Accuracy	±2% of reading or ± 2°C	±2% of reading or ± 2°C
Interfaces	USB type B	USB type B



IRISYS[®]_{UK}

LINE SCANNERS & ONLINE THERMAL IMAGERS

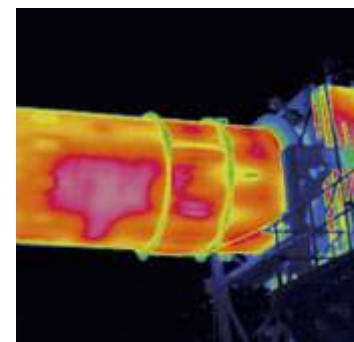
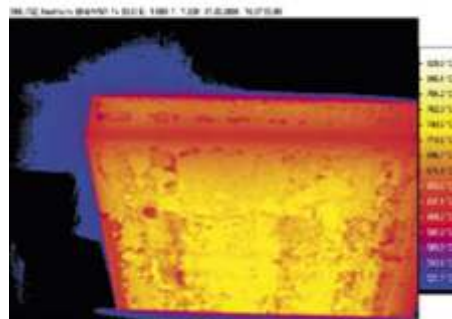
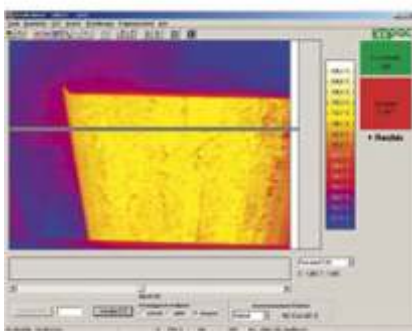
PYROLINE AND PREVIEW CAMERAS

High speed infrared line cameras provide instant non-contact measurement of temperature distribution. Pyroline scanners are useful for temperature profiling of moving objects & processes. For general application scanners at 8...14 µm and for metallic surface scanner at 1.4...1.8 µm.

impac[®]
Germany



Application Picture



CALIBRATION BATH, MASTER SENSOR, NABL SERVICE

HIGHLY STABLE TEMPERATURE CALIBRATION BATH -30...1500°C

BATH

Model	Range	Stability	Medium
Polyscience 9702	-40 ... +200°C	±0.01°C	Liquid Bath
CALsys -30/50	-30 ... +50°C	±0.1°C	Liquid Bath
CALsys 300	50 ... +250°C	±0.1°C	Liquid Bath

FURNACE

CALsys 650	50 ... +650°C	±0.3°C	Dry Block
CALsys 1100	300 ... +1100°C	±0.5°C	Dry Block
CALsys 1200	250 ... +1200°C	±0.5°C	Dry Block
CALsys 1500	400 ... +1500°C	±1°C	Dry Block
CALsys 1700	500 ... +1700°C	±1°C	Dry Block

BLACK BODY SOURCES

CALsys 500 BB	Amb ... +500°C	±0.5°C	Black Body
CALsys 1200 BB	400 ... +1200°C	±1°C	Black Body
CALsys 1500 BB	400 ... +1500°C	±1°C	Black Body
CALsys 1700 BB	500 ... +1700°C	±1°C	Black Body



HIGHLY ACCURATE MASTER SENSORS

▶ RTD - Pt 100

Accuracy : 1/10, 1/5, 1/3, 1/2 DIN, Class A
 Sheath Material : SS316 / Inconel

▶ Thermocouple

Accuracy : K/N/R/S
 Special, Class 1,
 with Cold junction compensation
 Sheath Material : Inconel / Ceramic (KER 710-C 799)
 Cold Junction Probe : J/ K/ E/ N/ R/ S/ B

for Thermocouple Type
 Dual Probe Possible in
 one Housing



NABL ACCREDITED CALIBRATION CAPABILITIES

IN HOUSE

S.#	Parameter Measured	Range	B.M.C.
1	Contact type temp sensors Thermocouples, RTDs, Digital Temp. Indicator, Thermometers	-38 250 °C	±0.1°C
		250 500 °C	±0.14°C
		500 1000 °C	±1.3°C
		1000 1200 °C	±2.1°C
		1200 1500 °C	±4.2°C
2	Non-contact Infrared pyrometers	50 ... 250°C	±0.4°C
		250 ... 400°C	±0.9°C
		400 ... 500°C	±2.6°C
		500...800°C	±3.5°C
		800...1000°C	±4.1°C
		1000...1200°C	±4.1°C
3	Contact type temp sensors (For Calibration at fixed point cells) * TPW * Ga * Sn * Zn * AL	0.01°C	±0.015°C
		29.7646°C	±0.029°C
		231.928°C	±0.039°C
		419.527°C	±0.033°C
		660.323°C	±0.036°C

ON SITE

S.#	Parameter Measured	Range	B.M.C.
1	Contact type temp sensors Thermocouples, RTDs, Digital Temp. Indicator, Thermometers	-25...140°C	0.07°C
		140...500°C	0.14°C
		500...1000°C	1.42°C
		1000...1200°C	2.2°C
		2	Non-contact Infrared pyrometers
250 ... 400°C	0.9°C		
400 ... 500°C	3.3°C		
500...800°C	3.5°C		
800...1000°C	4.1°C		
1000...1200°C	4.1°C		



TECHNICAL REFERENCES

THERMOCOUPLES REFERENCE DATA (ITS 90) mV v/s Temperature

TYPE		"T" Cu-CuNi	"J" Fe-CuNi	"K" NiCr-NiAl	"N" NiCrSi-NiSi	"S" PtRh10%-Pt	"R" PtRh13%-Pt	"B" PtRh30%-PtRh6%	"E" NiCr-CuNi
Calibration		IS 2056/ASTME 230	IS 2057/ASTME 230	IS 2054/ASTME 230	ASTME 230	IS 2055/ASTME 230	IS 2055	IS 6720	ASTME 230
Tolerances	Standard	± 1°C or ± 0.75%	± 2.2°C or ± 0.75%	± 2.2°C or ± 0.75%	± 2.2°C or ± 0.75%	± 1.5°C or ± 0.25%	± 1.5°C or ± 0.25%	± 0.5%	± 1.7°C or ± 0.5%
	Special	± 0.5°C or ± 0.4%	± 1.1°C or ± 0.4%	± 1.1°C or ± 0.4%	± 1.1°C or ± 0.4%	± 0.6°C or ± 0.1%	± 0.6°C or ± 0.1%	Over 800°C	± 1°C or ± 0.4%
TEMPERATURE °C	-100	-3,379	-4,633	-3,554	-2,407	-	-	-	-5,237
	0	0	0	0	0	0	0	0	0
	100	4,279	5,269	4,096	2,774	0,646	0,647	0,033	6,319
	200	9,288	10,799	8,138	5,913	1,441	1,469	0,178	13,421
	300	14,862	16,327	12,209	9,341	2,323	2,401	0,431	21,036
	400	20,872	21,848	16,397	12,974	3,259	3,408	0,787	28,946
	500	-	27,393	20,644	16,748	4,233	4,471	1,242	37,005
	600	-	33,102	24,905	20,613	5,239	5,583	1,792	45,093
	700	-	39,132	29,129	24,527	6,275	6,743	2,431	53,112
	800	-	45,494	33,275	28,455	7,345	7,950	3,154	61,017
	900	-	-	37,326	32,371	8,449	9,205	3,957	68,787
	1000	-	-	41,276	36,256	9,587	10,506	4,834	76,373
	1100	-	-	45,119	40,087	10,757	11,850	5,780	-
	1200	-	-	48,838	43,846	11,951	13,228	6,786	-
	1250	-	-	50,644	45,694	12,554	13,926	7,311	-
	1300	-	-	52,410	47,513	13,159	14,629	7,848	-
	1400	-	-	-	-	14,373	16,040	8,956	-
	1500	-	-	-	-	15,582	17,451	10,099	-
1600	-	-	-	-	-	-	11,263	-	
1700	-	-	-	-	-	-	12,433	-	

SHEATH MATERIALS

SHEATH	MELTING POINT °C	USABLE TEMP. °C	CHARACTERISTICS
SS-304	1430	800	High resistance to heat and corrosion
SS-316	1430	900	Excellent resistance to Heat, Acids & Alkalies
SS-321	1400	900	Excellent resistance to corrosion
SS-310	1410	1100	Good oxidation resistance at low temperature and sulphur atmosphere
HRS-446	1400	1150	Excellent oxidation resistance at elevated temperature and sulphur atmosphere
Inconel 600/800	1400	1100	Excellent oxidation resistance (do not use in sulphur atmospheres)
High Alumina 610		1500	General purpose
Sintered Alumina 710/C-799	1800	1500	Excellent thermal, mechanical, electrical and corrosion resistant.
Recrystallised Silicon Carbide	1850	1500	Outstanding resistance to thermal shock, good mechanical strength.

COLOUR CODE OF COMPENSATING CABLES & THERMOCOUPLES

Type	BRITISH BS 1843	AMERICAN ANS/MC96.1	GERMAN DIN 15714	INDIAN IS : 8794	JAPANESE JIS C 1610-1981
K					
T					
J					
E					
R					
S					
B					
N					

Other sheath materials like Titanium, Molybdenum, Graphite, Aluminum etc. are available against specific requirement

TOLERANCE VALUES OF RTD PT-100 (IEC 751)

TEMP (°C)	BASIC VALUES		TOLERANCE			
			CLASS A		CLASS B	
		(± °C)	(± Ω)	(± °C)	(± Ω)	
-200	18.52	0.55	0.24	1.3	0.56	
-100	60.26	0.35	0.14	0.8	0.32	
0	100	0.15	0.06	0.3	0.12	
100	138.51	0.35	0.13	0.8	0.30	
200	175.86	0.55	0.20	1.3	0.48	
300	212.05	0.75	0.27	1.8	0.64	
400	247.09	0.95	0.33	2.3	0.79	
500	280.98	1.15	0.38	2.8	0.93	
600	313.71	1.35	0.43	3.3	1.06	
700	345.28	-	-	3.8	1.17	
800	375.70	-	-	4.3	1.28	

EMISSIVITY CHART

	EMI in %		EMI in %
"Black body"	100	Oil Paints	85..95
Human skin	98	Asphalt	85
Black matter	95	Textiles	75..95
Carbon black	95	Graphite	75..92
Wood	80..92	Cement	90
Masonry	85..95	Water	95
Chamotte	85..95	Glass	80
Rubber	85..95	Quartz	80
Porcelain	85..95	Steel (Oxidized)	60..80
Ceramics	85..95	Steel (Blank)	10..30
Paper	85..95	Aluminium (Blank)	2..15

Always one step ahead....Committed to success

TEMSENS 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. Continuing our constant endeavor of delivering solutions for temperature technology to our large base of over two thousand satisfied customers.

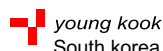
- 35 years of experience
- Large Customer base
- Execute Major Projects of Steel industries in India and Abroad
- Production Expertise- Specialised Team& Facility for Steel T/C's, Pyrometer
- Thermocouple, Pyrometers, Kiln Shell Scanner Camera.
- NABL Accredited Calibration Laboratory upto 1500 °C
- Fixed Point Temperature Calibration - TPW, Ga, Sn, Zn & AL



TOTAL SOLUTION TO TEMPERATURE SENSOR TECHNOLOGY



OUR ASSOCIATES



TEMSENS



TEMSENS INSTRUMENTS (I) PVT. LTD.
 B-188 A, Road No.5, M.I.A., UDAIPUR-313003 (Rajasthan) INDIA
 Ph. : +91-294-3057700 Fax : +91-294-2492447, 3057750
 Email : info@tempsensindia.com, Web : www.tempsensindia.com

Our Offices

Baroda	: 09327157887	Bangalore	: 09844061752
Delhi	: 09312872090	Jamshedpur	: 09431182353
Raipur	: 09329026944	Mumbai	: 09322676597
Hyderabad	: 09390919399	Chennai	: 09382990001