

# Temperature Sensors



# glass industry

Thermocouples

Glass Level Probes

Ceramic Tubes

Non Contact Pyrometers

RTDs

Quick Release Connectors

Compensating Cables



**TEMPSENS**  
INSTRUMENTS

[www.tempsens.com](http://www.tempsens.com)



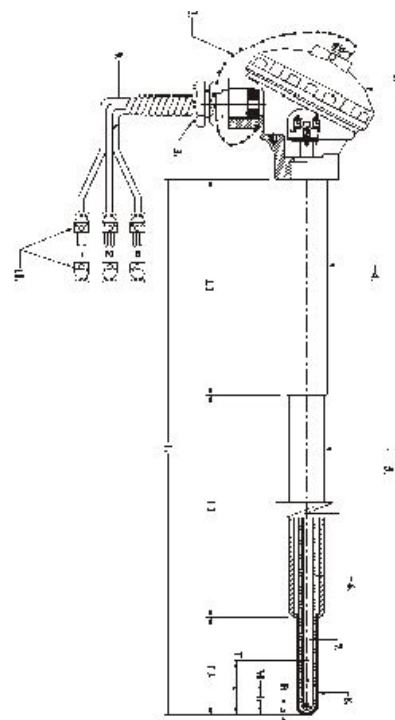


## Tri level thermocouples for Fore Hearth and Distributor



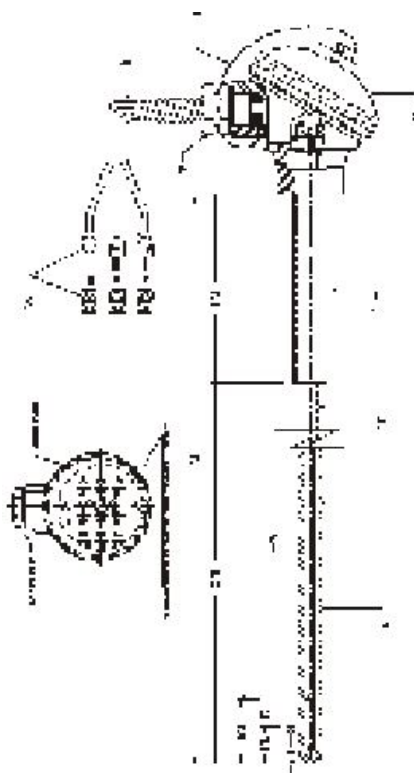
Type	TI/GL/01
Measuring Range	100 to 1600 Deg C
Sensor Type	"R" / "S" / "B"
	At three levels at B-bottom, M - middle, T- Top
Protection sheathing	Recrystallised alumina KER 710 (C-799) tube with hole at one end. Special DPH/ODS platinum thimble
Application	Fore hearth & distributor

S.#	Description
1.	SS/Aluminum Connection head IP-67
2.	SS Chain
3.	3/4" ET cable gland
4.	Holding tube 1/2" SCH.40 (Inconel-600)
5.	KER 710 Tube OD 17 x ID 13 mm with hole at once end.
6.	Inner tube 8 mm KER-710
7.	6 bore, KER-710 insulating tube
8.	ODS/DPH Pt. Thimble 0.35mm Thick. OD 9.5mm covered over KER 710 Tube
9.	Ceramic Fibre insulated compensating cable 6/3 Mtrs long with overall ceramic fiber sleeve
10.	Quick Release connector "R" / "S" / "B" type

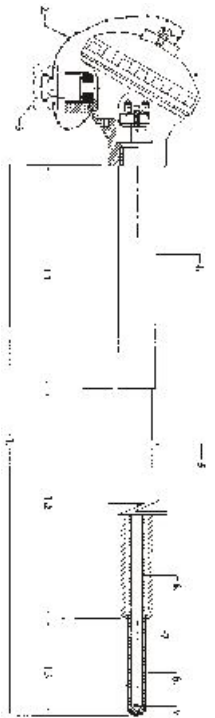


Type	TI/GL/02
Measuring Range	100 to 1600 Deg C
Sensor Type	"R" / "S" / "B" Type
	At three levels at B - bottom, M - middle, T- Top
Protection sheathing	Special DPH / ODS platinum thimble
Application	Fore hearth & distributor

S.#	Description
1.	SS/Aluminum Connection head IP-67
2.	SS Chain
3.	3/4" ET cable gland
4.	Holding tube 1/2" SCH.40 (Inconel-600)
5.	KER 710 Tube (C-799) Tube OD 9 x ID 6 mm
6.	6 bore, KER-710 insulating tube
7.	ODS/DPH Pt. Thimble 0.35mm Thick. OD 10.7mm covered over KER 710 Tube
8.	Ceramic Fibre insulated compensating cable 6/3 Mtrs long with overall ceramic fiber sleeve
9.	Quick Release connector "R" / "S" / "B" type



## Simplex thermocouples for Fore Hearth/Distributor

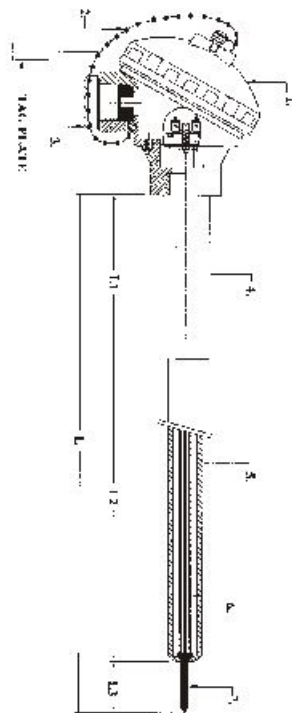


Type	TI/GL/04
Measuring Range	100 to 1600 Deg C
Sensor Type	"R" / "S" / "B"
Protection sheathing	Recrystallised alumina KER 710 (C-799) tube with hole at one end. Special DPH/ODS platinum thimble
Application	Fore hearth & distributor

S.#	Description
1.	SS/Aluminum Connection head IP-67
2.	SS Chain
3.	3/4" ET cable gland
4.	Holding tube 1/2" SCH.40 (Inconel-600)
5.	Outer protection tube KER 710 (C-799) OD 17 x ID 13 mm with 9.5 mm hole at one end.
6.	Inner tube KER-710 (C-799) OD 8 x ID 5 mm
7.	Insulating tube 2 bore KER-710 (C-799)
8.	ODS/DPH Pt. Thimble 0.35mm Thick. OD 9mm covered over inner KER 710 (C-799) Tube
9.	Pt-RhPt Thermocouple Element.



## Glass Level Probe for Level Control



Type	TI/GL/03
Measuring Range	Glass Contact
Sensor Type	Pt. Electrode
Protection sheathing	Recrystallised Alumina KER-710 (C-799) tube with hole at one end. With Pt. alloy tip for glass level sensing.
Application	Fore hearth / Distributor

S.#	Description
1.	SS/Aluminum Connection head IP-67
2.	SS Chain
3.	3/4" ET Cable Gland
4.	Holding Tube
5.	KER 710 (C-799) Tube 12 x 8 mm / 15 x 10mm / 20 x 15mm 3.5 Dia hold at close end
6.	Inner Tube OD 5 mm x ID 3 mm KER 710 (C-799)
7.	Pt. Alloy electrode.

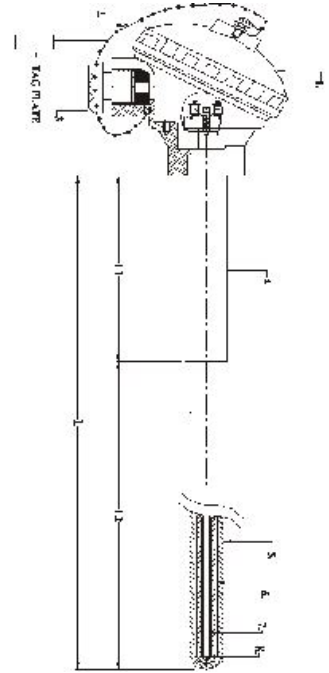


## Thermocouple for Furnace Crown, Bottom, Regenerators



Type	TI/GL/05
Measuring Range	100 to 1600 Deg C
Sensor Type	"R" / "S" / "B" Type
Protection sheathing	Recrystallised alumina KER 710 (C-799) tube with hole at one end. Special DPH/ODS platinum thimble
Application	Furnace Crown, Furnace Bottom, T/c Pockets, Regenerators, Crown base.

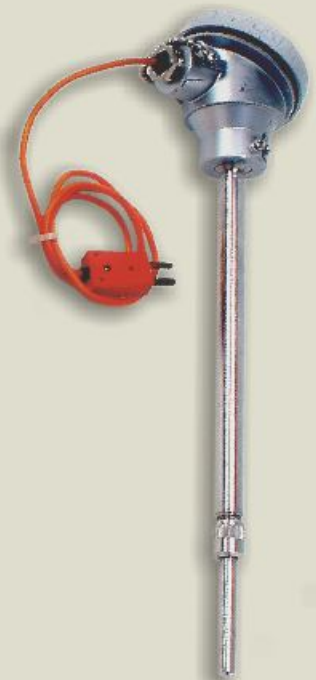
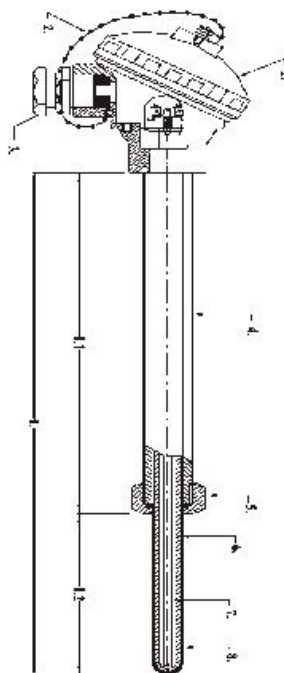
S.#	Description
1.	SS/Aluminium Connection head IP-67
2.	SS Chain
3.	Cable gland 3/4" ET
4.	Holding tube ODxID - 32 x 26mm (Inconel-600)
5.	Outer tube KER 710 (C-799) OD 24 x ID 18mm
6.	Inner tube ODxID-15x10mm KER-710 (C-799)
7.	Insulating tube 8.5mm dia.
8.	PtRh-Pt element.



## Spout Thermocouples

Type	TI/GL/06
Measuring Range	100 to 1600 Deg C
Sensor Type	"R" / "B" / "S" Type
Protection sheathing	Recrystallised Alumina KER 710 (C-799) tube with hole at one end. Special DPH / ODS Platinum thimble
Application	Spout Bowl

S.#	Description
1.	SS/Aluminum Connection head IP-67
2.	SS Chain
3.	3/4" ET Cable Gland
4.	Extension tube, OD 15mm, 3/8" BSP (M)
5.	Process Connection
6.	Outer protection tube OD 8mm x ID 5mm
7.	Insulating tube OD 3.5mm
8.	Thimble, OD 9mm x 0.5mm Thick of ODS / DPH Pt.







**IS50 LO/GL**  
600...1800°C

## Glass Melting furnaces, working end, feeder & Brick work :

The pyrometer IS 50-LO/GL is specially designed for the glass industry. It is used for the temperature measurement of glass in tank, working end, fore hearth and feeder.

Additional applications are the measurement of brickworks in regenerator and tank.



**ISQ5**  
600...3000°C

## Glass Gob temperature measurement :

The pyrometers needed for this application should be able to measure inside the gob. This is necessary because the surface temperature of the glass is very easily influenced by ambient conditions IMPAC offers digital two colour pyrometer Infratherm ISQ 5 with stainless steel water cooling jacket for glass gob temperature measurement.



**IGA5**  
250...2000°C

## Glass mould temperature measurement :

Measuring the temperature of glass moulds requires a very rapid operation because the moulds open and close at high speed. A pyrometer with a very short response time is necessary and as this is a measurement of a metallic surface, a pyrometer with spectral response in the short wavelengths is needed. IMPAC offers IGA 5, fast pyrometer for this application



**IN5/5**  
100...1300°C  
400...2500°C

## Glass Surface, Lighting Industries :

The pyrometer for surface temperature measurement has proved to be excellent for use on float glass production lines. IMPAC offers the Infratherm IN 5/5 and IN 200 / 5 compact digital measuring pyrometers for this application. The surface temperature is a decisive parameter for annealing and bending flat glass, shaping with gas burners or producing lamps., Here again IN 5/5 plus is suitable for such applications.



**IN200/5**  
100...1200°C

## Portables :



**IGA/IS 8+**  
300...1300°C  
600...1600°C  
900...2500°C

**IS/IGA 8+ :** Rugged pyrometer with focusable optic, The Infratherm IS 8 plus and IGA 8 plus portable measuring instruments are suitable for measuring glass mould, glass feeder and glass tank temperatures



**IN15 +**  
-32...900°C

**IN 15+ :** For measuring temperatures in cooling paths and for coating processes, as well as for determining the temperature of hot spots on the walls of the furnace

**IN15/5+**  
150...1800°C

**IN 15/5+ :** For all glass surface measurements from 150°C up to 1800°C.

## Thermocouple Accessories



Ceramic Tubes KER 710 (C-799) & Insulating Rods



Quick Release Connectors for "R"/'S'/'B'/'K" Type Thermocouple



Compensating Cable for "R"/'S'/'B'/'K" Type Thermocouple

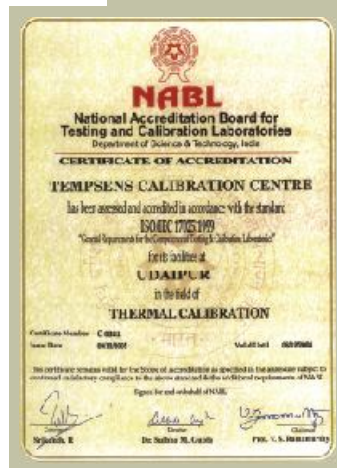
Always one step ahead....Committed to success

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. We have focused ourselves for the supply of high quality Temperature sensors, related products accessories; services built to specific customer needs.

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.

- ◆ 30 years of experience
- ◆ Large customer base
- ◆ Executed Major Projects of Glass Furnace Re-Building in India and Abroad
- ◆ Production Expertise - Specialised Team & Facility for Glass Thermocouples
- ◆ NABL Accredited Calibration Laboratory up to 1500°C



## TOTAL SOLUTION TO TEMPERATURE SENSOR TECHNOLOGY

### OUR ASSOCIATES



TEMPSENS INSTRUMENTS (I) PVT. LTD.  
B-188 A, Road No.5, Mewar Industrial Area,  
UDAIPUR-313003 (Rajasthan) INDIA  
Ph. : +91-294-2492127, 28, 29 Fax : +91-294-2492447, 2526649  
Email : info@tempsensindia.com, tempsens@pyrotechindia.com  
Web. : www.tempsens.com

### Our Offices

Baroda : 09327157887  
Delhi : 09312872090  
Raipur : 09329026944  
Hyderabad : 09390919399  
Bangalore : 09844061752  
Jamshedpur : 09431182353  
Mumbai : 09322676597  
Chennai : 09382990001  
Kolkata : 09330961640