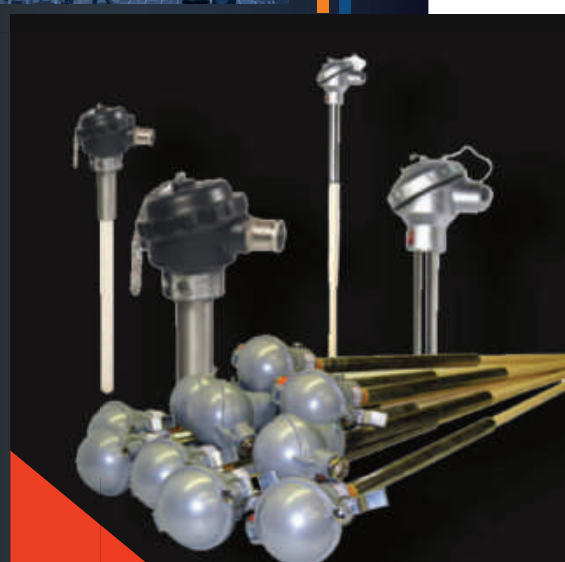
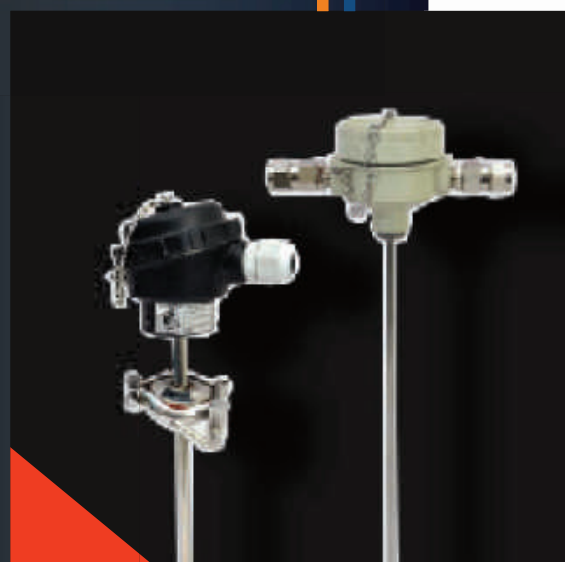




# THERMOCOUPLES, RTDS & THERMOWELLS FOR PETRO CHEMICAL INDUSTRIES

Temperature Sensors  
To Meet Your Industry Needs



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



S. No. 7, Plot 42, PCNTDA,  
MIDC Bhosari, PUNE - 411026.



+91-020-66345100



[senstemp@eurekaengg.com](mailto:senstemp@eurekaengg.com)



## ABOUT US

Eureka Engineering Enterprises (Quality temperature sensors since 2000), is an ISO 9001-2015 certified, leading manufacturer of Temperature sensing and control systems founded by technocrats with their factory located at MIDC Bhosari, Pune. The company handles global, as well as national clientele. The factory is equipped with dynamic and autonomous machinery like Deep Hole Drilling Machine, CNC Turning Machine, Lathe Machines, TIG Welding for accurate machining. Their manufacturing program in a state-of-the-art manufacturing facility includes Thermocouples (K, N, J, N, R, S, T, E, and B types), Resistance Temperature Detectors (RTDs), Thermowells (Bar stock, Fabricated and Customized), Temperature Indicators, Controllers, and PID Controllers, etc. Eureka stands on three central pillars of – Quality, Value, and Delivery.

Leading manufacturer of Temperature sensing and control systems founded by technocrats



2000



State-of the art manufacturing factory located at MIDC Bhosari, Pune

## THREE PILLARS FOR EUREKA MOMENT

### Quality - Value - Delivery



We are an ISO 9001:2008 certified company specializing in manufacturing and supplying temperature measurement and control systems. We help improve productivity and provide growth opportunities to employees and suppliers while adhering to business philosophy of Total Quality Management. We have appropriate infrastructure & technical expertise supported by qualified and experienced engineers.



At Eureka, we believe in providing quality at optimum cost. Our manufacturing program includes Resistance Temperature Detectors (RTDs), Thermocouples (J, K, N, R, S, T, E, and B types), Thermowells (Bar stock, Fabricated and Customized), Temperature Indicators, Controllers, and PID Controllers etc. Our instruments have been successfully employed in various Process control Industries.



In today's world, speed is the most sought after parameters of reliability. We strive to deliver within proposed time frame and ensure that the delivery of the products are within reasonable duration so that our customers can trust us in long term. Today, we take pride in announcing us as one of the most trusted manufacturers and suppliers of Temperature measurement and control systems.

**SINCE 2000**

ISO 9001-2015  
certified by  
TUV Nord

CE Marking certification  
by Ente Certificazione  
Macchine Srl, Italy

**2020**



50 + number of  
employees working  
to give standard quality  
products

Annual turnover  
crosses Rs.83 million

## PROPELLING INNOVATIONS

Besides standard products, we have capabilities to fulfill almost any custom design requirement in temperature sensing

Eureka strives to find better solutions to customer need

Provide reliable solutions to end user

Continuously working towards offering the best in terms of innovation, quality, delivery and value

Solutions to suit most critical application



At Eureka we thrive to deliver quality products at competitive price and prompt delivery lead by dedicated workforce in a state of the art manufacturing facility where 'Therma' stands as a leading brand manufacturer of Temperature Sensing Instruments



**MANOJ KHATAN**

Managing Director

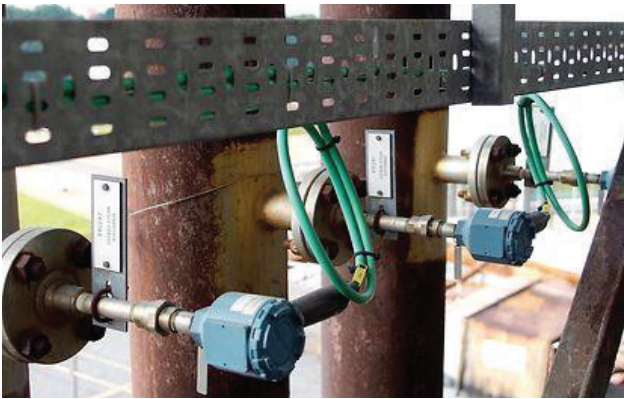
**Petrochemicals** are obtained from Natural Gas such as Propane, Ethane, Butane and from Crude oil – Naphtha.

Some Important and largely produced Petro Chemicals are Ethylene, Propylene, Benzene & Methanol. Products made from these petrochemicals include Plastics, Soaps, Detergents, Solvents, Drugs, Fertilizers, Pesticides, Fibers, Paints, Epoxy resins, Adhesives and Insulating materials & others.

Temperature measurement & Control are very critical and important at various stages of Petro Chemical processing.

**Therma Instruments**, with Innovative design, excellent manufacturing facility & Rigorous Quality Control techniques – provides the best Engineered solutions for Temperature measurement.

## THERMOCOUPLE ASSEMBLIES:



Thermocouples & Thermowell for Pipe lines

**Thermocouples & Thermowell for Pipe lines:** Pipelines carry Gases, Liquid Chemicals, Water..etc at high Temperature, High Velocity & Pressure throughout the Petro chemical plants. We manufacture a wide range of Thermocouples, RTDs and Thermowells, suitable for installation on Pipes & storage vessels. Thermocouples: Mineral Insulated Sensors, Type : K, N, J, E, T, R & S., suitable for 0 to 1700 deg C

**Thermocouple Protection Sheaths :** SS316, SS310, SS321, Inconel 600, Molybdenum etc. Sensor have calibration & traceability to ASTM E585 / E 585 M – 01a BS EN 60584-1; IEC 584, IEC 1515, ANSI / MC 96.1

**Connection Head :**

Cast Aluminium, Weather proof - IP 65, IP 66, NEMA 4 & NEMA 4X. Hazardous Area /Explosion Proof, as per NEC Class 1 Div1, Group B,C, D. ATEX ( CENELEC ), E exd, IIB, IIC, T3..T6. ATEX II 2 G.

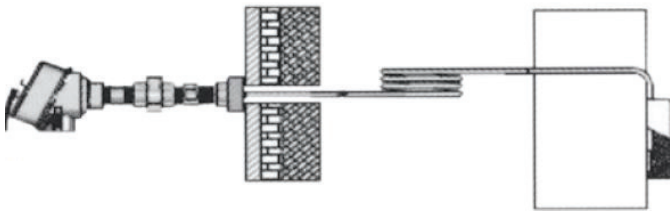


## Steam Cracking Furnace- Ethylene, Propylene Production :

Ethane-Propane Hydro Carbon mixture is fed to furnaces and heated at temperature 750 – 950 Deg C. It is cracked, forming ethylene, propylene and other byproducts. In this process, the feed gas flows inside cracking tubes in a radiant furnace and the tubes are heated externally by thermal radiation.

## TUBE SKIN THERMOCOUPLES

Tube skin thermocouples are used to measure accurately and efficiently the Skin ( Surface) Temperature of the Tubes.



Heat Shield

**Thermocouple:** Type K, N. Mineral Insulated sensor, with sheath material SS 310, SS 321, Inconel 600. Size 6mm, 8 mm diameter.

**Expansion Coil:** Furnace tubes at high temperature will move substantially. Expansion coils loops are provided to prevent the sensor from damage.

**Sensor Pad:** Thermocouples are built with Weld pad and shaped to the curvature of the process Tube. Pad Material available are SS310, SS347, SS 446 , Inconel 600 & Hastelloy.

**Heat Shields:** Thermally insulate the sensor pad from the furnace radiation heat, so that the thermocouples measure the actual Tube skin temperature. They are molded with high grade thermal insulation material.

### Coke Formation in Ethane Cracking:

During the process of Ethane cracking, coke is formed, inside the radiant Tubes, where the temperature is raised to around 850 °C. Thermowell suffer from severe erosion damages caused by impingement of coke particles, flowing at high velocity.

**Therma Instruments** is specialized in design and manufacturing Thermowells suitable for such harsh Conditions.



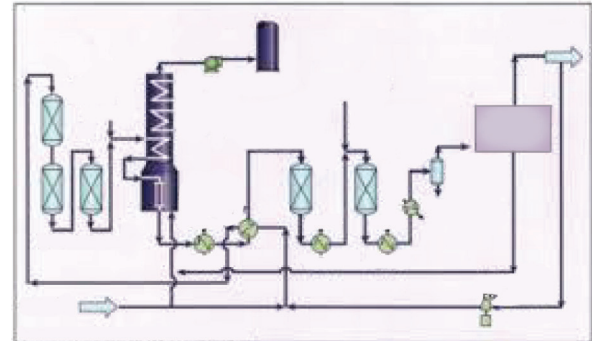
Thermocouple with STELLITE coated Thermowell

## AMMONIA – FERTILIZER PRODUCTION :

Ammonia is one of the most Important Chemicals, from which Nitrogen Fertilizer is made. Ammonia is produced by the reaction of Hydrogen & Nitrogen. Hydrogen is obtained from Natural Gas by steam re forming and Nitrogen is available from air.

## STEAM -REFORMER

Steam - Methane reforming is a method for producing Hydrogen from Methane. It uses steam pressure, and a catalyst to convert methane into hydrogen at temperature around 700–1,000°C, inside Tubes in a furnace. Temperature is measured at various stages of reforming process ,using Thermocouples.



**EUREKA SOLVES LEAKAGE PROBLEMS OF RENOWNED PETRO-CHEMICAL INDUSTRY**

WITH ITS LEAK-PROOF THERMOCOUPLE.

**THERMA** INSTRUMENTS  
EUREKA  
CORPORATION

+91-020-66345100

senstemp@eurekaengg.com | www.eurekaengg.com | www.thermainstruments.in

### Leak Proof -Thermocouple

Type R/S, Temperature 1400°C. Re-Crystallized Alumina Sheath. Suitable for High pressure, high Temperature & Fumes.

Therma Instruments Offers innovate a leak proof thermocouple construction design.

### Tube skin Thermocouple

Tubular steam reformers catalyst tubes are arranged in a **furnace**.

- Heated 1,000 to 1,100°C. Temperature is measured by Tube Skin Thermocouple

## MULTI POINT THERMOCOUPLES:

Multipoint Thermocouples are used to measure the Temperature at different locations , Elevations and levels in Tall Chemical Reactors & Vessels , Catalyst Crackers, Fractional Distillation Towers, Large Tanks, Kilns, Column , Silos and others. These are designed and Manufactured as per customer requirement.



**Thermocouple** : Mineral Insulated Thermocouples Type K, N, R & S – any length.

**Size** : 3 mm , 6mm, 8 mm. SS 316, SS 310 & Inconel 600 Thermowell Protection Pipe : SS 316, SS 310, SS 321 & Inconel 600 .

**Flange** with Compression Fittings

**Head** or Junction Box – NEMA 4 , NEMA 4X, IP 66, IP 67.

**Hazardous Area** / Explosion Proof ,

as per NEC Class 1 Div1, Group B,C, D.

ATEX ( CENELEC ) , E exd , IIB , IIC , T3..T6 .

ATEX II 2 G.

**Designs** allows for replacement of any Individual Thermocouple

## THERMOWELLS

### Types of Thermowells

- ▶ Screwed – Threaded
- ▶ Weld in
- ▶ Socket Weld
- ▶ Flanged
- ▶ Vanstone
- ▶ Pipe Fabricated



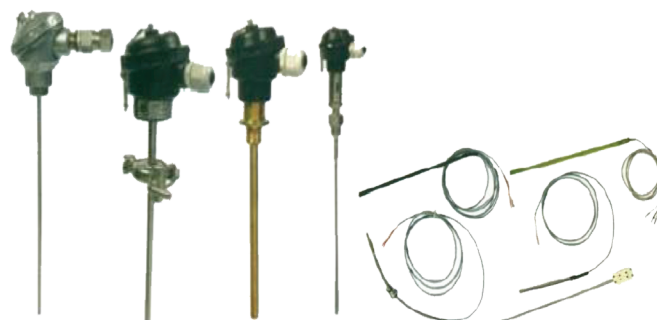
### Material Options & Special Requirements

SS 316, SS 304, SS 310, SS 321, SS 446,  
Carbon Steel, Incoloy 800, Inconel 600, 625,  
Alloy 20, Monel 400...more on Request.  
Special Requirements : Stellite Overlay, Coating  
of Ceramic , Glass Enamel , PTFE

We Design & Manufacture Thermowells in  
accordance with ASME PTC 193 TW -2010.  
All Thermowells are thoroughly inspected  
and tested at all stages of manufacturing.  
Non Destructive Tests can be provided upon  
request.

### Resistance Temperature Detectors ( RTD )

Pt -100, 500 ,1000 Wire Wound & Thin Film  
Range : - 200 to 600 deg C, Class A, B Accuracy.  
ASTM E 585, BS EN 60584-1, IEC 584  
Protection Sheath: SS 304, 316 ,HasteAlloy,  
others Size : 3 mm , 6 mm, 8mm and More.  
2 Wire, 3 Wire, 4 wire Types – Simplex &  
Duplex.  
Replaceable Elements & Full Assembly with  
Head, Terminals & Thermowells



## CABLES

### THE TYPE OF CABLES

- ▶ Thermocouple Extension Cables &  
Compensating Cables
- ▶ RTD Cables
- ▶ Control Cables
- ▶ Instrumentation Cables
- ▶ Multi Pair, Multi Core,  
Twisted, Shielded, Braided  
& Armored



### INSULATION TYPES

- ▶ **PVC:** Flame Retardant PVC insulation  
Provides good chemical resistance and  
suitable up to 105 deg c
- ▶ **FEP / PFA / TFE :** Teflon insulation has  
excellent resistance to Abrasion, solvent,  
Chemical and Moisture, Suitable up to 260  
deg c
- ▶ **Fiber Glass:** Individual conductors and  
overall insulated with glass fiber, used in  
very high temperature, up to 700 deg C.
- ▶ **Ceramic Fiber:** Extreme high Temperature  
applications up to 1000 deg C.



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



S. No. 7, Plot 42, PCNTDA,  
MIDC Bhosari, PUNE - 411026.



+91-020-66345100



[senstemp@eurekaengg.com](mailto:senstemp@eurekaengg.com)

