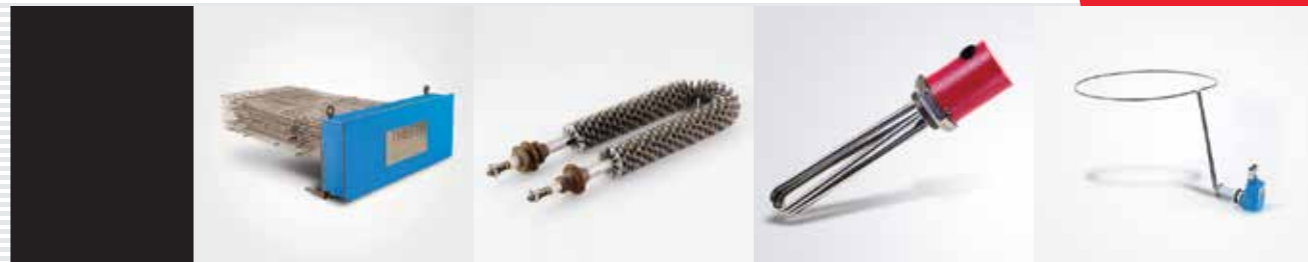


THEETA[®]

ENGINEERED FOR PERFECTION



INDUSTRIAL HEATING
ELEMENTS AND SYSTEMS

THEETA[®]
THEETA ELECTRICALS PVT. LTD.

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Designed By STERCO

Industrial Catalogue

The Company

Theeta is the largest producer and exporter of tubular heating elements and heating units for domestic, commercial and industrial applications in India. The elements and heating units are sold under the brand name Theeta.



Our Mission & Vision

From the day of inception, THEETA has come a long way with a strong determination to survive all odds, we are committed to:-

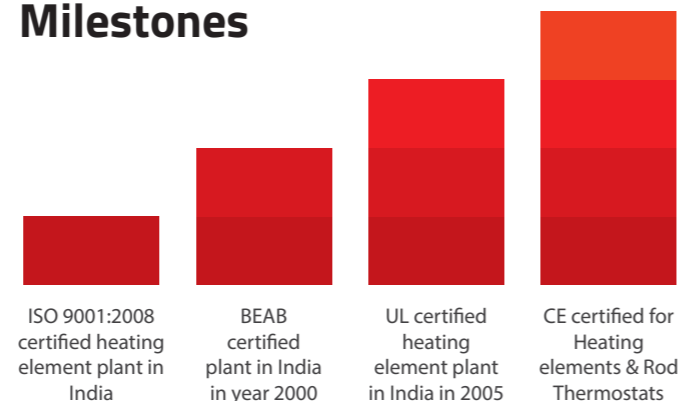
- Incorporate latest innovations and technological expertise in our production systems that are cost effective.
- To excel in every aspect of product quality and customer satisfaction.
- Our worldwide acceptance is rooted in quality processes that are employed at every step throughout the enterprise production line.

The company is led by a team of highly qualified engineers and professionals with more than 25 years in the specialized field of electric heating.

Our ISO 9001:2008 certified plant is located at IMT Manesar, Gurgaon, 30 kms from New Delhi and covers an area of 80,000 sq ft.

Our customers for heating elements and units include all major domestic and Industrial companies in India and abroad, with domestic ranging from appliance, white goods manufacturers to industrial elements and units catering to both private and government Industrial companies.

Milestones



Manufacturing

The heating elements are manufactured at our plants with a combined area of approx 100,000 sq ft. This gives us the capacity to handle huge volumes both for domestic and exports market.

Manufacturing Strengths

- Fully and semi automatic machines from leading manufacturers of heating element equipment all over the world
- Dedicated production lines for high volumes
- Fully Automated and semi automated processes at various stages of production.
- Facility for Glass lined Heating Elements
- Large tonnage Hydraulic Presses
- High capacity pressure testing machines
- Ample raw material stocks for faster turnaround
- Heating Elements available from 6.5 mm to 16mm diameter and lengths upto 8 metres
- Tubing: Various grades of Stainless Steel, Incoloy, Inconel, Copper, Aluminum, Mild Steel, Steel tube Copper coated, Titanium



Testing

Theeta has all the testing equipment necessary for manufacturing of elements. Right from the inception to the final stages, the elements go through various tests.

As per ISI requirements we conduct

- Routine tests
- Acceptance Tests
- Type Tests

Our Incoming Inspection lab, Quality Lab and R&D lab are also well equipped with all the necessary instruments and testing panels which are regularly calibrated from master instruments which are in turn calibrated from accredited labs.



Design

A dedicated team at Theeta uses the latest 2D & 3D software tools to design the element, heating systems and units according to customer's requirement.



Our sourcing team with their vast experience has a number of qualified vendors on the panel that help us develop and supply the machined parts and accessories

Our Tool room is well equipped with the necessary machinery like Lathe Machines, Milling Machines, Shapers, Drill machines, Grinders etc for developing fixtures and assemblies required for the heating elements. Some of the complicated fixtures are sourced from various tool rooms.

Research & Development

Research and Development play an important and strategic role, hence a structured approach to creativity is used to stimulate innovation at Theeta



Theeta has dedicated R&D lab for testing and developing new ideas, improvement in production processes, new and existing product development, long term product testing based on actual environment, value engineering and developing of most appropriate industrial production for higher quality.

The main projects undertaken for the benefit of the Business Units include the development of new and next generation products and solutions in areas of scaling, corrosion, design, target materials, alloys, coating and casting.

More than ever, the successes of the businesses in our company are the result of a relentless pursuit of new, innovative solutions and developments.

Certifications



Quality Policy

We at Theeta Electrical ensure customer satisfaction through quality and safety in our products, achieved through up gradation of human resources, technology and continual improvement in systems.

Industrial Elements And Systems

Having vast experience and qualified engineering staff, Theeta has a dedicated team and area for designing and manufacturing various Industrial heating elements and systems. The team is backed by professionals who have more than 30 years of experience in designing and executing all types of industrial heating systems.

Manufacturing and Designing

Theeta's design team uses the latest 3D softwares for designing the product and further simulating the heating systems. This prevents fitment issues at the time of execution of the project. We can design Industrial systems upto 1 MW.

Theeta also has experience & capability of designing your heating system based on temperature requirement, medium to be heated, volume or size of the tank etc.

Theeta follows stringent requirements according to the customer's specifications.

In house capabilities

Sand blasting, Buffing, Soldering, Brazing, Tig welding, Pressure testing etc.

Different IP ratings can be provided from third parties. Control panels are supplied along with if required.

Elements

Available out of various grades and dia of tubing like Incoloy 800, 825, Stainless steel 304, 321, 316, 316L, Titanium, Inconel, Mild Steel, Copper etc. The industrial systems can be provided with elements with diameter upto 16 mm. The elements are made out Ferro Alloys /Nichrome wire and with various grades of Magnesium Oxide powder according to the applications.

Certifications

All certifications, testing and approvals required are amply provided.

Packing

Units and systems can be packed on skids or pallets as well as wooden boxes

PROOD DUCTS

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Industrial Air Heating Elements

Air Heater

Air Heaters are made out of Stainless Steel/ Incoloy tubing to withstand a surface temperature of 650 deg C. Each element is provided with two adjustable fixing brackets.

Some of the applications of Industrials air heating elements include Load Banks, Furnaces, Industrial Ovens etc.

Finned Air Heaters

Finned Air Heaters are made out of Stainless Steel/ Incoloy tubing. Elements are supplied with round fins of various dia. Each element is provided with two fixing brackets.

Some of the applications include Dehumidifiers, Duct heaters etc.



U shaped Standard Air heater

S. No.	Drawing No.	Product Description	Material	Voltage	Wattage
1	2011	10" U	SS/INCOLOY	230V	500W
2	2007	18" U	SS/INCOLOY	230V	750W
3	2003	24" U	SS/INCOLOY	230V	2.0KW
4	2004	30" U	SS/INCOLOY	230V	1.0KW
5	2001	30" U	SS/INCOLOY	230V	1.5KW
6	2006	39" U	SS/INCOLOY	230V	2.0KW
7	2009	39" U	SS/INCOLOY	230V	1.5KW



U shaped Standard Finned Air heaters

S. No.	Drawing No.	Product Description	Material	Voltage	Wattage
1	2379	10" U FINNED	SS/INCOLOY	230V	500W
2	2002	24" U FINNED	SS/INCOLOY	230V	1.0KW
3	2734	30" U FINNED	SS/INCOLOY	230V	1.5KW
4	2757	30" U FINNED	SS/INCOLOY	230V	1.0KW
5	2005	39" U FINNED	SS/INCOLOY	230V	2.0KW
6	9074	39" U FINNED	SS/INCOLOY	230V	1.5KW



Elements can also be designed as per customer specifications

Elements are available in various wattages and tubes of various grades and diameters

Industrial Water Heating Elements



Industrial Water Immersion Heaters are made out of copper tube brazed to brass flange and are duly nickel plated. Each element is provided with a brass check nut, two fiber washers and a painted metallic cap with a grommet for cable end.



S. No.	Product Code	Product Description	Depth of Immersion	Number of elements	Material	Voltage	Wattage
1	2020	1.1/4" INDL	225	2	COPPER	230V	2.0KW
2	2021	1.1/4" INDL	285	2	COPPER	230V	3.0KW
3	4666	1.1/4" INDL	380	2	COPPER	230V	4.0KW
4	4264	1.1/2" INDL	225	2	COPPER	230V	2.0KW
5	2022	1.1/2" INDL	225	2	COPPER	230V	3.0KW
6	2023	1.1/2" INDL	327	3	COPPER	230V	4.0KW
7	6519	1.1/2" INDL	380	3	COPPER	230V	6.0KW
8	6427	2" INDL	265	3	COPPER	230V	3.0KW
9	2664	2" INDL	265	3	COPPER	230V	4.0KW
10	2024	2" INDL	320	3	COPPER	230V	5.0KW
11	2025	2" INDL	380	3	COPPER	230V	6.0KW
12	2026	2" INDL	580	3	COPPER	230V	9.0KW
13	1379	2" INDL	915	3	COPPER	230V	12.0KW

Elements can also be designed as per customer specifications

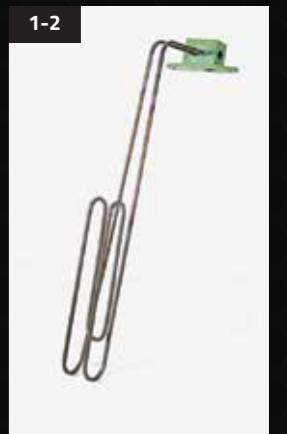
Elements are available in various wattages and tubes of various grades and diameters

Caution: All Water heating elements are meant for heating water only and these must be fully immersed in water before putting them in operation

Industrial Chemical Heating Elements

Over-the-side Immersion Heaters

Over-the-side Immersion Heaters are used in solution where it is necessary to remove the heater for periodic inspection and cleaning as these heaters can be easily removed without emptying the tank. These are also specially suitable for use in tanks of wood and concrete etc. where screwed immersion heaters cannot be used.



S. No.	Product Code	Product Description	Material	Depth of Immersion	Voltage	Wattage
1	2012	ALKALINE	STAINLESS STEEL	660	230V	3.0KW
2	2015	TITANIUM TUBE	TITANIUM	660	230V	3.0KW
3	2014	LEAD COVERED	MILD STEEL	660	230V	3.0KW
4	1983	OVAL FLANGE	MS Copper coated	500	230V	6.0KW

Alkaline Immersion Heaters

Manufactured out of Stainless steel tubing, Alkaline Immersion Heaters are used for alkaline cleaning solutions, citrus juices and very mild acid baths not corrosive to stainless steel sheath.

Teflon Coated

Suitable teflon coating is provided on metallic sheath heating elements since teflon does not react with most of the chemicals at the normally required temperature.

Lead Covered Immersion Heaters

Lead Covered Immersion Heaters are recommended for nickel and copper plating baths, or chrome plating baths and sulphuric acid solution having not more than 10% concentration. Not recommended for any other acid.

Titanium Sheath Immersion Heaters

Titanium sheath immersion heaters are generally used for plating baths such as nickel, chrome, gold and silver plating. These can also be used for ferric and iron chloride solutions, bright dips and pickles containing nitric, phosphoric and chromic acids, nitrates, nitrites permanganates persulphates and dichromates.



Elements can also be designed as per customer specifications

Elements are available in various wattages and tubes of various grades and diameters

Oil Immersion Heaters

Oil Immersion Heaters are manufactured out of copper coated MS Tube brazed to 2.1/2" B.S.P.P. Cast Iron Flange. Each element is provided with a Thermostat Pocket and a painted metallic cap with a grommet for cable end.



S. No.	Product Code	Product Description	Material	Depth of immersion	No. of elements	Voltage	Wattage
1	9075	OIL HEATER	CU COATED MILD STEEL	438 mm	1	230V	1.0KW
2	9076	OIL HEATER	CU COATED MILD STEEL	438 mm	1	230V	1.5KW
3	2016	OIL HEATER	CU COATED MILD STEEL	440 mm	2	230V	2.0KW
4	2017	OIL HEATER	CU COATED MILD STEEL	440 mm	2	230V	3.0KW
5	2018	OIL HEATER	CU COATED MILD STEEL	580 mm	3	230V	4.0KW
6	2019	OIL HEATER	CU COATED MILD STEEL	780 mm	3	230V	6.0KW

LPG Units



Elements are made out of Copper tube duly Nickel plated and supplied with 2 1/4" Flange, Washer and Check Nut. Flameproof terminal box also available

Available in 6 KW, 12 KW, 15 KW and 18 KW. Suitable for Gas Vaporisers

Elements can also be designed as per customer specifications

Elements are available in various wattages and tubes of various grades and diameters

Caution: All Water heating elements are meant for heating water only and these must be fully immersed in water before putting them in operation

Flanged Heaters and Heater Bundles

Typical wattage range 1KW – 1MW

These are type of heating elements or bundles used to heat both gases and liquids in tanks or pressure vessels.

In flanged heaters and bundle heaters heating elements are welded/brazed on MS, SS, Brass flanges of varied thicknesses, shapes and sizes. They are sometimes welded on MS, SS, Brass ferrules and fitted on the large flange. These heaters are typically custom designed depending on the usage and fitment requirements and are mostly fitted on the companion flange that are welded on the tank or vessel.

Withdrawable type immersion heaters (bundles inserted in pipes) - Benefits include for maintenance and breakdown tank doesn't have to be emptied with these heaters.



Specifications

Tube

- Copper with various thicknesses
- Incoloy 800, 825
- Stainless Steel 304, 316, 321
- Mild Steel

Optional fittings

- Thermostat or thermocouple provision
- Terminal box (enclosures) in standard or custom sizes

Connection arrangements

- Single or three phase
- Star or delta connection
- Multiple banks as per customer specification

Wattage and Voltage can be customised as per the requirement

Applications

Boilers and water heating, Water-Glycol solution heating, Steam generators, Freeze protection, Heat transfer systems, Laundry machines, Lube and fuel oil heating, Hydraulic and heat transfer oils.

Theeta is well equipped design the duct heaters or Immersion heaters for the customers. From 2D to 3D designs, to KW calculation, correct watt density, tube and flange selection etc can also be designed by Theeta engineers

Screw Plug Heaters

These are a type of medium capacity Immersion heaters used to directly heat water/oil/chemicals/air etc in a tank or a vessel with threaded openings. These heaters consist of tubular heating elements in a threaded plug. These are brazed or welded on the plug, which can be directly screwed on the tank wall.

With selection of KW ratings, sizes, terminal enclosures, sheath materials, these screw plug heaters can be designed for wide variety of heating mediums, lengths and temperatures.



Specifications

- Screw Plug Mounting: Brass, SS, MS etc.
- Screw plug enclosure: MS powder coated
- Standard screw plug sizes are as 1", 1 1/4", 1 1/2", 1 3/4", 2", 2 1/2" NPT

Applications

Boilers and water heating, Solar water heaters, Sterilizers, Laundry machines, Chemical heaters, Steam generators, Freeze protection, Heat transfer systems, Lube and fuel oil heating

All heaters can be supplied with flameproof and weather proof terminals

Circulation heaters

Circulation Heaters also known as Inline Heaters are used where transitional heating is required while maintaining the flow rate of medium. Circulation heaters are better than using external source such as heat exchangers as the losses are minimal because of direct heating.

With selection of KW ratings, sizes, terminal enclosures, sheath material, these circulation heaters can be designed for wide range of heating mediums, tube or tank sizes, and temperatures.

The units are assembled in a Screwplug / Square flange / Round flange. They are easy to maintain and install.



Specifications

- **Types:** Single or Double circulation Heaters
- **Tubing:** Stainless Steel/ Incoloy / Titanium
- **Vessels:** Can be custom fabricated

Applications

Desulphurization, Heat up petrochemical mediums used in industrial processes, For Chemical processing applications, ideal for processing fluids and hazardous liquids, Superheat steam, Lubrication and fuel oil applications, Pasteurizing Industries & Pipeline Heating

All heaters can be supplied with flameproof and weather proof terminals

HVAC Heaters

Capacity 1KW to 1MW

HVAC heaters can be used in applications to heat air and gases for comfort air heating or industrial air heating.

Duct Heaters

In duct heaters tubular heaters are welded/ brazed or fitted on a flange and the flange in turn can be placed in the opening provided in the duct.



Wattage and Voltage can be customised as per the requirement

Duct heaters can also be provided with finned heating elements. Fins increase the surface area of heating. This increase in surface area ensures better and even heat transfer to forced air in the duct.

Applications

Heat treatment, Forced air comfort heating, Booster air heater, Air drying operations, Core drying, Air pre-heating, Air handling equipment, Fan coils, Terminal reheating, Multizone reheating, Heat pump auxiliary systems, Return air heating, Resistor load banks, Annealing

Process Air heater

These are HVAC heaters which are connected to the blowers for purpose of supplying processed air at the required temperature.



Specifications

Tube

- Incoloy
- Stainless Steel 304, 316, 321

Fins

- Spiral in SS/MS,
- Round SS/MS
- Rectangular SS/MS

Connection arrangements

- Single of three phase
- Star or delta connection
- Multiple banks as per customer specification

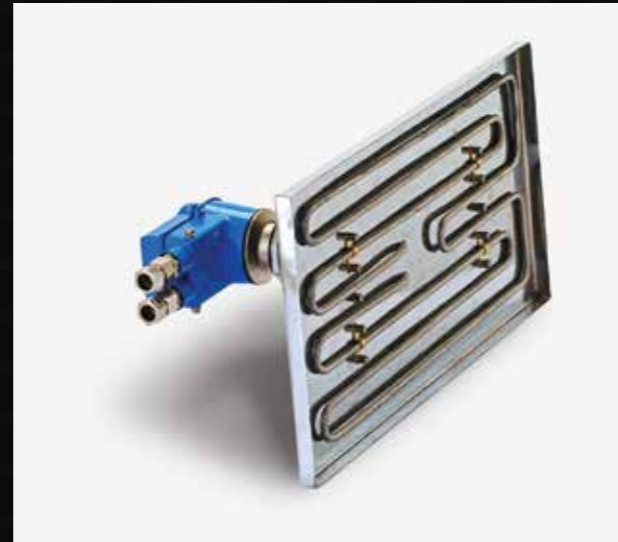
Electrostatic Precipitator Heating Elements

ESP Hopper heater

Hoppers are part of ESP and are located at the bottom of ESP. The function of hopper heater is to heat the hopper so as to

- Prevents moisture to condensate from getting collected in it
- Removes fly ash from precipitator

Hopper heaters can be provided with reflector plates for efficient heating in the hopper



ESP Shaft and Insulator heaters

Shaft and Insulator heater: These heaters are provided at the shaft and insulator to maintain the temperature above dew point i.e. between 80-120 deg C. If temperature falls below the range as as above there will be a continuous tracking of electrical field over the surface of insulator which will result into damage of insulator and non availability of field for collecting the fly ash.

The above heaters come with pressure die casted IP 55 terminal box. Custom made ESP heaters can also be provided



We can supply complete heating equipments including

Hoppers are part of ESP and are located at the bottom of ESP. The function of hopper heater is to heat the hopper so as to



Terminal Box – Explosion proof / flame proof /Weather proof covering all degrees of protection



Thermocouple – Depending upon the temperature requirement thermocouples- J, K or RTD.



Control Panel – As per the requirement for skin temperature, working temperature we can provide the conventional control panel and also thyristorised control panel.

While sending enquiries kindly give necessary details like

- Medium to be heated.
- Working temperature and pressure.
- Available voltage and your preference for connecting heaters in star or delta connections.
- Your preference for mounting the heater from top or side.
- Fixing details like flanges / plate dimensions and vessel sizes.
- In case of liquid heating you would like directly immersed type or withdrawable type.
- In case of air heating CFM of air if it blowing through the heater.
- Time required for achieving final temperature.

On receipt of the above information we shall send you our design and quotation