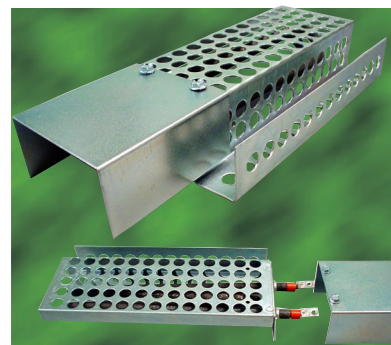
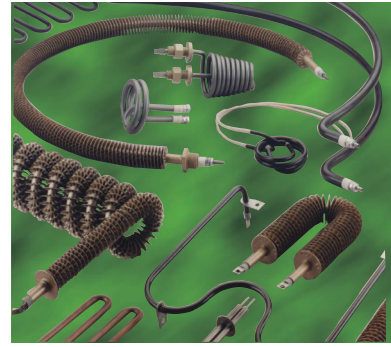


# **industrial heating products**



*electric heating and controls*

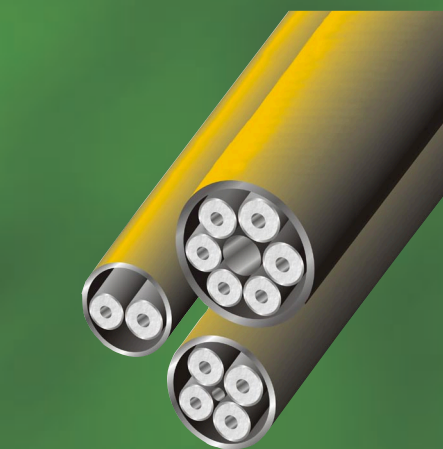


## Tubular & Finned Tubular Elements

- Tubular applications: Clamp-on, wrap-around, immersion, convection or radiant heating.
- Finned tubular applications: Natural convection or forced draft space heating, industrial process air heating, preheat & reheat.
- Custom designs to fit the job.
- Single ended terminations available.
- Many sheath materials available depending on application.
- Options: Numerous terminations, insulators and seals, special fittings and mounting plates available.
- Standard diameters include .250", .260", .312"/.315", .375", .430", .475", .490" and .625".
- Lengths in excess of 30 feet unspliced.
- UL Recognized, CSA Approved, and CE certified.
- Hermetically sealed mil spec elements, qualified to MIL-H-22594A.

## Refrigeration Defrost Heaters

- Applications: Electric defrosting of coils and evaporator pans for commercial refrigeration equipment. May be clamped to pipes or tanks to promote drainage and prevent freezing.
- Custom designs to fit the job.
- Molded terminals suitable for wet and moist locations.
- Many standard sizes in stock for quick shipment, fully annealed to permit bending to shape in the field.
- UL Recognized and CSA Approved.
- Available with optional thermal cutouts and fusible links.



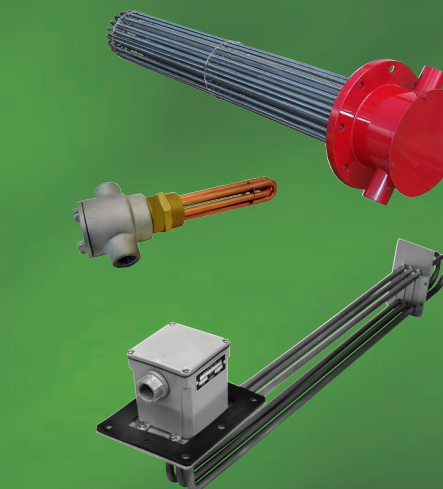
## Multi-Cell Cluster Heaters

- Applications: Platens, Process Equipment, Superheating of various media, Heat treating equipment, Holding tanks for molten metals, High temperature preheating for chemical reactors, Exotic material forming and fabrication, furnaces and high temperature ovens.
- Stainless Steel, Incoloy and Inconel sheath materials.
- Extremely high operating temperatures.
- Ability to "zone" individual and multiple heating elements for most accurate temperature control of platens.
- Wide variety of internal and external element diameters.
- Many internal element configurations maximize element efficiency.
- Multiple wiring options allow for most effective electrical output.

## Immersion Heaters

INDEECO offers a wide variety of designs for heating gases, liquids and soft metals by direct immersion. Standard units in copper, steel, stainless and Incoloy; custom units in many different sheath, screw plug and flange materials depending on application requirements. Optional liquidproof or explosion-resistant terminal boxes, hermetic terminal end seals, high temperature construction and built-in controls. UL Listed, UL Recognized, CSA Approved, and CE Certified designs are available.

- Pipe Thread/Screw Plug Heaters: 1" – 3" fittings.
- Flange Heaters: 2" – 24" ANSI Flanges to 1500 lbs.
- Over-the-Side Heaters.
- Cooling Tower Heaters.
- Bottom Mounted Heaters.
- Tank Heaters.
- Hopper Heaters.
- Dry well heaters.
- Open coil, pipe insert heaters.
- CSA listed pipe thread for hazardous areas.



## Storage Tank Heating Systems

Used to raise or maintain temperatures up to 1000° F for a wide variety of liquids and gases found in storage tanks and process vessels. Low watt density open coil elements recommended for heating viscous and temperature sensitive materials including asphalt, chocolate, fuel oils, pitch, resins and tar.

- Storage Tank Heaters with built-in controls.
- Railroad Tank Car Heaters for restoring heat lost during transit or liquefying material for draining or pumping out of tank cars.
- Lengths up to 40 feet.
- Flexible element design allows installation in tanks with as little as 4 feet clearance to obstructions,
- Heating elements may be removed for inspection or replacement without draining the tank.
- Open coil element must be installed in INDEECO or customer supplied pipe.
- Conservative design ensures long life.
- Special element design resists shock and vibration.

## Circulation Heaters

Designed to heat liquids, gases or vapors; including air, heat transfer fluids, helium, nitrogen, oils, steam and water.

- ASME design and certification available.
- Horizontal or vertical mounting.
- Outlet temperatures up to 1200°F.
- Options: Stainless steel, weatherproof and explosion-resistant constructions; special vessel and heater materials.
- Remote panels; sequencer or SCR control in NEMA 12, NEMA 3R, NEMA 4, NEMA 4X or NEMA 7 enclosures.

## Process Air/Duct Heaters

Designed for use in ovens, autoclaves and other industrial forced air systems for drying, baking or heat treating.

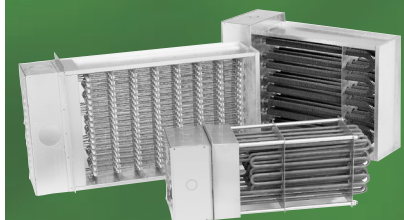
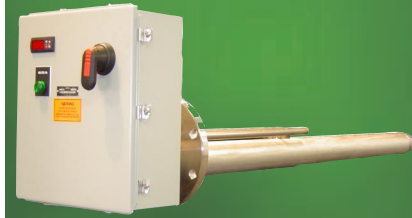
- For outlet air temperature up to 1200° F.
- Open coil, tubular and finned tubular designs.
- Standard ratings up to 4,300 kW; custom applications to 12,000 kW.
- Options: Pressure tight, pressure plates, angle iron frames, and control systems.
- Remote panels; sequencer or SCR control in NEMA 12, NEMA 3R NEMA 4, NEMA 4X or NEMA 7 enclosures.
- CSA Approved designs available.

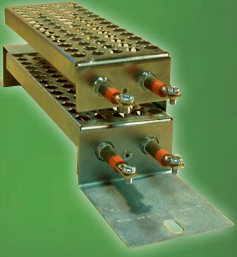
## Heater Control Panels

INDEECO provides total system responsibility with control systems engineered to match INDEECO heating equipment.

- Full proportioned SCR system with PID temperature control.
- Control Panel enclosures available to meet NEMA 1, 4, 4X, 7, 3R and 12 standards for indoor or outdoor locations, hazardous or non-hazardous areas.
- All components are factory mounted and wired in compliance with NEC.
- UL Listed designs available.
- RS485 communication, UL recognized, 1/16 DIN manual over-temperature controller with reset are available options.
- UL Listed explosion-proof panels for use in Class I, Division 2 locations.

The Quick Ship Temperature Control panel provides fast shipment, precise temperature control, compact packaging, and is pre-engineered for resistive load applications. The panel is completely assembled, pre-wired, tested, and ready for trouble-free installation and operation.





### Switchgear Space Heaters

- Designed for the maintenance of temperature and for minimizing the buildup of moisture inside enclosures containing sensitive equipment.
- Switchgear space heaters are less expensive than strip heaters and other, less efficient types of heaters.
- Easy installation.
- Long life elements.
- Corrosion resistant mounting bracket(s) and protective guard.
- Available with integral prewired thermostat adjustable from 30-150°F.
- Optional terminal cover.
- Custom assemblies available.
- UL Recognized and CSA Approved.



### Bolt Heaters

- INDEECO Bolt Heaters are used to preheat large, hollow holding bolts or studs
- Provides a high concentration of heat for bolt expansion in a short period of time.
- Widely used in the manufacture and servicing of steam turbines and other pressure equipment.
- Used to heat die blocks and large platens and to expand adjusting bolts on mechanical or hydraulic presses.
- INDEECO also offers standard and custom built storage carts and portable distribution centers which can power multiple bolt heaters at once.
- Flexible bolt heaters where space constraints pose an installation or removal problem.
- Various lead, plugs and grounding devices are available.
- 120 and 240 Volt available.



### Impedance Pipeline Heating Systems

- The pipe becomes the heating element, eliminating heater burnout common with heat tracing and other maintenance problems.
- Provides uniform heating for viscous materials so there are no hot spots.
- Used to heat asphalt, chocolate, glue, molasses, paraffin, syrups, tar, wax, etc.
- Used to heat air and other gases up to 1600° F.
- INDEECO provides single source responsibility for design, hardware, and start-up assistance.
- Hardware includes control panel, system transformer, thermocouple sensor, electrical terminations and isolation kits, as required.



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