



HEATING SYSTEMS

Caloritech™ Engineered Electric Heat

- Elements & Specialty Heaters
- Engineered Products
- Immersion Heaters
- Air & Space Heaters
- Boilers
- Accessories & Controls
- Transit Heaters



Elements & Specialty Heaters

Tubular Heaters – HX, IX, KX Series

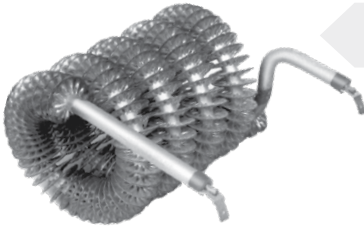
Designed for heating applications with heating temperatures up to 1400°F (750°C).

- Sheath material, voltage, wattage, watt density and physical size/shape can be custom-engineered to suit any requirement.
- Available sheath materials include copper, steel, stainless-steel, Incoloy®, Inconel®, Monel®, titanium, and other metallic materials.



Finned Tubular Heaters - KXF Series

Designed for use in forced convection, air or gas heating systems such as ducts, fan forced electric heaters, recirculation ovens and more.

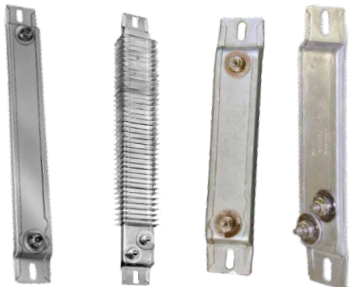
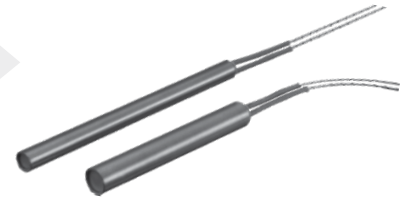


- Can be custom designed for virtually any heating application requiring process temperatures up to 750°F (400°C).
- Sheath material, voltage, wattage, watt density and physical size/shape can be custom-engineered to suit any requirement.
- Sheath materials include steel, stainless-steel, copper, Incoloy®, Inconel®, nickel plated steel, and other metallic materials.

Cartridge Heaters – C Series

Designed to offer a convenient and effective method of heating dies, platens, molds, heat sealing tools, and hot plates.

- Standard diameters for 0.250", 0.5", 0.625", 0.75", and 1.297" holes.
- Can be supplied with a variety of threaded fittings to facilitate installation.
- Available in standard voltages of 120V or 240V; special voltages available on custom order.
- Range from 30W to 5.0 kW, depending on hole diameter and heater length selected; special wattages available on custom order.



Strip Heaters – FS, SD, SS Series

Designed for a wide range of heating applications including surface heating, process air heating, dropping resistors for line applications in railroads and load banks, winterizing and more.

- Can be finned to enhance of heat to air.
- Constructed of high grade materials, including high temperature alloy resistance wire and corrosion-resistant aluminized steel sheath (suitable for maximum sheath temperatures up to 1000°F / 538°C) or corrosion-resistant stainless-steel sheath (suitable for maximum sheath temperatures up to 1200°F / 649°C).

Calvane™ Heaters – FV Series

Designed for comfort heating in mass transportation applications, such as railcars and aircraft.

- Aluminum sheath with integrally extruded fins, with lengths up to 120" and widths of 2.25" and 3.25".
- Offered in standard outputs from 500 to 1750W.
- Can be mounted in ducts for forced convection applications.



Other Elements and Specialty Heaters

- Pilot Gas Heater (PGH & PGHT Series)
- Tubular Band Heaters (TBH & TBW)
- Band Heaters (BC Series)
- Cast-In Heaters (MC Series)
- Hot Plate Heaters (HPH Series)
- Drum Heaters (D Series)
- Bolt and Stud Heaters

Engineered Products



Circulation Heaters - EX Series

Provide in-line electric heating in forced flow applications.

- Designs ranging from 0.6 to 5000 kW, higher kW ratings are also available.
- Optional features include built in high limits and thermostats, stainless steel welded parts, moisture resistant or explosion-proof housings.
- CRN registered vessels and heaters for Canada.
- Authorized to bear the U, U2, and N stamps, depending on the ASME code classification (Section VIII or III).

Packaged Circulation Heaters

Combine a circulation heater and an engineered control package to provide a turn-key system.

- Built to the highest standard in the industry.
- Pressure Vessels & Heaters authorized to bear the U, U2, and N stamps, depending on the ASME code classification (Section VIII or III).



Control Panels CP Series

Provide automatic process control of electric heaters.

- Feature conservative designs for extended life.
- Available up to 4000 amps at 660V.
- Control packages including basic on/off, contactor staged, base-load SCR and full SCR.

Heat Transfer Systems - FX Series

Provide high temperature process heat with temperatures up to 707°F (375°C).

- Offered in 15 to 3000 kW, and from 380 to 660V, higher kW ratings are also available.
- Typical systems are equipped with low density type EX circulation heaters mounted on a structural steel frame with direct drive pumps, inlet, outlet, bypass, drain, fill and bleed valves.
- Other features may include filtration, motorized valves, pressure vessels and instrumentation.
- Pressure Vessels & Heaters authorized to bear the U, U2, and N stamps, depending on the ASME code classification (Section VIII or III).



Explosion-Proof Duct Heaters - XD Series

Heat air in hazardous locations potentially containing explosive gases.

- Utilize extra-heavy walled, finned tubular heating elements mounted in the Caloritech™ patented **x-Max**® terminal housing.
- Optional features including custom duct sizes, kW ratings and control panel packages.
- Standard designs from 2.5 to 50 kW sizes with temperature codes of T2D, T3A or T3B.
- Custom designs for higher power ratings available.

Gate Body Duct Heaters - WXS Series

Designed to heat the inside of the gate and prevent ice build-up on the gate walls, windseals and end members.

- Standard designs ranging from 4 to 120 kW, custom kW ratings are also available.
- Features include a weather proof duct heater, matched motor and high static pressure axial fan assembly installed within a galvanized heavy duty steel housing.
- Optional controls include ambient temperature sensing thermostat, outlet air temperature thermostat, limit control and differential pressure switch.



Immersion Heaters

Screwplug Heaters – CX Series

Designed for heating applications such as water, oils, gases and mildly corrosive liquids.

- Standard designs with 1" to 2.5" screwplugs are available, with copper, Incoloy®, Inconel®, nickel plated steel, and other metallic materials, with or without built in thermostat.
- Custom built heaters are available in almost any rating up to 660V, with special sheath and plug materials.
- Available with general purpose, moisture resistant or explosion-proof terminal housings.
- Conforms to API Bulletin 614 chapters 1 and 2.



Flange Heaters - CX Series

Designed for heating applications such as heating water, oils, gases and mildly corrosive liquids.



- Available in a standard range of sizes from 2.5" to 14" (ANSI flange dimensions) and up to 135" immersed length, custom lengths and diameters up to 50" are also available.
- Available in a variety of voltages from 208 to 660V.
- NEMA 4 for outdoor applications or explosion-proof terminal housing for hazardous locations and/or flame proof terminal housings available.
- Authorized to bear U, U2, S, H or NPT stamps, depending on the ASME code classification (Section VIII or III).

Over the Side Immersion Heaters – DX, HX, QM Series

Designed for liquid heating applications.

- Standard voltages range from 208 to 660V.
- Available in a range of wattages, from 3 to 7.5 kW for the single element unit and from 9 to 22.5 kW for the three element unit.
- Available sheath materials include copper, Incoloy®, Inconel®, nickel plated steel, and other metallic materials, and Teflon® or quartz sleeved.



Pipe Insert Heaters – MX Series

Designed to provide uniformly distributed heat to storage vessels containing high viscosity liquids such as asphalt, molasses, tar, paint, glue, wax and oils without causing charring or coking.



- Standard voltages range from 208 to 660V.
- NEMA 4 for outdoor applications or explosion-proof terminal housing for hazardous locations.
- Standard heaters use heavy duty alloy sheathed elements with either 3"-150 lb flanges or 2" NPT screwplugs with moisture resistant terminal housings.
- Optional features include packaged control systems, special wattages/voltages, built-in thermostats/limits and explosion proof housings.

Urn Heaters – TX Series

Designed for use in steam tables, coffee urns, kettles and percolators.

- Available in 120V, 208V and 240V standard voltages.
- A range of standard wattages available from 1 – 7.5 kW.
- Standard features include brass mounting flange, fully prewired copper elements and O-ring sealing gaskets.
- Optional features include "fast response low level trip", special sheath materials, and special wattages and voltages.



Air & Space Heaters



Forced Air Unit Heaters - GE Series

Designed for use in regular duty industrial and commercial space heating applications.

- Phosphate coated, epoxy painted 18-gauge steel cabinet.
- Numerous optional factory installed features to meet specific customer requirements, including optional thermostats and controls and optional wall bracket.
- 35 models, offered in 2 to 40 kW and from 208 to 600V.

Forced Air Heavy Duty Unit Heaters - GX Series

Designed for heavy duty use in industrial environments.

- Heavy duty construction reduces the downtime and maintenance costs associated with standard design heaters.
- 18 models, offered in 15 to 50 kW and from 208 to 600V.
- 40 kW and 50 kW units incorporate split loads (50%) for remotely controlled energy management systems.



Corrosion-Resistant Washdown Heaters CR1 Triton™

Designed for non-hazardous industrial locations with elevated moisture levels.

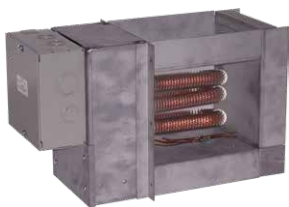
- NEMA Type 4X construction for increased safety and protection against water penetration.
- Epoxy-coated fan blade and 16 gauge stainless steel cabinet for increased corrosion resistance.
- 37 models offered in 13 – 39 kW, ranging from 208 – 600V.
- Custom configured stainless steel spiral-finned heating elements for improved heat distribution and corrosion protection.
- UL listed Type 4X for coast guard and marine applications.
- Suitable for wash bays and humid locations.
- Able to withstand water spray of up to 70 PSIG (483 kPa).



Panel & Enclosure Heaters – PH and PXFT Series

Designed to prevent condensation and freezing in control panels.

- PH heater is available in four wattages ranging from 125 to 800W and utilizes a fan to circulate air in the panel, reducing temperature stratification.
- PXFT heater is a natural convection heater, available in wattages from 50 to 600W.
- Both types have built in thermostat control.



Commercial Duct Heaters – DI & DF Series

Designed for comfort heating applications including make-up air handling units, air pre-heating, heat pump auxiliary systems and return air heating.

- Available in flanged or duct insert designs, with tubular or finned tubular elements.
- Offered in wattages up to 120 kW and from 120 to 600V.
- Higher wattages available in custom designs.

Process Duct Heaters – WX Series

Designed for installation in process ducts for heating air or other non-hazardous gases.

- Replaceable elements for easy serviceability.
- Suitable for outlet air temperatures up to 1112°F (600°C).
- Offered in 6 to 84 kW and from 208 to 600V.
- Higher wattages available in custom designs.



Infrared Radiant Heaters – OK Series

Designed for comfort heating applications.

- Can be configured with Incoloy® elements or quartz tube elements or quartz lamp to suit the application.
- Wide range of outputs, offered in 0.5 to 10 kW and from 120 to 600V.



Boilers

Hot Water Boilers – VWB & HWB Series

Designed for process and comfort heating, commercial applications, radiant floor heating, and car washes.

- Safe, quiet and reliable source of hot water.
- Offered in 150 – 5000 kW with pressure ratings up to 2500 psig.
- CSA approved, and designed and built to the latest version of the ASME code.
- Compliance to Chinese SELO Quality Requirements is also available upon request.



Steam Boilers - VSB & HSB Series

Provide process steam for commercial and industrial applications including: cleaning applications, chemical distillation, autoclaves, heating jacketed vessels, and more.

- Fully packaged systems for safe, versatile and easy to use heat sources for low or high pressure steam.
- Caloritech™ boilers have low water volumes for rapid response.
- Offered in 9 to 5000 kW with pressure ratings up to 2500 psig.
- CSA approved, and designed and built to the latest version of the ASME code.
- Compliance to Chinese SELO Quality Requirements is also available upon request.

Packaged Circulation Heaters – CWCB Series

Designed for installation in circulating systems where space is limited.

- Standard configurations include commercial swimming pool heaters, side arm domestic water heaters, commercial dishwasher booster heaters or commercial hot water furnaces for comfort or process heating.
- Offered in 6 to 60 kW with pressure ratings up to 125 psig.
- Standard features include a galvanized shell, designed to the latest version of the ASME code, inlet, outlet, and drain connections, heavy duty copper sheathed flanged elements and fully pre-wired control panel.



Replacement Boiler Flange Heaters - CX Series

Designed as replacement parts for boilers.

- Available in a range of sizes and styles to suit the requirements of different boiler units, including rectangular flanges, square flanges and round flanges.



Accessories & Controls

- Contactors
- Control Circuit Transformers
- Control Panels
- Control Sensor Accessories
- Detect-A-Fire® Units
- Digital Indicating Temperature Controls
- Electronic Indicating Controls
- Explosion-Proof Thermostats
- Flow Switches
- Heat Sinks
- High Temperature Wires
- Industrial Thermostats
- Level Control for Conductive Liquids
- Level Probes
- Pilot Lights
- Percentage Timers
- Protective Wells
- Relays
- Sight Glass Assemblies
- Sleeves
- Snap Discs
- Step Controllers
- Stuffing Boxes
- Temperature Controls
- Thermocouples
- Fenwal THERMOSWITCH®
- Thermowells
- Timers
- Thyristor Power Controls
- **x-Max**® Explosion-Proof Housings



Transit Heaters



Electric Calvane™ Cab Heaters - RCH1 Series

- Comprised of six horizontally staggered 333W Calvane™ heaters, 250 CFM centrifugal fan.
- Lightweight at 13 lbs (6.35 kg), low profile with a depth of 5 ft (152 cm).
- Rated 208V, 3 phase, 60 Hz, 2 kW.

Open Coil Cab Heaters – RCH2 Series

- Feature a speed-controlled fan, 500W open coil element and a 1000W open coil element.

Tubular Element Cab Heaters

- Single entry axial flow fan and automatic reset thermal cutout.
- Fan and elements operate on 480V while the controls function on a separate 120V feed.

Overhead HVAC Heaters - DFF & DIF Series

- Optional finned and non-finned tubular elements.
- Fully protected against mechanical shock, vibration or breakage.
- Completely encased resistance wire that will not sag, oxidize or deteriorate.
- Coiled alloy resistor wire is centered and permanently encased within highly compacted magnesium oxide, surrounded by a metallic sheath.



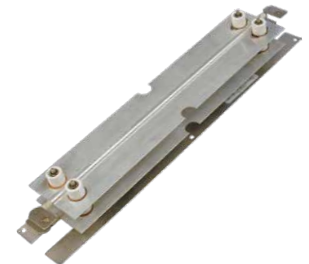
Overhead HVAC Heaters (Open Coil) – DOF Series

- Static pressure drop through open coil is very low, reducing fan horsepower requirements.
- Low element mass yields relatively small amounts of residual heat on fan shut down, reducing the heat effect on surrounding material.

Transit Car Floor Heaters (Calvane™) – FV Series

Designed with low watt density, rapid start-up and cool down periods, no magnetic noise, low pressure drop, shock and vibration resistance and can be easily isolated for high voltage applications.

- Extremely lightweight at only 0.2 to 0.3 lbs per foot.
- Lengths available up to 120"; two standard widths of 2.25" and 3.25" available.
- For applications with supply voltages in the 600V nominal range, ceramic stand-off insulator systems are available.



Threshold Heaters (CALBAR™)

Designed using the unique CALBAR™ heating element.

- Hermetically sealed.
- Custom design and mounting hardware to adapt to existing thresholds.
- Can be factory-installed in threshold extrusions.

Transit Car Floor Heaters (Strip) – SD Series

- Available in aluminized steel with stainless steel sheath.
- Wattages range from 100W to 1250W for the aluminized steel sheath and 100 to 1500W for the stainless steel sheath, depending on the size of the heater.
- Overall length limit of 42.5"; effective length limit of 39".
- Rated at 120V or 240V, depending on size.
- High-voltage models rated up to 600V when secondary insulators are used.





HEATING SYSTEMS

As a leader in advanced heating and filtration solutions with facilities across North America, Thermon Heating Systems manufactures five of the top brands in industrial heating in addition to a comprehensive line of engineered industrial filtration products including:

Cata-Dyne™ Explosion-Proof Gas Catalytic Heaters

Cata-Dyne™ is the industry standard in infrared gas catalytic heaters, enclosures, pipeline systems and accessories. Customers across a wide range of industries rely on Cata-Dyne™ to supply them with safe, reliable, efficient and versatile infrared catalytic heating equipment for a variety of applications in both hazardous and non-hazardous environments.

Ruffneck™ is renowned for its rugged, reliable and versatile heavy-duty explosion-proof heaters, heating systems and heating accessories. Ruffneck™ has a long and proud history of supplying quality heating products for the harshest industrial environments to a worldwide customer base for over 30 years. Ruffneck™ is well-known in the industry for its “ship the heat in a week” policy, where 95% of all standard orders are shipped within one week of order placement.

Ruffneck™ Heaters for the Harshest Environments

3L Filters™ Engineered Filtration Systems

3L Filters™ has satisfied the most demanding industrial filtration requirements for over 40 years. A broad range of standard and custom products includes liquid filters, strainers, separators, pressure vessels, and engineered products and systems. 3L Filters™ has special expertise for nuclear, petrochemical, water treatment and environmental applications.

Caloritech™ electric heaters, heating elements and heating accessories are well-known in the industry for their quality, reliability, performance and versatility. In addition to standard “off the shelf” industrial heaters and heating systems components, Caloritech™ also offers engineered heating solutions custom designed, manufactured and tested to satisfy customer specifications. No matter what your application or environment, Caloritech™ has a solution to fit your heating needs.

Caloritech™ Engineered Electric Heat

Fastrax™ Track and Switch Heaters

Fastrax® has manufactured railroad track and switch heating since 1995. Fastrax® engineers complete heating packages for the rail industry. Fastrax® track and switch heaters are designed to provide the most efficient heat transfer on rail equipment and components for the coldest environments. In addition to heaters, Fastrax® manufactures fully automatic energy saving controls to complete the rail heating system.

Norseman™ is the most technologically advanced line of explosion-proof electric air heaters and heating accessories, including both forced air heaters and natural convection heaters, as well as unit heaters, panel heaters and thermostats. Norseman™ offers innovative, low maintenance solutions for a wide range of applications in a variety of industrial and commercial environments. Custom engineered heaters or heating systems are available for specialized applications.

Norseman™ Electric Explosion-Proof Heaters

Visit www.thermon.com for detailed product information.

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