

**KELTECH'S LIGHT INDUSTRIAL  
TANKLESS WATER HEATING SOLUTIONS**

*Precise Temperature Control.*

*Energy Efficient.*

*Reliable Performance.*

**TABLE OF CONTENTS**

3 Custom Built to Meet Your Specs

Precise Temperature Control

4 Applications That Light Industrial Heaters Have Been Used For

Light Industrial Process Heaters Overview

Compact

Easy to Install

Safe

Wired to 480 or 600 Delta

Built to Last

Energy Efficient

Easy to Maintain

5 The Keltech Energy Advantage

Energy Savings

Volume

Save Energy From Day One

No Storage Tank Requirements

6 One Size Fits All

Perfect for Compact Spaces

Determining Your Sizing Requirements

7 Safety First

Safety Features

Digital Temperature Control

## **TABLE OF CONTENTS CONTINUED**

### 8 Standard Features

- Incoloy 800 Sheathed Heating Elements
- NEMA 4 Enclosures
- Precise Temperature Range and Flow Rate
- Fan-Cooled or Water-Cooled Solid-State Relay Switching
- Premium Materials

### 9 Standard Features continued

- Reliable Performance and Minimal Maintenance
- Easy to Install
- Minimum Pressure Drop
- Activation Requirements

### 10 Optional Features

### 11 Optional Features continued

- High/Low Temperature Alarms (Audible and Visible)
- Ground Fault
- Freeze Protection Package
- NEMA 4 Water Tight Enclosures
- NEMA 4X Water Tight Corrosion Resistant Enclosures
- High Temperature Option Heaters

### 12 Explosion Proof Purge System

## **CUSTOM BUILT TO MEET YOUR SPECS**

Keltech custom built tankless water heaters can accomplish most light industrial fluid heating applications. We custom build fluid heating solutions using quality control systems and premium materials to meet your specific needs. Keltech light industrial water heating solutions range in size and capacity from 18 kilowatts to 50 kilowatts at either 480 or 600 volts and at various amperages.

Whether you need hot water for utility use, heated water for hydronic or radiant heating, hot water for a heat exchanger for use with other liquids, or are directly heating non-flammable liquids, Keltech can custom build an energy efficient light industrial process heater that provides precise temperature control at the flow rate you need.

## **PRECISE TEMPERATURE CONTROL**

Keltech's tankless water heaters provide precise temperature control ( $\pm 1^{\circ}\text{F}$  or  $.56^{\circ}\text{C}$ ) for light industrial fluid process heating applications. Designed to exacting specifications and tested to ensure precise temperature delivery and specific flow rates, Keltech tankless water heating solutions perform reliably even in the most exacting environments.



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**KELTECH LIGHT INDUSTRIAL WATER HEATING SOLUTIONS HAVE BEEN USED FOR:**

- Emergency eyewash systems
- Light industrial washing processes
- Scientific laboratories
- Chemical heating
- Light industrial fluid heating
- Radiant heating
- Hot water for heat exchangers
- Hot water for utility use
- Booster heating

**THE KELTECH LIGHT INDUSTRIAL PROCESS HEATERS ARE:**

- *Compact* – heaters do not require large floor space and can be wall mounted
- *Easy to Install* – Just add water and power. All you need is access to one electrical connection and a cold water line
- *Safe* – includes redundant control and safety features
- *Wired to 480 or 600 Delta* – does not require a neutral
- *Built to Last* – All Keltech tankless water heating solutions feature rugged industrial components
- *Energy Efficient* – perform on-demand requiring power and water only when needed
- *Easy to Maintain* – Keltech light industrial process heaters require minimal maintenance



*The C1N and C2N models perform on-demand and can accomplish most light industrial fluid heating applications that require water flow at less than 10 GPM. Large internal passageways minimize pressure drop.*

## **THE KELTECH ENERGY ADVANTAGE**

Keltech's on-demand light industrial process heaters typically have two advantages over boilers:

### *1. Energy Savings*

Unlike boilers, Keltech's heaters are tankless and heat water only when it's needed. There's no wasted energy. The energy savings often produces a return on investment within a few months.

### *2. Volume*

Unlike hot water tank storage systems, Keltech's heaters provide continuous capacity. The flow of hot water can be unlimited.

## **SAVE ENERGY FROM DAY ONE**

Keltech water heating solutions perform on-demand. Because they are tankless, they only draw electricity and water when needed. Since there are no utilities to pay until the heater is used, utility costs are minimized. There's no need to keep a 300 gallon tank heated 24 hours a day, 365 days a year. There's also no need for expensive re-circulation loops.

Keltech's light industrial heaters have an infinitely modulating temperature control allowing for use of only the energy needed to maintain the set point temperature. There is no need to overheat the water and then add cold water to reach the desired temperature. Your heater will heat water to the exact temperature needed when you need it. This eliminates the cost and potential problems associated mixing valves.

## **NO STORAGE TANK REQUIREMENTS**

The heater is tankless. Storage tanks consume space and energy. Because the heater is tankless, there is no power draw without water demand. Since the heater operates on-demand there are no standby losses and no recovery time is required.



*Safety only circuits  
monitor for over  
temperature  
conditions.*

## ONE SIZE FITS ALL

Keltech's light industrial tankless water heaters are a scaled back version of our high performance large industrial water heaters. Physically smaller, they are loaded with standard features just like their larger brethren. Built on a smaller scale with fewer bells and whistles, light industrial tankless water heaters cost less.

## PERFECT FOR COMPACT SPACES

Keltech light industrial water heater solutions are also perfect for facilities where space is limited. Wall mountable units can be placed in compact spaces where conventional heaters with comparable output cannot.

## DETERMINING YOUR SIZING REQUIREMENTS

Sizing your tankless water heater is a critical part of the purchasing process. Two factors that require careful consideration for the accurate sizing of your system are:

1. Flow rate (GPM)
2. Temperature rise ( $\Delta T$  °F)

To determine the size and kilowatt rating you need, apply this formula:  $kW = (GPM) (\Delta T \text{ } ^\circ F) (.1465)$



*Every light industrial process heater that Keltech custom designs includes a patented temperature control system.*



## **SAFETY FIRST**

### *1. Redundant Safety Features*

Keltech's light industrial heaters include multiple features guaranteed to ensure the safety of your employees and years of reliable service.

#### *Safety Only Circuits*

Internal circuit breakers monitor for over temperature conditions and ensure individual chambers do not exceed standards. Should the heater's safety circuits sense a problem prior to manual shut down, power is interrupted at a mechanical relay.

#### *High Temperature Cut-Off*

Every heater that Keltech engineers includes a separate set of circuits that monitor over temperature conditions. Should overheating occur, each sector of the heat exchanger has a dedicated thermal switch that breaks power. Normal operation cannot be resumed until the safety switch is manually reset.

### *2. Digital Temperature Control*

The LED controller displays the set point and actual temperature. The splash proof front panel is standard. The controller is preprogrammed to your specifications and automatically adjusts to maintain precise output.



*Engineered to  
exceed quality  
standards at every  
turn, Keltech  
components  
are rugged and  
designed to  
perform to your  
specs. Our tankless  
process heaters  
deliver precise,  
dependable  
performance.*

### 1. *Incoloy 800 Sheathed Heating Elements*

Low watt density Incoloy 800 sheathed heating element passages extend the life of the metal components by minimizing chemical (water or other liquids that may be heated) interaction. The heating elements are individually field replaceable.

### 2. *NEMA 4 Enclosures*

Standard for 18kW to 50kW heaters. NEMA 4 enclosures protect the heater's components from water and dust.

### 3. *Precise Temperature Range and Flow Rate*

The electronic power modulation system can control outlet water temperature to within  $\pm 1^{\circ}\text{F}$  ( $.56^{\circ}\text{C}$ ) over a wide range of flow rates. Precision temperature control make Keltech tankless water heater the preferred choice for process heating applications or an alternative to energy inefficient boiler use.

### 4. *Fan-Cooled or Water-Cooled Solid-State Relay Switching*

Fan-cooled or water-cooled solid-state relay switching controls provide an infinite variable power draw. All switching is done in a zero crossing package that precisely controls output temperature to  $\pm 1^{\circ}\text{F}$ .

### 5. *Premium Materials*

All waterways consist of high quality copper and brass construction tested to 300 PSI. Copper and brass construction extend the life of the heat exchanger.



*High quality  
copper and brass  
construction  
extend the life  
of the heat  
exchanger.*

## *Standard Features (continued)*

### *6. Perform Reliably with Minimum Maintenance*

The heater series maintenance schedule falls within the normal facilities maintenance program requirements. The best feature of Keltech's tankless water heating system is never having to open its enclosure door.

High quality copper and brass construction extend the life of the heat exchanger.

### *7. Easy to Install*

Keltech tankless water heaters can be mounted almost anywhere. Its compact design allows for wall mounting or rack mounting. Just add water and power. All you need is access to one electrical connection and a cold water line.

### *8. Minimal Pressure Drop*

Keltech tankless water heaters feature large internal passageways (minimum 3/4" inlet/outlet diameter) that minimize pressure drop.

### *9. Activation Requirements*

On-demand heaters require a minimum flow rate for activation. Water heaters come standard with 0.75 GPM activation set point. Minimum flow requirements provide maximum efficiency.



*Robust brass castings and flanges are CNC cut from solid brass blanks for precision fit.*



## OPTIONAL FEATURES

- Computer interface capabilities
- NEMA 4 watertight enclosures or NEMA 4 enclosures for protection from harsh environments
- High temperature package for operating temperatures between 160°F and 200°F
- Freeze protection package
- Explosion proof purge system available
- Integrated ground fault circuit available for protection in 10 mA to 30 mA ground fault
- High/low temperature alarm functions (audible and visible)



*Keltech's  
ground fault  
detector protects  
the electronics  
and the heat  
exchanger  
from damage.*

## HIGH/LOW TEMPERATURE ALARM

For critical process applications, the high/low temperature alarm alerts you to an over or under temperature situation. The alarm feature provides confidence that your fluids are in the defined temperature range.

## GROUND FAULT

This safety feature detects electrical leakage from external sources to protect the equipment, electronics and the heat exchanger from being damaged in the event of a power fault.

## FREEZE PROTECTION

Keltech's freeze protection option protects the heater and internal components in sub-zero conditions. It allows the unit to function at  $-23^{\circ}\text{F}$  with an 11 mph wind.

## NEMA 4

Keltech can provide NEMA 4 water tight enclosures for outdoor applications.

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water; and that will be undamaged by the external formation of ice on the enclosure.

## NEMA 4X

For harsh environments, Keltech can provide NEMA 4X water tight corrosion resistant enclosures made from stainless steel.

## HIGH TEMPERATURE HEATERS

The standard high temperature limit on heaters is  $160^{\circ}\text{F}$ . With a high temperature option, these heaters can reach and maintain settings as high as  $200^{\circ}\text{F}$  at the specified flows.

## EXPLOSION PROOF PURGE SYSTEM

For those environments that would require explosion proof protection, Keltech's light industrial water heaters in NEMA enclosures can be equipped with a purge system. Heat, moisture, dust and corrosion are eliminated by providing the enclosure with a slow but continuous flow of inert gas or dry compressed air. This process removes flammable gases or prevents the accumulation of ignitable dusts within the protected enclosure.

The type of purge system determines the classification or division the enclosure will meet. Electrical components installed in a NEMA 4 enclosure allow the system to be pressurized by clean instrument air or inert gas. This type of system conforms to Class 1, Division 2 hazardous area standards. Other class and division ratings may be available.

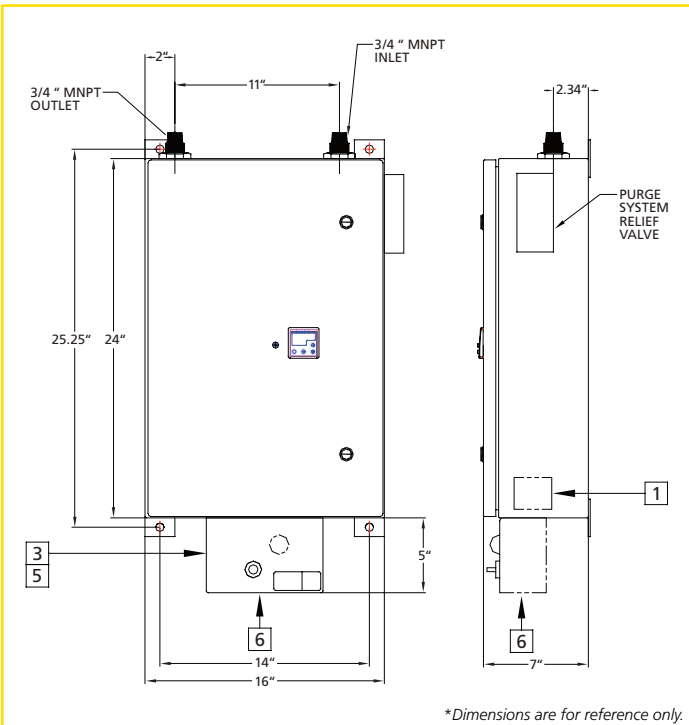
### THE PURGE SYSTEM:

- Reduces heat build-up in the enclosure
- Inhibits metal corrosion and reduces moisture buildup
- Provides continuous monitoring capabilities
- Eliminates large, heavy explosion proof enclosures

*A constant supply of inert gas or clean air will also be needed.*

### NOTES:

1. Suggested region for power entrance. Entrance hole to be provided by installer.
2. All plumbing fittings are 3/4" NPT female threaded.
3. Purge control panel Class 1 Division 2.
4. All installation egress from panel must be sealed (electrical conduit) for proper explosion proof installation.
5. Spark arrestor with calibration orifice is located behind the purge control unit and through the bottom of the enclosure.
6. Purge gas/compressed air inlet fitting here.



*\*Dimensions are for reference only.*