

- Heavy duty industrial cart options simplify moving heater to various locations
- 36 - 72 kW (122,800 - 245,600 BTUs)
- Certified Lead-Free Design
- New & Improved Pressure Drop Advantage
- Variable Temp Heat Exchanger
- NEMA 4 enclosure standard
- Independent Safeties
- Heater ETL and cETL certified to UL and CSA Standards
- Liquid-Cooled Solid State Relays
- Internal fusing (included) adds safety and permits single power connection
- Door cutoff switch
- Emergency stop button
- ASME and NB Certified Options available

### Standard Equipment

#### Keltech Portables - Tankless Water Heating Specifications

Certain Keltech, Inc. CNA Series Tankless Water Heaters can now be paired up with heavy duty industrial carts to make a portable solution for temporary or semi-permanent heating needs. The heater and cart combination (shipped separately) are designed to accommodate most heavy industrial fluid heating applications where demand is 36kW - 72kW and flow rates from 1.5 to 50 GPM are required. Standard units: activation flow  $\geq 1.5$  GPM. CNA-Series are designed for environments requiring precise temperatures to 160° as an alternative to boilers. CNA-Series units are suited to applications where 480V and 600V, 50/60 Hz 3-Phase Delta is required. The heat exchanger features o-ring seals that out last typical gasket construction. 1-1/4" NPT female inlet and outlet connections.

### Construction

#### Portable Cart

Keltech Portables feature a heavy-duty industrial cart for moving the heater into a temporary or semi-permanent location. Cart features push handle and forklift pockets to assist in moving heater from place to place. Carts are powder coated and constructed from welded steel tubing. All carts include 8" polyurethane casters.

Standard cart package includes lockable heater enclosure, tamper resistant inspection cover over control panel to prevent tampering by unauthorized personnel, cart push handle, forklift pockets, pigtail wire cable with plate and cable gland (shipped loose). Installer attaches heater to cart and provides final connections.

Deluxe cart package includes lockable heater enclosure, tamper resistant inspection cover over control panel to prevent tampering by unauthorized personnel, cart push handle, forklift pockets, Hubbell electrical connectors (shipped loose), welded tool box and truck brake to lock cart in place. Installer attaches heater to cart and provides final connections.

#### Temperature Controller

Keltech's PID Temperature Controller is more energy efficient and reliable than traditional microprocessors using staged elements. Power is infinitely variable, with no fixed inputs. The PID controller makes it possible to modulate the amount of power applied to the elements while also dispersing the required power evenly across all elements. This unique feature increases the product's life cycle.

#### Heating Element

Each heater features a heavy duty, low watt density, incoloy 800 sheathed resistive element. The Keltech design ensures greater protection, durability and resistance to scaling from hard water because water is only heated when flowing; this means sediment will not collect in the heat exchanger.

#### Solid State Relays

The liquid cooled solid state relays provide silent switching, which has a fast response and works in conjunction with the PID controller to infinitely modulate and add to the life of the heater.



Deluxe Cart Shown

#### Electrical

The CNA-Series requires only one service feed per unit. Includes internal fusing as standard. Internal fusing provides superior protection so the incoming circuit can be higher than 48 amps (NEC). Keltech protects each heating element with fusing.

#### Cabinet Enclosure

The floor-mounted standard cabinet enclosure is NEMA 4 rated and made from 14 gauge mild steel and powder coated with ANSI 61 gray, corrosive resistant paint. The optional NEMA 4X enclosures are for harsher environments and made from 16 gauge 304 stainless steel. The NEMA 4X enclosure can also be specified with 316 stainless steel (at additional price). Keltech Portable Heaters include tamper resistant latches with matching quarter-turn tools to inhibit unauthorized access.

#### Independent Safeties

The internal thermostat with auto reset high limit switch ensures that when the temperature limit is reached, the unit will power down a bank of elements; when the temperature drops back down to the set point, power is restored. The surface mounted bi-metal thermostat with manual reset acts as a fail-safe and must be manually reset before power can be restored to the elements if the temperature limit is exceeded.

### Code Compliance and Certifications



Lead-Free

Products marked with the Lead-Free logo comply with the Safe Drinking Water Act (SDWA) requirements of a weighted average of less than 0.25% lead content on wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures.



ETL listed to UL499

ETL listed to UL 50E

ETL listed to NFPA 496 (Requires EXP2CFPM Option)

cETL listed to CSA-C22.2 No. 88



Standard product selections contained within this document are third party CERTIFIED to NSF/ANSI 372 meeting the Lead-Free content requirement. Any product configured with custom options will be COMPLIANT with NSF/ANSI 372 meeting the Lead-Free content requirement.



ASME certification available. Keltech units 58kW (200,000 btu) and higher are the only electric tankless water heaters National Board certified with the HLW stamp. (Requires HLW or HLW-TE Option)

### Product Options

#### Fused Disconnect

Internal fused disconnect interlocks with enclosure door when energized, prohibiting access to a live cabinet. Select the FDS option for an additional level of safety and convenience at the heater location.

#### Ground Fault

Optional equipment protection ground fault senses leakage current to ground >1 Amp. In the event a fault is detected, this device will terminate the high voltage power supply to heating elements and disable operation of the unit. Fault status is communicated EXTERNALLY at the control interface. Personnel may also test the Ground Fault system and reset any nuisance trips without opening the cabinet.

#### ASME Heat Exchanger

Keltech offers any product above 200,000 btu equivalent (58kw+) the option to be fitted with internal plumbing certified to Section IV of the ASME Boiler and Pressure Vessel Code - an industry exclusive certification. HLW certification represents not only an approved design and method of construction, but an intensively audited construction and documentation process that concludes with a pressure test witnessed by an ASME official. Upon completion of this process, each heat exchanger is issued a unique serial number for registration in the National Board. This information is supplied with the unit via Form "HLW-6 Manufacturer Data Report" for verification and reference by local inspection officials. The HLW options also include additional features such as dry-fire protection, an auto bleed valve, stainless steel bulkheads and boiler drain valves, adding an extra level of quality and durability to Keltech heaters.

Select the HLW-TE options for deionized or mild corrosive applications requiring a HLW (ASME) Pressure Vessel. The TE2 option, which provides a Xylan Fluoropolymeric Coating, is not available with an ASME heat exchanger.

#### Other Product Options

For additional heater options and installation accessories, reference the appropriate section at the end of this document.

### Electrical Specifications for the Heater (3-Phase)



All internal fuses necessary for installation are included with the unit.

Capacity (kW)	Voltage	Maximum Amperage	Minimum AWG Wire Size
36	480	43	6
36	600	35	8
54	480	65	4
54	600	52	6
63	480	76	4
63	600	61	4
72	480	87	3
72	600	69	4

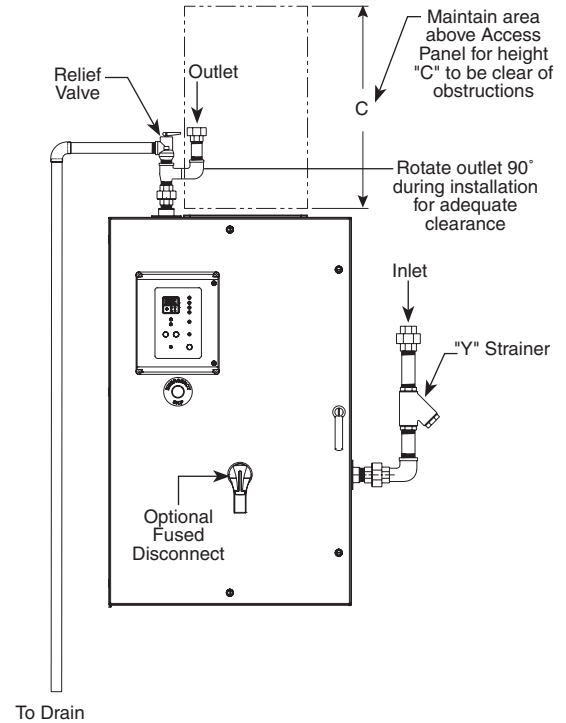
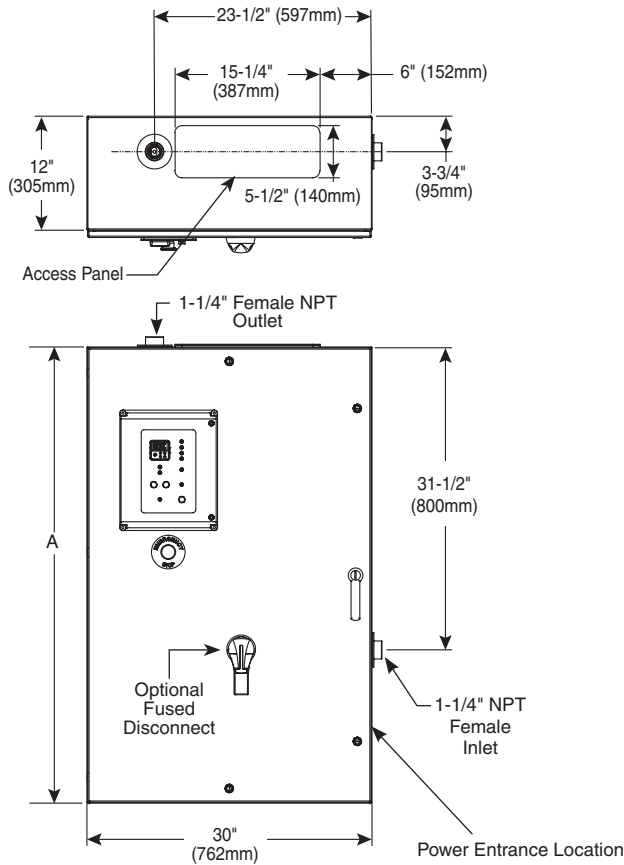
### CNA-Series Pressure Drop Advantage

GPM	1.5	2	3	4	5	6	8	10	15	20	25	30	35	40	45	50
<b>36-63 kW PSI</b>	0.0	0.0	0.1	0.2	0.2	0.3	0.6	0.9	2.0	3.6	5.5	7.9	10.8	14.0	17.6	21.7
<b>72-144 kW PSI</b>	0.0	0.0	0.1	0.2	0.3	0.4	0.8	1.2	2.6	4.7	7.3	10.4	14.2	18.5	23.3	28.7
<b>L-MIN</b>	5.7	7.6	11.3	15.1	18.9	22.7	30.2	37.8	56.7	75.6	94.5	113.4	132.5	151.2	170.1	189
<b>36-63 kW BAR</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.5	0.7	1.0	1.2	1.5
<b>72-144 kW BAR</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.6	2.0

### Portable CNA-Series - Dimensions

(mm)

Select product options shown. Other options available.



#### Suggested Installation Configuration

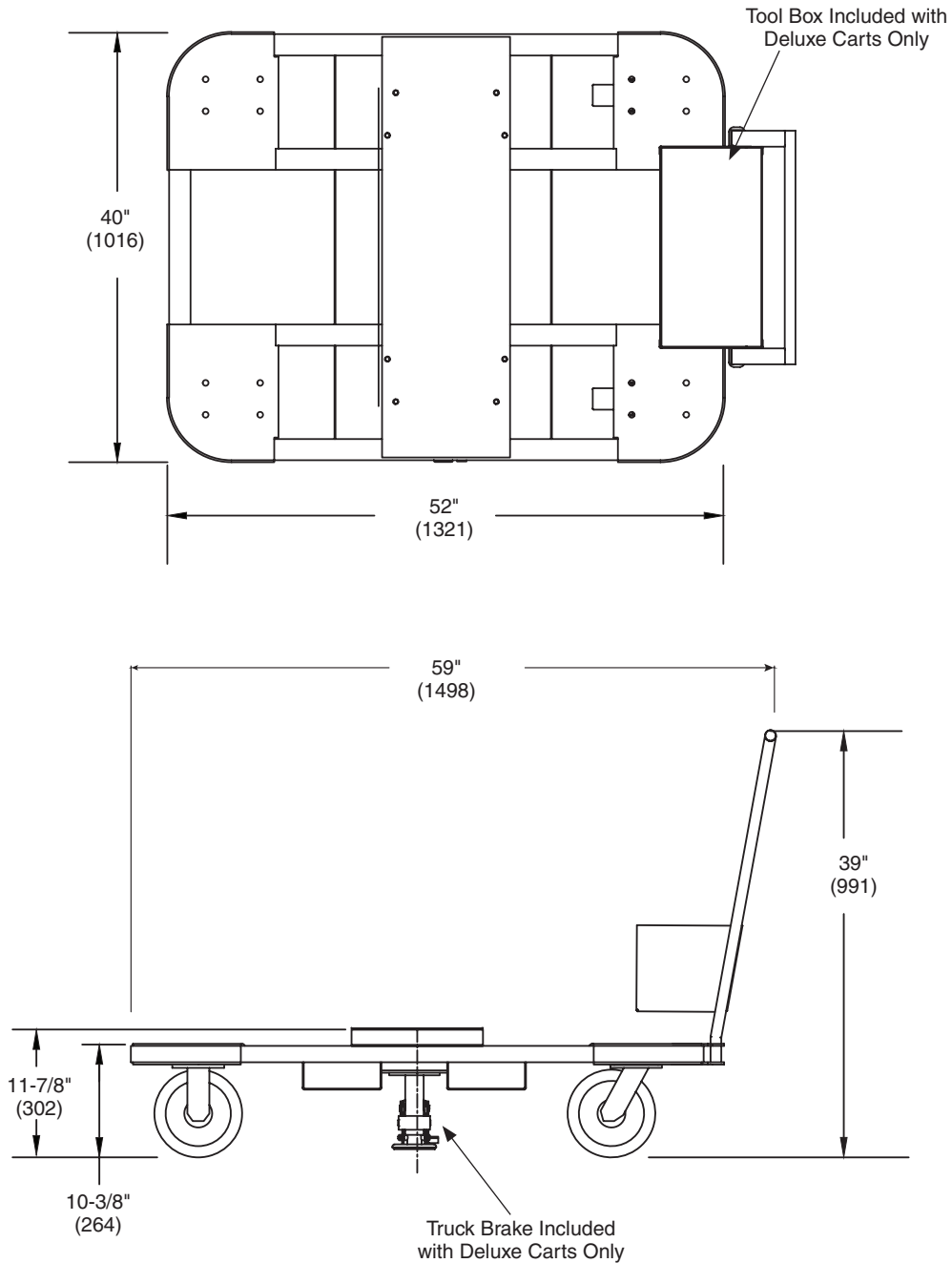
Components provided by installer unless otherwise specified. Reference the product options sections or contact your local Bradley Representative for product options.

	Dim. "A"	Dim. "C"
<b>36kW</b>	48"(1219)	36"(914)
<b>54kW</b>	48"(1219)	36"(914)
<b>63kW</b>	60"(1524)	48"(1219)
<b>72kW</b>	48"(1219)	36"(914)

**Portable CNA Series - Cart Dimensions**

**(mm)**

Deluxe cart shown with tool box and truck brake, standard cart dimensions are identical.



### kW Calculator

CNA-Series (kW): 36, 54, 63, 72

		Temperature $\Delta^{\circ}\text{F}$ ( $^{\circ}\text{C}$ )																											
GPM L-MIN		10° (6°)	15° (8°)	20° (11°)	25° (14°)	30° (17°)	35° (19°)	40° (22°)	45° (25°)	50° (28°)	55° (31°)	60° (33°)	65° (36°)	70° (39°)	75° (42°)	80° (44°)	85° (47°)	90° (50°)	95° (53°)	100° (56°)	105° (58°)	110° (61°)	115° (64°)	120° (67°)	125° (69°)	130° (72°)	135° (75°)	140° (78°)	
Flow	1.5	5.7	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	2	7.6	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	3	11.3	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	4	15.1	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	5	18.9	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	6	22.7	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	7	26.5	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	8	30.2	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	9	34.0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	10	37.8	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	12	45.4	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	15	56.7	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	20	75.6	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	25	94.5	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
	30	113.4	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
35	132.3	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36		
40	151.2	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36		
45	170.1	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36		

 ASME Certification Available



*Sizing for the proper flow rate is important. If the temperature rise requirements exceed a single CNA model, consider using multiple CNA-Series units. Please contact your Keltech Representative for additional product information.*

### How to Size a Heater

- Calculate Delta-T ( $\Delta T$ ).  
Set point temp - coldest ground water temp =  $\Delta T$        $\Delta T =$  \_\_\_\_\_
- Select kW required by using chart or formula below.  
Peak demand in GPM x  $\Delta T$  x .1465 = kW      kW = \_\_\_\_\_
- Confirm voltage and phase available on site.      Voltage and Phase = \_\_\_\_\_
- Confirm minimum flow.      Minimum Flow = \_\_\_\_\_

<b>Model</b>	
<input type="checkbox"/> <b>CNA</b> CNA-Series - Large Industrial Heater	
<b>Standard Selections</b> (Must select one from each category)	
<b>Kilowatts</b>	
<input type="checkbox"/> <b>36</b> 36 kilowatts	<input type="checkbox"/> <b>63</b> 63 kilowatts
<input type="checkbox"/> <b>54</b> 54 kilowatts	<input type="checkbox"/> <b>72</b> 72 kilowatts
<b>AC Power Supply</b>	
<input checked="" type="checkbox"/> <b>3</b> Three Phase	
<b>Voltage</b>	
<input type="checkbox"/> <b>480</b> 480 Volts	<input type="checkbox"/> <b>380</b> 380 Volts (down rated from 480V)
<input type="checkbox"/> <b>600</b> 600 Volts	<input type="checkbox"/> <b>400</b> 400 Volts (down rated from 480V)
	<input type="checkbox"/> <b>415</b> 415 Volts (down rated from 480V)
<b>System Controller</b>	
<input checked="" type="checkbox"/> <b>D</b> Digital Control	
<b>Cabinet Enclosure</b>	
<input type="checkbox"/> <b>N4</b> NEMA-4 Enclosure (standard)	
<input type="checkbox"/> <b>N4X</b> NEMA-4X Enclosure - Stainless Steel	
<input type="checkbox"/> <b>N4X316</b> NEMA-4X Enclosure - 316 Stainless Steel	

**Heaters listed above can be down rated in 380, 400 and 415 volts. Contact your local Keltech Representative for power ratio and effective kW.**

<b>Enhanced Performance Tuning</b>
Please select your type of application. Keltech will precisely "tune" your heater specifically to your application for the highest level of performance at no additional charge.
<input type="checkbox"/> <b>Process Heating</b> <input type="checkbox"/> <b>Potable</b> <input type="checkbox"/> <b>Boosting</b> <input type="checkbox"/> <b>Re-Circulating</b>

**Delta T Calculation**  
Set Point Temperature - Coldest Incoming Water Temperature = Minimum Delta T for Application

### Heater Model Number Configuration

CNA-   3   /   D   - - - - -  
kW Volts

**INSTL\_ACCESSORY** - - - - -

List applicable option codes alphabetically. Do not include Installation Accessories in configuration. Select one or two cart options below.

<b>Cart Product Options (must select one)</b>	
<input type="checkbox"/> <b>Standard</b>	Standard cart package includes lockable heater enclosure, tamper resistant inspection cover over control panel to prevent tampering by unauthorized personnel, cart push handle, forklift pockets, pigtail wire cable with plate and cable gland (shipped loose). Installer attaches heater to cart and provides final connections.
<input type="checkbox"/> <b>Deluxe</b>	Deluxe cart package includes lockable heater enclosure, tamper resistant inspection cover over control panel to prevent tampering by unauthorized personnel, cart push handle, forklift pockets, Hubbell electrical connectors (shipped loose), welded tool box and truck brake to lock cart in place. Installer attaches heater to cart and provides final connections.

<b>Heater Product Options (must select one from each category)</b>	
<input type="checkbox"/> <b>FDS*</b>	Internal Fused Disconnect
<input type="checkbox"/> <b>NONE</b>	None
<input type="checkbox"/> <b>GF</b>	Ground Fault Package
<input type="checkbox"/> <b>NONE</b>	None
<input type="checkbox"/> <b>HLW</b>	ASME Heat Exchanger with Sensor Level (63kW and Higher Only)
<input type="checkbox"/> <b>NONE</b>	None
<input type="checkbox"/> <b>T200</b>	High Temperature Package (Select for Temp Greater than 190°F)
<input type="checkbox"/> <b>T190</b>	High Temperature Package (Select for Temp Greater than 180°F)
<input type="checkbox"/> <b>T180</b>	High Temperature Package (Select for Temp Greater than 170°F)
<input type="checkbox"/> <b>T170</b>	High Temperature Package (Select for Temp Greater than 160°F)
<input type="checkbox"/> <b>NONE</b>	None
<input type="checkbox"/> <b>TE</b>	PFA Teflon® Coated Heat Exchanger with Bright Annealed Stainless Steel Elements, FDA Approved (Use for deionized water or mild corrosive fluid applications)
<input type="checkbox"/> <b>TE2**</b>	Xylan Fluoropolymeric Coated Heat Exchanger with Bright Annealed Stainless Steel Elements, FDA Approved for Food Contact (Use in deionized water applications)
<input type="checkbox"/> <b>NONE</b>	None

Teflon is a registered trademark of E. I. du Pont de Nemours and Company  
 \* Not available with CNA-723/600D  
 \*\* TE2 not available with HLW.

<b>Heater Installation Accessories</b>	
<input type="checkbox"/> <b>BSPP</b>	Stainless steel thread adapter converts NPT to BSPP
<input type="checkbox"/> <b>NONE</b>	None
<input type="checkbox"/> <b>PR</b>	Pressure and temperature relief valve
<input type="checkbox"/> <b>PRS</b>	ASME pressure relief valve, stainless steel
<input type="checkbox"/> <b>NONE</b>	None
<input type="checkbox"/> <b>YS</b>	Y-Strainer
<input type="checkbox"/> <b>YSS</b>	Y-Strainer, stainless steel
<input type="checkbox"/> <b>NONE</b>	None

**Verify ASME Code applicability for all installations 58kw (200,000 btu) and higher.**

<b>Application Attributes (MANDATORY)</b>	
Coldest ground water temperature:	_____
Minimum Flow:	_____
Maximum Flow:	_____
Set point temperature:	_____

**Keltech Tankless Water Heaters and Keltech Portable Carts are non-cancelable, non-refundable and non-returnable.**

Customer Signoff \_\_\_\_\_