

BTH ULTRA XL

Electric Boiler

Design Specifications

The **BTH ULTRA XL** line of electric boilers was developed to efficiently supply hydronic heating systems in commercial, institutional and industrial applications. The boiler can meet any voltage demand for both single-phase and three-phase currents. Its easy-to-use electronic controller provides precise temperature and power control to minimize energy costs and to optimize the boiler's performance. **BTH ULTRA XL** compact design is great for small spaces and requires minimal clearance around the unit.



I - POWER AND VOLTAGE

Boiler specifications 240V / 1 phase

BTH ULTRA XL 240V	Capacity (KW)	Nominal amperage (Amp.)	Heating Elements (240 V)	Stages	Maximum cable size (MCM) ³
40	40	166.7	8 x 5 kW	4	350
44	44	183.3	4 x 5 kW 4 x 6 kW	4	350
48	48	200	8 x 6 kW	4	350

Boiler specifications 480V / 3 phases

BTH ULTRA XL 480V	Capacity (KW)	Nominal amperage (Amp.)	Heating Elements (277 V)	Stages	Maximum cable size (MCM) ³
40	40	48.1	10 x 3 kW 2 x 5 kW	4	2/0
48	48	57.7	6 x 3 kW 6 x 5 kW	4	2/0
60	60	72.2	12 x 5 kW	4	2/0
72	72	86.6	12 x 6 kW	4	2/0

Boiler specifications 600V / 3 phases

BTH ULTRA XL 600V	Capacity (KW)	Nominal amperage (Amp.)	Heating Elements (347 V)	Stages	Maximum cable size (MCM) ³
40	40	38.5	10 x 3 kW 2 x 5 kW	4	2/0
48	48	46.2	6 x 3 kW 6 x 5 kW	4	2/0
60	60	57.7	12 x 5 kW	4	2/0
72	72	69.3	12 x 6 kW	4	2/0

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II – CONFIGURATION AND DESCRIPTION

1. CONTROLLER

The boiler will be operated by the T2 UltraSmart® Smart controller with the following capabilities:

- The controller is accurate, easily-configured and has a rear-lit display
- Pre-set configurations based on the heating distribution system used.
- Target temperature modulation via the outdoor temperature sensor
- Ability to purge the pump when the system is not operating.
- The controller's displays the unit's operating status and the following information at a glance :
 - Heat demand
 - Target temperature
 - Outlet temperature
 - Indication of what stages are active
 - Operating mode: electric, auxiliary or dual-energy
 - "Boost" mode in operation
 - "Automatic heating shut down": The boiler shuts down when the outdoor temperature is high
 - Current display units (°C/°F)

2. TEMPERATURE ADJUSTMENT

- Adjustable set point temperature ranges from 50°F to 190°F (10°C to 87°C)
- There are two different ways to control the set point temperature:
 1. Fixed set point temperature
 2. Set point temperature modulation via the outdoor temperature sensor
- Exterior temperature sensor included
- "Boost" mode to automatically increase the temperature when demand persists
- Automatic heat shut down when the outdoor temperature is high. Adjustable between 0°F to 105°F (-17°C to 40°C)

3. ELECTRIC CIRCUIT

SINGLE PHASE, 60HZ

- The electrical connection must be 2-wire cable with ground.
 - A neutral wire is necessary if the pump is to be controlled by the boiler.

THREE-PHASE, 60HZ

- The electrical connection must be 3-wire cable with ground.

SINGLE PHASE, 60HZ & THREE-PHASE, 60HZ

- The heating elements will be square flange immersion type.
- The boiler will be equipped with two high temperature limit controls, the first will be an automatic reset and the second will be a manual reset type.
- Electrical control circuits will be equipped with fuses to protect the low-voltage circuits.
- Electrical circuits will be equipped with fuses or breakers to protect the high-voltage circuits.
- A low water level control with an automatic reset will shut down the boiler when the water level is low and includes a test button and light indicators.
- A contact to activate an auxiliary boiler as a backup or in dual-energy mode

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III – IDENTIFICATION

BTH ULTRA XL 2.0 – KW/VOLTAGE

Example:

BTH ULTRA XL 2.0 – 48KW/240V

BTH ULTRA XL 2.0 – 72KW/600V

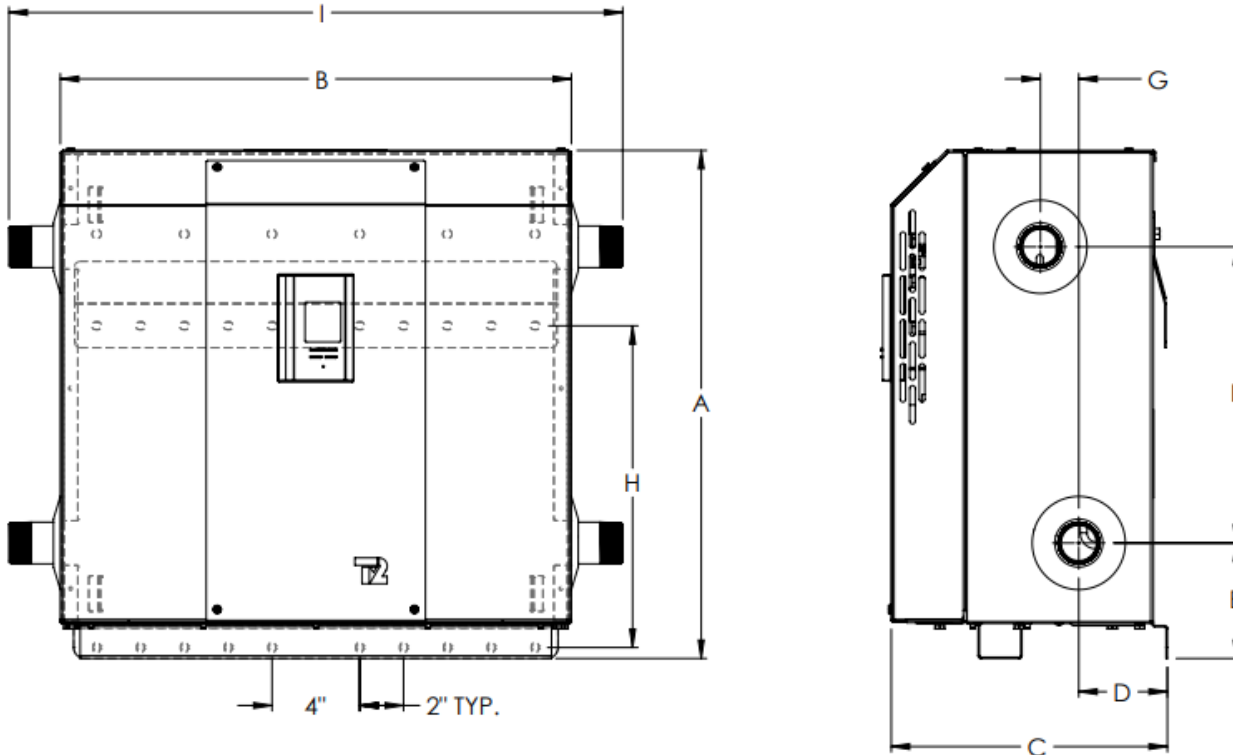
IV – PRESSURE VESSEL

The tank will be made of steel according to CSA B-51-14 standards and will bear a Canadian Registration Number (CRN) and an “H” seal certifying that the tank’s construction conforms to the standards of Section IV of the ASME Boiler and Pressure Vessel code. The tank will have a maximum operating pressure of 30psi (207kPa) and will hold 8 US gallons (30 liters) of water. It will undergo a 60 psi (414 kPa) ASME-compliant hydrostatic test.

The boiler will be installed directly on the ground and will be equipped with four (4) 1 ½” NPT M connections located on the sides of the tank to enable a multi-position installation and facilitate connection. There are 12 openings to install the square flange elements. The tank will be shipped from the factory with a ¾” ball drain valve and an ASME-compliant safety valve with a 30 psi (207 kPa) trigger point.

V - CABINET

The steel cabinet’s outer wall is coated with a layer of baked enamel. The housing is designed to reduce space while facilitating access to the components. The front door provides access to the power and low-voltage control components. The top cover provides access to the electric components. There is a 2” (50 mm) thick fibreglass insulating sheath.



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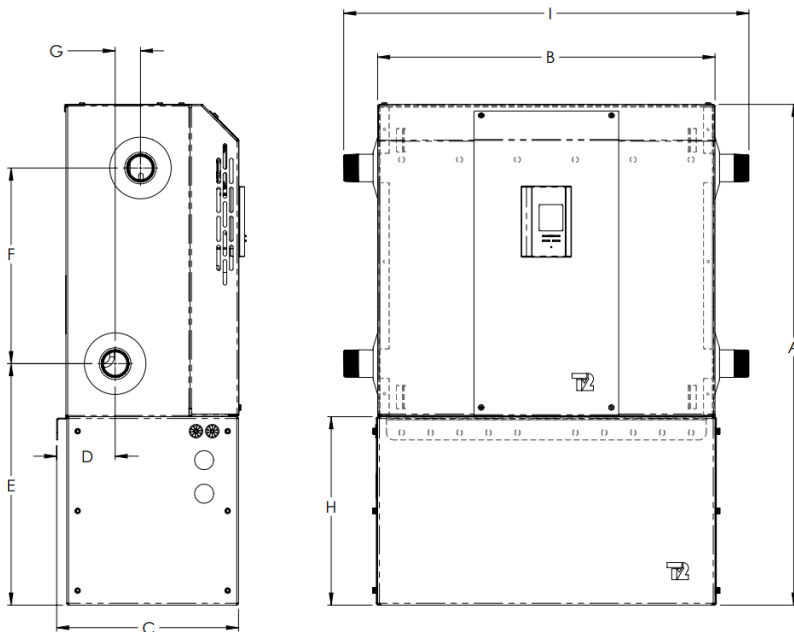
Connections	
Inlet (return)	1 ½ " NPT Male
Outlet (supply)	1 ½ " NPT Male
Pressure relief valve	1 ½ " MPT reduced to 3/4 " FPT
Drain valve	1 ½ " MPT reduced to 3/4 " FPT
Shipping weight	180 lbs

Item	Dimension (inches)
A	23 3/16
B	23 5/16
C	12 5/8
D	4 1/16
E	5 1/4
F	13 1/2
G	1 3/4
H	14 5/8
I	28

VI - AVAILABLE OPTIONS

FLOOR STAND:

The **BTH ULTRA XL** Electric Boiler can be ordered with a floor stand. This floor stand is built with robust steel and allows for an easy on-site assembly.



Item	Dimension (inches)
A	34 9/16
B	23 5/16
C	12 5/8
D	4 1/16
E	16 11/16
F	13 1/2
G	1 3/4
H	13
I	28

VII - GARANTIE

The boiler's heating element is covered by a 10-year limited warranty for closed-circuit heating applications. Parts and accessories have a 2-year warranty. The boiler must be tested, certified and bear the CSA Canada and US logos according to CSA C22.2 No. 165:17 and UL834 standards.

Thermo 2000 Inc. reserves the right to modify, at any time without notice, the colours, components, materials, design specifications, or models that are described in this document. Contact a Thermo 2000 representative if you wish to confirm that information stated in this document is still up to date.

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