

# **Electric Tankless Tepid Water Heater for Safety System**

Provides tepid water for emergency fixtures available up to 162 kW in all three phase voltages

Compact wall mounted electric tankless water heater that is 98% + efficient and easy to install and operate

Instantaneous design reduces stand-by heat loss and significantly lowers operating costs

**Engineered for your specific application** to ensure reliable operation

- NEMA 4 construction standard
- Heavy duty construction with high grade materials to ensure long operating life
- Factory packaged heater provides trouble-free installation and operation
- Wide selection of sizes to meet the needs of even the most demanding application



#### Tankless water heater for tepid water delivery

The Hubbell Tankless ETX electric water heater is designed to meet the requirements of ANSI/ISEA Z358.1-2014 for tepid water delivery to an emergency drench system in a commercial or industrial application. The Hubbell ETX is extremely efficient, takes up minimal space, and reduces operating costs in even the most demanding and critical applications. The digital controller allows the user to keep a set point tempurature of 85° and safeguards against the water temperature going above 90°.

#### Over 100 years of water heating expertise

Hubbell water heaters are the right choice for your commercial and industrial applications. We have water heating solutions for most energy sources with storage capacities from 1-10,000 gallons all designed, engineered, and manufactured for reliability and longevity coupled with unparalleled support and service.











## **Safety Standards**

#### OSHA 29 CFR 1910.151<sup>©</sup> Requirements

When the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

#### ANSI/ISEA Z358.1-2014 Standard

This standard establishes universal minimum performance and use requirements for eyewash and drench shower equipment used for the treatment of the eyes, face, and body of a person who has been exposed to hazardous materials and chemicals. Delivered flushing fluid temperature in an emergency system should be tepid. The standard defines a tepid water range of 60°–100°F. This standard also establishes minimum flow requirements at 30–90 PSI and use requirements for eyewash and shower equipment for the emergency treatment of the eyes or body of a person who has been exposed to injurious materials.

- The shower must have a minimum of 20 GPM at 30 psi for 15 minutes of controlled flow
- The eyewash must have a minimum of o.4 GPM at 30 psi for 15 minutes of controlled flow
- The eye/face wash must have a minimum of 3.0 GPM at 30 psi for 15 minutes of controlled flow
- Units must meet all individual performance requirements when all components are operated simultaneously



### **Standard Specifications**

| Orientation                 | W-II Mtd                          |
|-----------------------------|-----------------------------------|
| Orientation                 | Wall Mounted                      |
| Voltages                    | 208–600 Volt, 50/60 Hz            |
| Phases                      | 1Ф or 3Ф                          |
| kW Range                    | 8kW-162kW                         |
| Power Factor                | 0.999                             |
| Thermal Efficiency          | 98% +                             |
| Inlet / Outlet Size         | 2 & 3 element 8–27 kW, 3/4" sweat |
|                             | 6 element 24–54 kW, 1" sweat      |
| Min/Max Flow                |                                   |
| 2 & 3 element               | 0.2 GPM Min, 8.0 GPM Max          |
| 6 element                   | 0.5 GPM Min, 40 GPM Max           |
| Design WP                   | 150 psi                           |
| Design TP                   | 300 psi                           |
| Elements                    | Incoloy 800                       |
| Standby Power               | < 3 Watts                         |
| Heating Chamber<br>Warranty | 5 Year                            |
| Electrical Warranty         | 1 Year                            |
| Enclosure                   | NEMA 4 enclosure suitable         |
|                             | for wet applications              |
| Approvals                   | For ASME, see model ETXA          |

## **Recovery Rate Formulas**

**Step 1:** Solve for the unknown using the formulas below.

#### kW Requirement:

GPH x \_\_\_\_\_° $F\Delta T \times 0.00244 = kW$ 

#### **Temperature Rise:**

 $kW \times 410 \div _{---} \circ F\Delta T = GPH$ 

#### Flow Rate:

 $kW \times 410 \div GPH = {}^{\circ}F\Delta T$ 

**Step 2:** Choose the Tankless model with the kW rating which meets the peak demand (GPM) and required temperature rise ( ${}^{\circ}F\Delta T$ ) for your application.

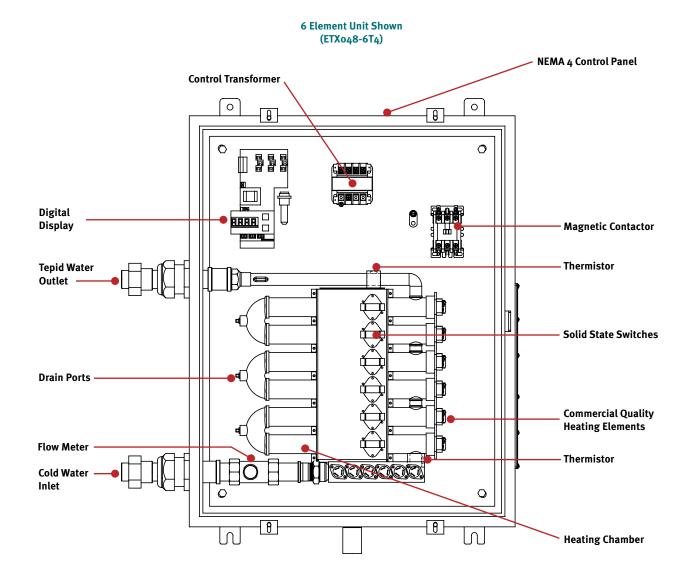
**Step 3:** Choose the voltage and phase power supply available. Note the total amperage draw of the unit and verify availability.



### Inside the Tankless ETX

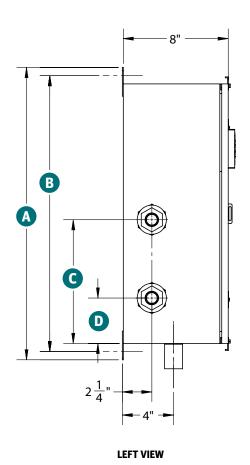
The Hubbell Tankless HX/TX electric water heater contains high powered heating elements that heat water only when there is demand for hot it. This data is continuously transmitted so the electronic temperature controller can constantly calculate the precise amount of power (kW) needed to achieve the desired temperature. A zero cross

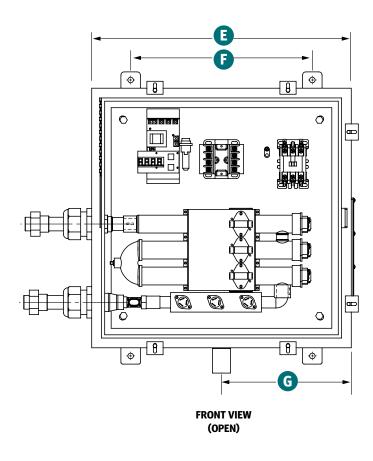
over firing signal is sent to the fast acting TRIACs in order to modulate the heating elements to the precise level needed to meet demand. The Hubbell Tankless water heater uses only as much power as is needed, while delivering accurate and consistent hot water temperature.





# **Dimensions** Sample dimensions are for an ETXo18-3T4





8 - 54 kW Models (2, 3 and 6 Element) Dimensional Data

|           |        | Dimensional Data (inches) |       |       |     |     |     |  |  |  |
|-----------|--------|---------------------------|-------|-------|-----|-----|-----|--|--|--|
|           | "A"    | "B"                       | "C"   | "D"   | "E" | "F" | "G" |  |  |  |
| 2 Element | 22-1/2 | 14                        | 9-1/2 | 3-1/2 | 20  | 14  | 10  |  |  |  |
| 3 Element | 22-1/2 | 21-1/4                    | 9-1/2 | 3-1/2 | 20  | 14  | 10  |  |  |  |
| 6 Element | 33-1/4 | 21-1/4                    | 14    | 4     | 24  | 18  | 12  |  |  |  |

|           | Pressure Drop | Dry Weight | Wet Weight | Shipping Weight |
|-----------|---------------|------------|------------|-----------------|
| 3 Element | 14            | 45 lbs.    | 45.5 lbs.  | 145 lbs.        |
| 6 Element | 16            | 73 lbs.    | 74 lbs.    | 175 lbs.        |



### **Technical Features**

#### **Temperature Controller**

A sophisticated electronic temperature controller with LED digital display provides the user interface. The temperature controller processes all flow and temperature data and calculates the precise amount of power needed to meet demand.

| Operator Control       | Operator Control Capabilities   |  |  |  |  |  |
|------------------------|---|--|--|--|--|--|
| Power Limiting         | This feature allows the user to limit<br>the kW rating of the unit by a specific<br>percentage and effectively lower the<br>total amp draw of the unit.   |  |  |  |  |  |
| Diagnostics            | Display inlet and outlet temperatures, flow rate and error codes to assist in troubleshooting.  |  |  |  |  |  |
| Cost Calculator        | Determine the exact cost of operating the heater. Input your cost per kW·Hr and the controller displays total kW·HRs consumed, total cost of operation, and total hot water usage (shown in gallons or liters).                 |  |  |  |  |  |
| Temperature<br>Control | Set the digital display to the desired water temperature in °F or °C. Fully adjustable in 1° increments from 32–194°F (0–90°C). A user adjustable +/– 3° calibration feature provides additional control for superior accuracy. |  |  |  |  |  |

#### **Full Heater Modulation**

Each heating element is switched on/off using a fast acting solid state TRIAC with zero cross over firing control. This switching action provides full modulation of each heating element, ensuring that the precise amount of heat is added to meet demand. To improve operating efficiency and component longevity, each triac is mounted to a heat sink located on the incoming supply piping so that heat generated by the triac during the switching process is dissipated into the water.

#### **Proper Power Integrity**

All Hubbell Tankless water heaters, including all 3 phase models, are engineered to operate as a balanced load and operate at 0.999 Power Factor. All Hubbell 3 phase models are designed for 3 wire (3 live, 1 ground) and 4 wire power systems and draw equal current across

all conductors to maintain the power integrity of the users electrical system. Hubbell does not recommend the use of heaters that operate as an unbalanced load. All load switching in Hubbell tankless models is performed as zero cross over, eliminating phase angle firing interference and associated EMI issues.

#### **Full Resource Staging**

The Hubbell Tankless control system ensures that usage is equalized across all heating circuits. To achieve this, once the controller has calculated the precise amount of kW required, all circuits are energized proportionally, independently, and then time staggered between circuits. This full resource staging reduces EMI output, increases component longevity, and provides highly accurate and consistent hot water temperatures. For three phase models, all circuits are fully modulated and synchronized to operate as a balanced load.

#### **BACnet Module**

The Hubbell BACnet interface unit implements BACnet MS/TP protocol. The device comes from the factory ready to be operated. The unit can be reconfigured easily with a USB cable and the BACnet Network Utility program located on the Hubbell web page. The BACnet includes features such as set temperature, power limiting, power setting, temperature in and out, flow rate, flowmeter error and leak detections. Note that internet protocol is not supported.

#### **Building Management Integration**

**Remote Control:** Ability to remotely enable or inhibit the heating operation of the unit using one of the following two methods:

- 1. Customer supplied 24VDC signal is user configured for either Inhibit Mode or Normal Operation Mode.
- 2. Customer supplied volt free contact is user configured for either Inhibit Mode or Normal Operation Mode.

**Priority Control:** An integrated SPDT potential free dry contact (NO/NC 10A @ 240VAC) energizes when the unit is heating and de-energizes when not heating. This feature is useful when it is desirable to give the water heater priority over another electrical load to ensure that both are not operational at the same time.



## **kW** and Amperage Selection Charts

#### 2 Element

(Amperage shown in chart below indicates available models)

|        | 2 Element        |     |  |  |  |  |
|--------|------------------|-----|--|--|--|--|
| kW     | 1 Phase Voltages |     |  |  |  |  |
| Rating | 208              | 240 |  |  |  |  |
| 2      | 10               |     |  |  |  |  |
| 7      | 34               | 29  |  |  |  |  |
| 8      | 38               | 33  |  |  |  |  |
| 11     |                  | 46  |  |  |  |  |
| 12     | 58               |     |  |  |  |  |
| 14     | 67               | 58  |  |  |  |  |
| 16     |                  | 67  |  |  |  |  |
| 18     |                  | 75  |  |  |  |  |

#### 3 Element

(Amperage shown in chart below indicates available models)

|        |         |          | 3 Elen | 3 Element |     |     |  |  |
|--------|---------|----------|--------|-----------|-----|-----|--|--|
| kW     | 1 Phase | Voltages |        |           |     |     |  |  |
| Rating | 208     | 240      | 208    | 240       | 480 | 600 |  |  |
| 8      |         |          |        |           | 10  |     |  |  |
| 11     |         |          | 31     |           |     |     |  |  |
| 12     |         | 50       | 33     |           | 14  |     |  |  |
| 14     |         |          |        | 34        |     |     |  |  |
| 16     | 77      |          | 44     | 39        |     |     |  |  |
| 18     | 87      |          | 50     |           | 22  |     |  |  |
| 20     | 96      |          | 56     |           |     |     |  |  |
| 21     |         | 88       |        | 51        | 25  | 20  |  |  |
| 24     |         | 100      |        | 58        | 29  | 23  |  |  |
| 27     |         | 113      |        | 65        | 33  | 26  |  |  |

### **6 Element**

(Amperage shown in chart below indicates available models)

|        | 6 Element |          |     |                  |     |     |  |  |  |
|--------|-----------|----------|-----|------------------|-----|-----|--|--|--|
| kW     | 1 Phase   | Voltages |     | 3 Phase Voltages |     |     |  |  |  |
| Rating | 208       | 240      | 208 | 240              | 480 | 600 |  |  |  |
| 24     | 115       |          | 67  |                  |     |     |  |  |  |
| 31     | 149       |          | 86  |                  |     |     |  |  |  |
| 33     |           | 138      |     | 79               |     |     |  |  |  |
| 35     |           |          |     |                  |     | 34  |  |  |  |
| 36     | 173       |          | 100 | 87               | 43  |     |  |  |  |
| 40     | 192       |          | 111 |                  |     | 39  |  |  |  |
| 42     |           | 175      |     | 101              | 51  | 40  |  |  |  |
| 48     | 231       | 200      | 133 | 116              | 58  | 46  |  |  |  |
| 50     |           |          |     |                  |     | 48  |  |  |  |
| 54     |           | 225      |     | 130              | 65  | 52  |  |  |  |

**Note:** Alternate voltages including 277, 380, 415, 440 and 575 volt available. Please consult factory for exact kW availability in these voltages.





# **Heating Capacity**

|              |         |         | Не      | ating Canahi | lity in GPM a | t F° Tempera | iture Rise (°F | AT)      |          |          |
|--------------|---------|---------|---------|--------------|---------------|--------------|----------------|----------|----------|----------|
| kW<br>Rating | 20°F ΔΤ | 30°F ΔT | 40°F ΔT | 60°F ∆T      | 70°F ΔT       | 80°F ΔT      | 100°F ΔΤ       | 110°F ΔΤ | 120°F ΔΤ | 140°F ΔΤ |
| 8            | 2.73    | 1.82    | 1.36    | 0.91         | 0.78          | 0.68         | 0.55           | 0.50     | 0.45     | 0.39     |
| 11           | 3.75    | 2.50    | 1.88    | 1.25         | 1.07          | 0.94         | 0.75           | 0.68     | 0.63     | 0.54     |
| 12           | 4.09    | 2.73    | 2.05    | 1.36         | 1.17          | 1.02         | 0.82           | 0.74     | 0.68     | 0.58     |
| 14           | 4.78    | 3.18    | 2.39    | 1.59         | 1.36          | 1.19         | 0.96           | 0.87     | 0.80     | 0.68     |
| 16           | 5.46    | 3.64    | 2.73    | 1.82         | 1.56          | 1.36         | 1.09           | 0.99     | 0.91     | 0.78     |
| 18           | 6.14    | 4.09    | 3.07    | 2.05         | 1.75          | 1.54         | 1.23           | 1.12     | 1.02     | 0.88     |
| 20           | 6.82    | 4.55    | 3.41    | 2.27         | 1.95          | 1.71         | 1.36           | 1.24     | 1.14     | 0.97     |
| 21           | 7.17    | 4.78    | 3.58    | 2.39         | 2.05          | 1.79         | 1.43           | 1.30     | 1.19     | 1.02     |
| 24           | 8.19    | 5.46    | 4.09    | 2.73         | 2.34          | 2.05         | 1.64           | 1.49     | 1.36     | 1.17     |
| 27           | 9.21    | 6.14    | 4.61    | 3.07         | 3.63          | 2.30         | 1.84           | 1.67     | 1.54     | 1.32     |
| 31           | 10.58   | 7.05    | 5.29    | 3.53         | 3.02          | 2.64         | 2.12           | 1.92     | 1.76     | 1.51     |
| 33           | 11.26   | 7.51    | 5.63    | 3.75         | 3.22          | 2.81         | 2.25           | 2.05     | 1.88     | 1.61     |
| 36           | 12.28   | 8.19    | 6.14    | 4.09         | 3.51          | 3.07         | 2.46           | 2.23     | 2.05     | 1.75     |
| 40           | 13.65   | 9.10    | 6.82    | 4.55         | 3.90          | 3.41         | 2.73           | 2.48     | 2.27     | 1.95     |
| 42           | 14.33   | 9.55    | 7.17    | 4.78         | 4.09          | 3.58         | 2.87           | 2.61     | 2.39     | 2.05     |
| 48           | 16.38   | 10.92   | 8.19    | 5.46         | 4.68          | 4.09         | 3.28           | 2.98     | 2.73     | 2.34     |
| 54           | 18.42   | 12.28   | 9.21    | 6.14         | 5.26          | 4.61         | 3.68           | 3.35     | 3.07     | 2.63     |

**Notes**: Alternate voltages including 277, 380, 415, 440 and 575 volt available. Please consult factory for exact kW availability in these voltages.





## **Tankless ETX Model Number Designation**

|       | See page  | 6 for available kW and heati  |                   |                                       |
|-------|-----------|-------------------------------|-------------------|---------------------------------------|
| MODEL | kW RATING | NUMBER OF HEATING<br>ELEMENTS | VOLTAGE / PHASE   | OPTIONAL EQUIPMENT                    |
| ETX   | 8 – 54    | 2                             | <b>RS</b> = 208/1 | Write/type optional equipment code    |
|       |           | 3                             | <b>S</b> = 240/1  | in the gray box below in alphabetical |
|       |           | 6                             | <b>R</b> = 208/3  | order. For multiple options separate  |
|       |           |                               | <b>T</b> = 240/3  | codes with a dash (–).                |
|       |           |                               | <b>T3</b> = 380/3 |                                       |
|       |           |                               | <b>17</b> = 415/3 |                                       |
|       |           |                               | <b>T5</b> = 440/3 |                                       |
|       |           |                               | <b>T4</b> = 480/3 |                                       |
|       |           |                               | <b>T6</b> = 600/3 |                                       |

### **Example: ETX024-3T4-G16**

A Hubbell tankless electric water heater rated at 24 kW with 3 heating elements and powered with 480 volt, three phase, 60 Hz. With optional NEMA 4X rating.

**Note:** For kW rating of 72-162kW ask about the Tankless ETXA.

## **Optional Equipment**

**Note:** Optional equipment must be called out in the written specifications using the codes below.

| Conti  | roller  | Gene           | ral  |
|--------|---|----------------|--|
| C35    | BACnet communication module with T1000 digital controller   | G <sub>3</sub> | Enclosure heater (specify minimum temperature expected)                                  |
| C51    | Remote control display, allows the heater to be installed in a remote location. The 3" $\times$ 5" NEMA 4 display | G9             | Explosion resistant construction (specify class, division, group, and temperature class) |
|        | enclosure can be located up to 25' from the heater  | G16            | NEMA 4X rating   |
|        |   | Vess           | el   |
| Please | note: Optional equipment may impact overall dimensions  | V41            | Alternate Threaded Inlet/Outlet Connections Size   |
|        | eight. Please request submittal drawing from factory.   | NPT            | NPT Fittings for Inlet/Outlet  |
|        |   |                |  |

#### **Available Accessories**

10-year Warranty: 10-year non pro-rated tank warranty, specify part number "VESSEL WARRANTY"

Accessories Name Part #

All information is subject to change without notice. Consult factory for submittal drawings.

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