

# Engineering Specifications



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## ► Domestic Hot Water Units

Vitotrans 300, S3HA-90 Single-wall Indirect-fired DHW Unit (Qty. of 1)

### DHW Unit Specifications: Vitotrans 300, S3HA-90

#### 1.0 Performance Criteria

The instantaneous DHW unit shall be capable of producing a maximum of 180 GPM (681 L/min) of domestic hot water with an 80°F (44°C) temperature rise.

The DHW unit shall be suitable for domestic hot water production in combination with a hot water heating system.

The DHW unit shall be designed for use on heating systems with the following operating conditions:

- DHW operating conditions: maximum operating pressure 150 psig at 210°F (99°C)
- Heating system operating conditions: maximum hot water operating pressure 150 psig at 230°F (110°C)

#### 2.0 Construction

Each DHW unit shall have three integrated single-wall brazed plate stainless steel heat exchangers. The heat exchanger shall be made of fully hygienic, high-alloy stainless steel. The heat exchanger shall be certified for low lead content, including U.S. Safe Drinking Water Act, NSF/ANSI 372, carry the ASME "U" Stamp, and a CRN number. The heat exchanger shall have an overall surface area no less than 208.8 sq. ft (19.40 sq. m).

The DHW unit shall be fitted with 2½" NPT threaded heating system connections and shall have an integrated variable speed heating system pump that will regulate the flow of heating system water to maintain the set point domestic hot water temperature. The internal heating system pipe shall also incorporate a wye strainer, temperature sensors for both heating system supply and return piping, heat exchanger isolation valves, and drain valves.

The DHW unit shall be fitted with 2" NPT threaded domestic water connections and shall have an integrated ultrasonic flow meter that will measure domestic water flow and work as a system activation and flow rate feedback for domestic water. The internal domestic water pipe shall be constructed of high alloy stainless steel and also incorporate a wye strainer, temperature sensors for both domestic cold water and domestic hot water piping, heat exchanger isolation valves, 150 PSI pressure relief valve, and drain valves.

The DHW unit shall have an integrated control unit with integrated buffer tank management. The control shall be able to communicate directly to a BMS through BACnet (IP) communication protocol. The user interface shall be a full color graphic touch screen user interface. The control shall be able to read/display the following information:

- System supply temperature
- System return temperature
- DCW temperature
- DHW temperature
- System flow rate
- Domestic water flow rate
- Data trending
- Buffer tank temperature
- System faults

The DHW unit shall have a steel enclosure with a baked enamel finish. Latched enclosure panels shall encase the DHW unit.

Four leveling feet shall be provided on the DHW unit base to allow for easy adjustment.

### **3.0 Certifications**

The heat exchanger shall have the following approvals and listings, or be in compliance with:

NSF/ANSI 372, ASME "U" Stamp, and CRN

### **4.0 Installation**

All water connections shall be accessible once the DHW unit is installed, for ease of service.

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