Specification: Digital-Flo® Semi-Instantaneous

Model: DFS90DW80BS

Article I. Technical Specifications:

Section 1.01 The assembly shall be pre-piped steam to water semi-instantaneous shell and tube water heater assembly with performance matched components and pressure tested before delivery. The semi-instantaneous shell and tube water heater shall be of double wall construction with 1/2" (12.7mm) copper inner tube, 5/8" (15.875mm) grooved copper outer tube expanded into steel (steam side) and 304 stainless steel (water side) tube sheets with steam in the tubes and water in the Duplex 2205 stainless steel shell. Heat exchanger will be fixed on one end of the shell and free floating on the opposite end.

Section 1.02 Temperature controller (DRV) shall be digital using integrated circuit board technology designed to deliver blended water economically at a safe, accurate temperature for sanitary use in re-circulated hot water systems. The DRV shall have a 2 line, 16 character display of delivered temperature with the option of °F or °C. Display also shows the error codes and alarm conditions. DRV shall be compliant with ASSE Standard 1017 and CSA B125, UL listed and so certified and identified.

Section 1.03 The assembly shall comprise domestic side check valves, strainers, DRV, thermometers, ball valves, safety shut-off valve, shell and tube exchanger all pre-piped with type L copper on a painted carbon steel.

Section 1.04 Complete assembly to be Lead Free compliant.

Section 1.05 The water heater assembly shall include integral tabs on the tube sheet to aid in the tube bundle serviceability.

Section 1.06 The assembly shall be mounted on a painted rectangular carbon steel frame with integral installation pockets for shipping, un-packaging and maneuverability.

Section 1.07 The water heater assembly shall include an insulation jacket.

Section 1.08 The water heater assembly shall be manufactured and stamped according to ASME Code Section VIII. Div. 1.

Section 1.09 The assembly shall include SAGE™ to interface via web enabled or with Building Automation Systems (BAS) which utilize Modbus, Bacnet™ or LonWorks™ protocols via the use of specific processor card. SAGE™ allows remote monitoring of the hot inlet, cold/return inlet and mixed water outlet temperatures.

Section 1.10 Water heater assembly shall have the following connectivity capabilities:

1. SPCO relay outputs which are energized during operation.
2. RS485 Serial Port for connection to Modbus RTU (on board).

Section 1.11 Warranty

1. Pre-packaged skid shall have a 2 year warranty from date of installation but not longer than 27 months from date of shipment.
2. DRV shall have a 5 year all components parts warranty from date of shipment other than preventative maintenance service items which include batteries and all 'wetted' O-Rings/Seals.
3. The heat exchanger shall have a 1 year warranty from date of installation but not longer than 18 months from date of manufacturing.

Article II. Operational Specifications:

Section 2.01 Steam pressure on system to be no more than 15 PSIG constant. Designed to generate 85 GPM (321 l/m) with a 40˚F (4˚C) entering cold water temperature, a 140˚F (60˚C) hot water outlet utilizing 15 PSIG steam at a maximum of 4,497 lbs/hr (2,040 kg/hr) steam load. When mixed/blended to 120˚F (48˚C) for a mixed outlet temperature will produce 106 GPM (401 l/m).

Section 2.02 Water heater assembly shall have all of the following operational capabilities:

1. +/- 2˚F (+/-1˚C) water temperature control from 0 to full system demand
2. 2˚F (1˚C) minimum inlet to outlet water temperature differential
3. Automatic shutoff of hot water flow upon cold water inlet supply failure
4. Automatic shutoff of hot water flow in the event of a power failure
5. Programmable set point range of 81-158°F (27-70°C)
6. Programmable 1st level hi/lo temp alarm display
7. Programmable error temperature error level for double safety shutdown
8. LCD display which indicates: set point, delivered temperature, error codes and alarm conditions
9. Isolation valves and clean in place connections to chemically clean the exchanger without dis-assembly of the exchanger
10. ¼" domestic side pressure relief pop-off valve with 165 psig crack pressure. Self-seating.