Specification

Digital-Flo® DF8120P80-80BS

Category: Steam to Water Shell and Tube Heat Exchanger

Type: Digital Recirculating – Redundant

General:

1.0 Digital-Flo DF8120P80-80BS

A. The assembly shall be pre-piped redundant steam to water shell and tube water heaters with performance matched components that is pressure tested before delivery. The heat exchanger shells shall be carbon steel. Tube bundles shall be of single wall construction with straight 5/8" x .065" OD Admiralty Brass expanded into Naval Brass tube sheets with a free-floating bolted end cover. Tube bundles will be fixed on one end of the shell, and free-floating on the opposite end, designed and manufactured in accordance with ASME Code Section VIII. Two-pass head shall be stainless steel.

B. Digital Recirculating Valves (DRV), with temperature sensing thermistors integral of the mixing chamber, shall deliver blended water at a safe and precise temperature setpoint in a domestic water system designed specifically for continuous recirculation. The DRV shall not require peripheral ancillary sensors or pump control devices. Each 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 conform to ASSE Standard 1017, CSA B125.3-11, UL E357437, and CE.

C. The Digital-Flo shall comprise of pre-piped isolation valves, strainers, check valves, relief valves, DRVs, thermometers and pressure gauges on type L copper and a painted carbon steel frame. Condensate trap assembly shall be included. The second heat exchanger and DRV shall be configured for redundant backup service.

D. Complete assembly to be Lead Free compliant

E. Steam pressure on system to be no more than 15 PSIG. Design conditions: 165 gpm at velocity of 7.5 ft/sec, 15 PSIG steam at 6,834 lbs/hr, DRV setpoint of 120°F. DRV requires minimum continuous recirculation of 10 GPM.

F. Water heater assembly shall have all of the following operational capabilities:

1. +/-2°F DRV water temperature control at peak, moderate or zero fixture demand on hot water system designed for continuous recirculation
2. 2°F minimum recirculating water temperature differential
3. LCD display which indicates: set point, delivered temperature, error codes and alarm conditions capable of BAS and mobile connectivity
4. Programmable set point range of 81-158°F (27-70°C) capable of BAS or mobile monitoring and adjustment
5. Programmable thermal disinfection range of 158-185°F (70-85°C)
6. Programmable 1st level hi/lo temp alarm display capable of BAS or mobile alerting
7. Automatic safe closure of hot water inlet in response to: inlet supply failure, 120V power failure, or programmable high temperature error
8. Automatic safe closure of hot water inlet powered by a replaceable lithium battery monitored for low-level alerting
9. Automatic safe closure response relayed to secondary safety shutoff valve
10. Isolation valves and clean in place connections to chemically clean the exchanger without disassembly of the exchanger.
11. ¼" domestic side pressure relief pop-off valve with 165 psig crack pressure. Self seating.

G. Assembly shall include SAGE™ for BAS and or mobile connectivity. BAS connectivity available with specific ProtoCessor cards for BAS connectivity to systems which operate on Modbus TCP, BACnet™, or LonWorks™ protocols. Mobile connectivity shall provide hot water dashboard monitoring, secure remote programming,

multi-location view, temperature and system diagnostic alerts, unlimited digital documentation and automated report generation. Mobile connectivity may be enabled by a customer activated no-term subscription.

H. Warranty

Pre-piped skid shall have a 2 year warranty from date of installation, but not longer than 27 months from date of shipment.

DRV shall have a 5 year all components parts warranty, with exception of batteries and O-rings.

The tube bundle shall have a 10 year guarantee against failure caused by materials or workmanship provided by Armstrong but not against gasket failure or damage caused by corrosion, water hammer or lack of proper maintenance.