Armstrong

Specification

DMC50BS Flex Zone PHE

THE BRAIN® DIGITAL RECIRCULATION VALVE

Category: The Brain®
Type: Digital Recirculation Valve
Model: DMC50BS FLEX ZONE PHE

1.0 Digital Mixing Center Flex (DMC FLEX)

1.1 Digital Recirculation Valve (DRV50) shall be supplied pre-piped and pressure tested as a lead-free Digital Mixing Center (DMC) complete with hot water inlet, cold water inlet connections, and independent continuous recirculation reheat generated by a plate heat exchanger.

1.2 DMC50BS FLEX shall comprise of a DRV50, pre-wired to a Building Automation System (BAS) and web enabled electrical panel, isolation valves, strainers, check valves, thermometers and pressure gauges assembled on Type L copper with hot water bypass securely mounted on a carbon steel frame with industrial grade enamel paint.

1.3 Plate heat exchanger shall be brazed double wall 316L stainless steel

2.0 Digital Recirculation Valve (DRV50)

2.1 DRV shall have four thermistors integral of the mixing valve body that measure the cold water inlet, hot water inlet, mixed water outlet, and over-temp safety temperatures.

2.2 DRV mixing valve body shall be of 316L stainless steel, mixing valve proportioner of 316L stainless steel, and a NEMA 3S electronics enclosure.

2.3 DRV50 shall have 2” inlets and outlet connections that will deliver 94 gpm @ 5 psid.

2.4 DMC50BS FLEX shall be capable of +/- 2°F control during high, low or extended periods of zero system demand with a continuous recirculation of >10 gpm. Temperature control shall be achieved without aquastat-like control of the recirculation pump.

2.5 DRV setpoint shall be configured by the factory to customer specification. DRV shall also be field adjustable.

3.0 DMC50BS FLEX shall have the following operational specifications:

3.1 +/- 2°F water temperature control

3.2 1°F minimum return differential

3.3 Minimum continuous recirculation of 10 gpm per DRV

3.4 Automatic shutoff of hot water flow upon cold water inlet supply failure

3.5 Automatic shutoff of hot water flow in the event of a power failure

3.6 Programmable set point range of 81-158°F (27-70°C)

3.7 Programmable thermal disinfection mode

3.8 Programmable 1st level hi/lo temp alert display

3.9 Programmable temperature error level for safety shutdown

3.10 Standard (custom options are available upon request) zone reheat system parameters based on typical system setpoint temperatures of either 126ºF, 129ºF or 134ºF (52ºC, 54ºC or 56ºC) with a zone recirculation temperature loss of 2ºF, 5ºF or 10ºF (1ºC, 2.8ºC or 5.6ºC) respectively

4.0 DRV with SAGE® (BS) shall have the following connectivity specifications:

4.1 DRV shall be supplied with SAGE® Building Automation System (BAS) Interface Module

4.2 SAGE® shall connect to BAS via Modbus, BACnet or LonWorks protocol

4.3 SAGE® shall receive and communicate the following inputs:

4.3.1 All DRV Integral Thermistor Readings

4.3.2 External Temperature Readings (up to 4)

4.3.3 External Pressure Readings (up to 3)

4.3.4 External Flow Rates (up to 2)

4.4 SAGE® shall receive and communicate the following self-diagnostic error messages

4.4.1 Over Temperature Error

4.4.2 PCB Error

4.4.3 Thermistor Error

4.4.4 Motor Error / Emergency Mode

4.4.5 Battery Error

4.5 SAGE® shall be configured for enabling subscription cloud based (separate fee) remote connectivity

5.0 DRV shall be certified to ASSE 1017, UL listed, and conform to CSA B125.

6.0 Warranty

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

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