

Specifications

DMC50BS FLEX - The Brain® Digital Recirculation Valve with SAGE®

Category: The Brain®

Type: Digital Recirculation Valve with SAGE®

Model: DMC50BS FLEX

1.0 Digital Mixing Center (DMC)

- 1.1 Digital Recirculation Valve (DRV) shall be supplied pre-piped and pressure tested as a lead-free Digital Mixing Center (DMC) complete with a hot water inlet, cold water inlet, mixed water outlet, recirculation return inlet, and return to heater connections.
- 1.2 DMC50BS FLEX shall comprise of a DRV50 that is pre-wired to a Building Automation System (BAS) and a web-enabled electrical panel, isolation valves, strainers, and check valves securely mounted on carbon steel unistruts with industrial grade enamel paint.

2.0 Digital Recirculation Valve (DRV50)

- 2.1 DRV shall have four thermistors integral of the mixing valve body that measure the hot water inlet, cold 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 DRV 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 programmed by the factory to customer specification. DRV shall also be field adjustable.

3.0 DRV50 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
- 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

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

- 4.1 DRV shall be supplied with SAGE® via Modbus, BACnet, or LonWorks protocol
- 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 a subscription (separate fee) to cloud-based 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.