



## Specification

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### DMC80-80-80 The Brain® Digital Recirculation Valve

Category: The Brain®

Type: Digital Recirculation Valve

Model: DMC80-80-80

#### 1.0 Digital Mixing Center

- 1.1 Three (3) Digital Recirculation Valves (DRV) shall be supplied pre-piped and pressure tested as a lead-free Digital Mixing Center (DMC) complete with hot water inlet, cold water inlet, mixed water outlet, recirculation return inlet, and return to heater connections.
- 1.2 DMC80-80-80 shall comprise of (3) DRV80s pre-wired to an 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.

#### 2.0 Digital Recirculation Valve (DRV80)

- 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 Each DRV80 shall have 3" 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 per valve. 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 DRV80 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 value
- 3.4 Automatic shutoff of hot water flow upon cold water inlet supply failure

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- 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 shall have the following connectivity specifications:
  - 4.1 SPCO relay outputs which are energized during operation
  - 4.2 LCD display which indicates: set point, delivered temperature, error codes and alarm conditions
  - 4.3 MODBUS 485 port for remote set point adjustment and remote operating temperature visibility
  - 4.4 RS485 Serial Port for connection to a performance matched hot water monitoring system
- 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.