



# Water Temperature Control - Recirculation Systems

## Digital

### The Brain® Model DMC50-50

DMC50-50 is a fully Digital Mixing Center (DMC) designed specifically to be the primary water temperature controller in a continuously pumped circulating hot water system.

Digital technology provides enhanced water temperature control accuracy which resists zero system demand “Temperature Creep” without the use of a manual throttling valve or a temperature activated pump shut-off device (aquastat).

### Operational Specifications (DRV50)

- +/-2°F water temperature control at points of use 25' (7.7 m) downstream during demand
- +/-2°F water temperature control at the DRV during zero system demand “idling” periods
- 2°F minimum valve inlet to outlet temperature requirement (system recirculation temperature loss)
- Automatic shutoff of hot water flow upon cold water inlet supply failure
- Automatic shutoff of hot water flow in the event of a power failure
- Programmable set point range of 81-158°F (27-70°C)
- Programmable thermal disinfection mode
- Programmable 1st level hi/lo temp alarm display
- Programmable temperature error level for safety shutdown

### Technical Specifications (DRV50)

- 100-240 V AC
- Polymer Electronics Enclosure
- Stainless Steel Valve Construction
- Complete Assembly Lead Free Compliant
- Maximum inlet HW supply temperature 185°F (85°C)
- Minimum Circulation Flow – 10 gpm (38 LPM) per DRV50
- Minimum System Draw Off - 0
- ASSE 1017, CSA B125 and CE Certified
- Operational water pressure of 10-150 psig (.7-10 bar)
- Display in °C or °F
- SAGE™ enabled

### Connectivity (DRV50)

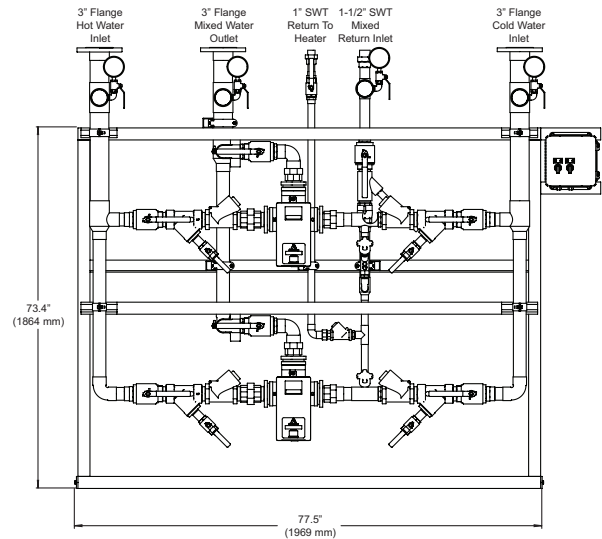
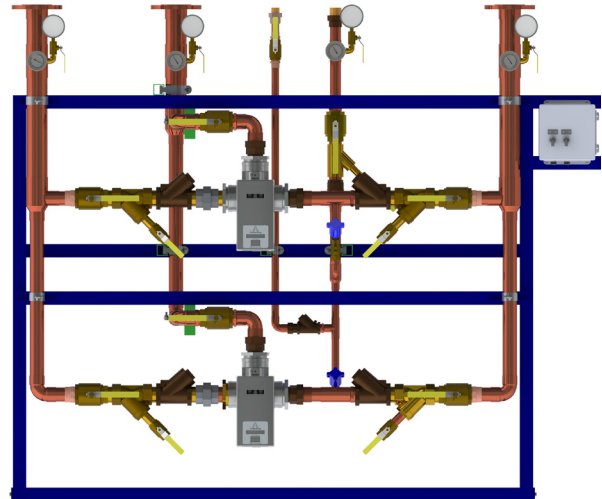
**SPCO Relay Outputs** – Relay which is energized during operation.

**LCD Display** – Provides information on set point, delivered temperature, error messages and alert conditions.

**RS485 Serial Port** – Connects the DRV to either Modbus® RTU or SAGE™. (See DMC50-50BS for package with SAGE™.)

**Modbus® RTU** – DRV can be configured to communicate directly with Building Automation Systems (BAS) using Modbus® RTU protocol.

For a submittal drawing, refer to D85100.



Recirculation Systems - Digital (GPM and PSI)				
Model	Pressure Drop (PSI)	Minimum System Draw-Off	Maximum Flow @7.5 ft/sec.	C <sub>v</sub>
DMC50-50	5			
GPM	188	0	165	84

Recirculation Systems - Digital (LPM and BAR)				
Model	Pressure Drop (BAR)	Minimum System Draw-Off	Maximum Flow @7.5 ft/sec.	C <sub>v</sub>
DMC50-50	0.3			
LPM	711.7	0	625	84