



# Armstrong® Water Temperature Control - Recirculation Systems

## Digital

### The Brain® Model DMC50 Flex Zone PHE

DMC50 Flex Zone PHE is a fully Digital Mixing Center (DMC) specifically designed to be the primary water temperature controller in a domestic hot water zone with independent continuous recirculation reheat generated by a plate heat exchanger (PHE).

Digital technology provides precise water temperature control and resolves “temperature creep” common with other technologies during periods of no demand. The Brain operates independently without the support of manual throttling valves, temperature activated pump controls, or a series of supplemental components.

### Operational Specifications

- +/-2°F DRV water temperature control at peak, moderate or zero fixture demand on hot water system designed for continuous recirculation
- 1°F minimum recirculating water temperature differential
- LCD display which indicates: set point, delivered temperature, error codes and alarm conditions capable of BAS and mobile connectivity
- Programmable set point range of 81-158°F (27-70°C) capable of BAS or mobile monitoring and adjustment
- Programmable thermal disinfection range of 158-185°F (70-85°C)
- Programmable 1st level hi/lo temp alarm display capable of BAS or mobile alerting
- Automatic safe closure of hot water inlet in response to: inlet supply failure, 110V power failure, or programmable high temperature error
- Automatic safe closure of hot water inlet powered by a replaceable lithium battery monitored for low-level alerting

### Technical Specifications

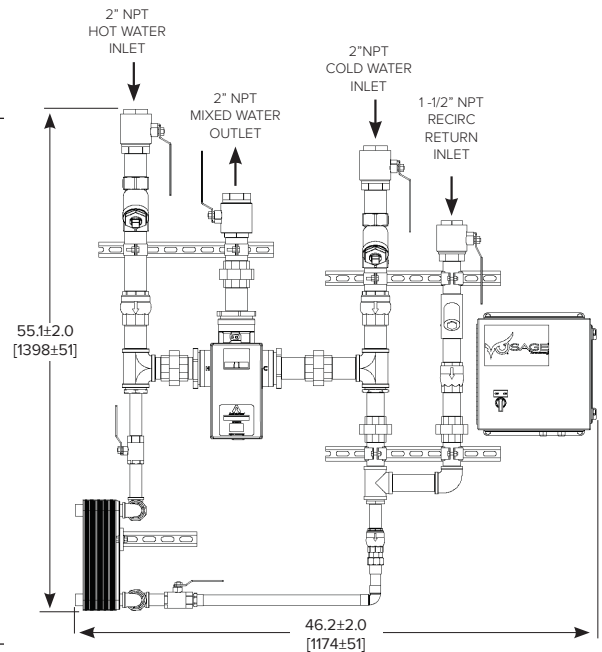
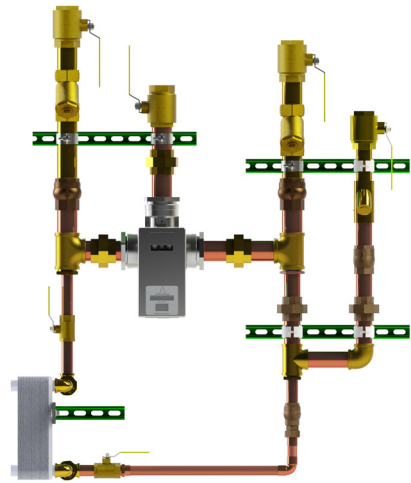
- 100-240V AC
- Polymer Electronics Enclosure
- Stainless Steel Valve Construction
- Lead Free compliant
- Maximum inlet HW supply temperature 185°F (85°C)
- Minimum Continuous Recirculation - 10 GPM (38 LPM)
- Minimum System Draw Off - 0 GPM
- Conforms to ASSE 1017, CSA B125.3-11, UL E357437, and CE
- Operational water pressure of 10-150 psig (7-10 barg)
- Display in °C or °F
- Shipping weight 365 lbs (166 kg)
- Integral MODBUS RTU for direct connectivity to BAS, or SAGE®
- Stainless steel brazed plate double wall PHE (Custom PHE options available)
  - 2 Standard Configurations Available; Customs Available upon Request
  - Standard #1 = PHE-410-38 (see Specification & Submittal Drawing-D133259 for System Parameters)
  - Standard #2 = PHE-415-32 (see Specification & Submittal Drawing-D133261 for System Parameters)

### Connectivity

**RS485 Serial Port** – Integral MODBUS RTU for direct connectivity to BAS. Seamless integration with SAGE® (BS) connectivity options.

See DMC50BS Flex Zone PHE for SAGE® (BS) module available with specific ProtoCessor cards for BAS Connectivity to systems which operate on Modbus TCP, BACnet™, or LonWorks™ protocols. Mobile Connectivity may be enabled by a customer activated no-term subscription.

Mobile Connectivity features smart hot water system dashboard monitoring, secure remote programming, multi-location view, temperature and system diagnostic alerts, with unlimited digital documentation and automated report generation.



| Recirculation Systems - Digital (GPM and PSIG) |                      |     |     |     |                         |                |
|--|----------------------|-----|-----|-----|-------------------------|----------------|
| Model  | Pressure Drop (PSIG) |     |     |     | Minimum System Draw-Off | C <sub>v</sub> |
|  | 5                    | 10  | 15  | 20  |                         |                |
| DMC50 Flex                                     |                      |     |     |     |                         |                |
| GPM  | 94                   | 133 | 163 | 188 | 0                       | 42             |

| Recirculation Systems - Digital (LPM and BARG) |                      |       |       |       |                         |                |
|--|----------------------|-------|-------|-------|-------------------------|----------------|
| Model  | Pressure Drop (BARG) |       |       |       | Minimum System Draw-Off | C <sub>v</sub> |
|  | 0.3                  | 0.7   | 1.0   | 1.4   |                         |                |
| DMC50 Flex                                     |                      |       |       |       |                         |                |
| LPM  | 355.8                | 503.5 | 617.0 | 711.7 | 0                       | 42             |

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit [armstronginternational.com](http://armstronginternational.com) for up-to-date information.