



**Armstrong®**

DIGITAL HOT WATER  
SYSTEM SOLUTIONS



## INCREASE EFFICIENCY, SAFETY AND SAVINGS WITH ARMSTRONG'S DIGITAL HOT WATER SYSTEM SOLUTIONS

Whether it's a single, groundbreaking product or a complete, customized, fully integrated hot water system, Armstrong has the intelligent solutions your industry needs. We're here to make your life easier, with leading-edge equipment and technology to improve safety and compliance, reduce risks for scald injury and litigation, and fulfill your most exacting demands for performance and energy consumption.

### **WE'RE TRUSTED GLOBAL LEADERS IN DOMESTIC HOT WATER GENERATION, DIGITAL WATER TEMPERATURE CONTROL, AND HOT WATER SYSTEM MANAGEMENT**

Armstrong introduced digital water temperature control to the world with The Brain<sup>®</sup>, then we made it smarter, easier and even more connected with The Brain<sup>®</sup> DRV25. Armstrong also brought you SAGE<sup>®</sup>, the most advanced hot water system monitoring and documentation software available. The Brain<sup>®</sup> and SAGE<sup>®</sup> are the first barriers to Legionella and essential to following the Standards of Care necessary for prevention of Legionnaires' disease.

### **FOLLOWING STANDARDS OF CARE TO REDUCE RISKS OF LEGIONELLA AND SCALDING**

Armstrong's industry-leading hot water solutions are designed to reduce risks for the growth and spread of Legionella and other opportunistic pathogens in building water systems, while minimizing the risk of scald injury and associated litigation. We can help you meet ASHRAE and other industry standards, with hardware to guide your compliance, and software that enables you to prove it with accurate monitoring and documentation.

Emerging Standards of Care from sources such as OSHA, ASHRAE, Veterans Administration and National Academies of Sciences, Engineering and Medicine all include critical recommendations for establishing and monitoring hot water system temperature control limits.

### **ABOUT ARMSTRONG INTERNATIONAL**

Founded in 1900, Armstrong International is a privately held, fifth-generation, family-owned company. Our unique heritage of knowledge, experience and insight reaches back more than a century, enabling us to serve you in ways no one else can.

### **ON THE FOREFRONT OF TECHNOLOGY AND INNOVATION**

Often the first to market, our company has been granted more than 70 patents on exceptional products, technology and software. We're here to solve your problems and prevent them with groundbreaking technology and reliable products that demonstrate unparalleled value and improved utility performance.

All over the world, Armstrong's industry-leading equipment is hard at work in more than 100 countries, saving time money and energy for some of the largest, most efficient companies in your industry.

For more information, or to find an Armstrong representative near you, visit [armstronginternational.com](http://armstronginternational.com)

## ABH GAS-FIRED WATER HEATER – FEATURING THE BRAIN® AND SAGE®

### A COMPLETE, FULLY INTEGRATED HOT WATER SYSTEM SOLUTION

Engineered for reliable and high-efficiency hot water generation, our ABH gas-fired water heater package is fully integrated with The Brain® Digital Recirculation Valve. The pre-piped assembly featuring an ASSE 1017 certified master mixing valve is available with SAGE® Smart Hot Water System Monitoring and Documentation, for a comprehensive state-of-the-art packaged solution.

#### ABH299

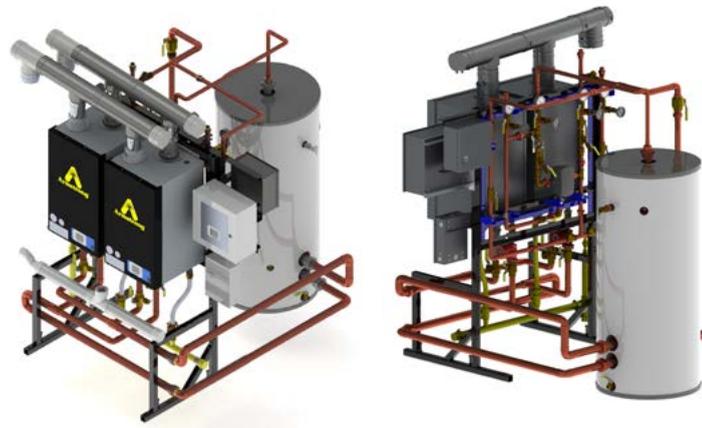
Minimum 299,000 BTU, plus storage  
Maximum potential BTU 2,400MBTU

#### ABH399

Minimum 399,000 BTU, plus storage  
Maximum potential BTU 3,200MBTU

#### ABH599

Minimum 599,000 BTU, plus storage  
Maximum potential BTU 5,040MBTU



#### FEATURES

- | Up to 99.8% efficiency—Features efficient condensing technology, 316L heat exchanger design with a 5:1 turndown
- | Pre-piped package solution can be tailored to fit space of any size
- | Turnkey installation resulting from pre-piped, single-point utility connections—electrical, gas and venting
- | Customized for your unique requirements—Accessorize to suit with circulation pumps, expansion tanks, additional heat exchangers and related componentry
- | Reduced risks for Legionella and scalding—Optimized compliance with ASHRAE188 and other Standards of Care offers inhibited incubation of waterborne pathogens and enhanced protection against water temperature injury
- | Integral MODBUS RTU for direct connectivity to BAS in all primary protocols
- | Configurable rack mount modular water heaters provide multiple storage tank options with up to 40:1 turndown
- | Standard and configurable custom hot water generation and digital temperature control solutions with The Brain® DRV and BAS or SAGE® Smart Hot Water System Management

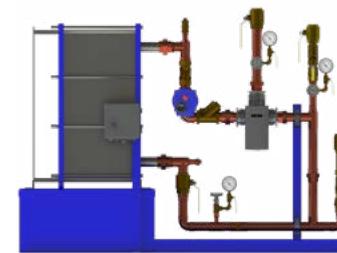
## DIGITAL-FLO® PRE-PIPED WATER HEATERS – FEATURING THE BRAIN®

Armstrong’s industry-changing series of water heaters achieves a higher level of hot water system temperature control accuracy. All Digital-Flo® Water Heaters are equipped with The Brain® Digital Recirculation Valve (DRV), our revolutionary digital water temperature control technology, and come SAGE®-enabled, for a complete, factory-integrated hot water system solution.

The Brain®, Digital-Flo®, and SAGE® are integral components of your institutional hot water system risk management plan.

#### FEATURES

- | The Brain® ASSE 1017 certified DRV
- | Optional SAGE® building system interface with integral data-logging to support AHSRAE 188 monitoring and reporting compliance



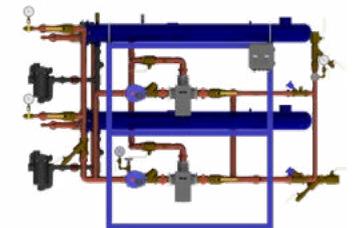
#### DIGITAL-FLO® INSTANTANEOUS BOILER WATER/WATER PHE WATER HEATER

- | Choose from 40 standard assemblies or customize
- | No need for modulating pump control



#### DIGITAL-FLO® SEMI-INSTANTANEOUS STEAM/WATER HEATER

- | Choose from 16 standard assemblies or customize
- | Compact vertical design, small footprint
- | Simple tube bundle access
- | Water temperature raised above Legionella survival levels on every recirculation cycle



#### DIGITAL-FLO® INSTANTANEOUS STEAM/WATER SHELL & TUBE WATER HEATER

- | Choose from 48 standard assemblies or customize
- | Separate steam control valve not required
- | Water temperature raised above Legionella survival levels on every recirculation cycle

## THE BRAIN® DIGITAL RECIRCULATION VALVE (DRV)



### FEATURES

- Component self-diagnostics
- Programmable set point and alerts
- Programmable thermal disinfection

Engineered exclusively for continuously recirculating hot water systems, The Brain® simplifies your hot water system to deliver unparalleled accuracy, stability and safety. Features include programmable temperature alerts and a program to promote compliance with recommended Legionella guidelines.

With four assembly configurations proportionate to ease of installation, The Brain® improves the performance of hot water systems that use all types of water heating technologies. Choose from 40 standard models to accommodate flow rates up to 400 gpm (@ 10 psid), or contact us to discuss a solution custom to your specifications. Include SAGE® technology for optimum monitoring and reporting.

### SAFETY

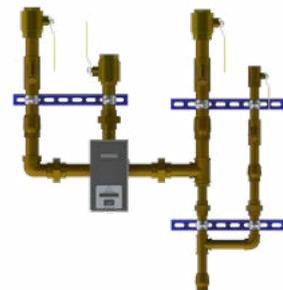
- Over temperature shutoff
- Power failure shutoff
- Emergency mode

### PERFORMANCE

- +/- 2°F / 1°C control
- 1°F / 1°C minimum system temperature loss

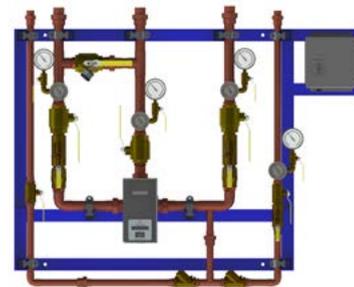


**THE BRAIN® WITH RECIRCULATION MANIFOLD**



**THE BRAIN® DIGITAL MIXING CENTER (DMC) FLEX**

With isolation valves, strainers, and check valves on unistrut mounting.



**THE BRAIN® DIGITAL MIXING CENTER (DMC)**

With isolation valves, strainers, check valves, temperature and pressure gauges, HWI bypass and a control panel on a carbon steel frame.

## SAGE® SMART HOT WATER SYSTEM MONITORING AND REPORTING

This fully integrated software tool brings you the next level in smart hot water system monitoring and reporting. SAGE® works seamlessly with all our real-time monitoring products, including The Brain®, as it analyzes data to track behavior and performance—ensuring full compliance with VA, ASHRAE and World Health Organization hot water system safety guidelines and requirements. By providing regular updates and real-time alerts, SAGE® keeps you informed, 24 hours a day.

SAGE® offers simple, effective monitoring, logging and remote alerting of key temperature control components of a hot water system safety risk management plan, for a modest monthly fee.



### FEATURES

- You own your data and it is always safe and protected by high-level security
- Dashboard monitoring in real time
- Secure remote programming—you are in control
- Multi-location view of all properties simultaneously, or filtered
- Temperature and system diagnostic alerts in real time
- Unlimited digital data logging, automated report generation and record retention for simplified compliance monitoring and documentation

### CONNECTIVITY

- Integral Modbus RTU interface (The Brain®)
- SAGE® building system interface module
- Web-enabled
- Modbus, BACnet™ and LonWorks™





INTELLIGENT THERMAL UTILITIES SOLUTIONS FROM A GLOBAL  
LEADER IN ENERGY MANAGEMENT AND ENJOYABLE EXPERIENCES

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