

## Technical Data Sheet

# Edge<sup>®</sup> Controller for Benchmark E

The Edge is a revolutionary controller designed to provide continuous benefit throughout the life cycle of a heating system: from project/operating cost savings, to simplified system design and startup, and optimized system performance and health monitoring.

Intuitive touchscreen and menu structure virtually eliminate programming errors. Graphical unit and unit status details are accessible onscreen.

Built into the Edge Controller are AERCO's Boiler Sequencing Technology (BST), ensuring peak performance, system efficiency and reliability, while reducing cost of ownership.

The Edge comes with integrated BACnet & Modbus protocols<sup>1</sup> for full compatibility with building automation and energy management systems. Firmware upgrade, settings transfer/backup and data logging are conveniently accomplished via a USB port.



## Features

- Precise Temperature Control
- Boiler Sequencing Technology
- Integrated BACnet & Modbus Communication Protocols<sup>1</sup>
- Peak Load Management<sup>1</sup>
- Manual Run
- Reserve Unit Control
- Intuitive Touchscreen, Graphical Interface
- Save and Load Unit Settings
- Upgrade Unit Software
- USB Data Logging
- UL 60730 Listed



<sup>1</sup>Hybrid Plant Control, Modbus RTU and TCP/IP, Peak Load Management and Automatic Backup Manager Transfer available soon via firmware update

## **Future-Proof Software in a Hardware Enclosure that is Built to Last**

The most important feature of any product manufactured in today's information age is its ability to network with related equipment. And not just the equipment and systems that are available today – but those that are still on the horizon. This indisputable fact was a guiding principle in the design of the AERCO Edge Controller. It pairs software flexibility with hardware durability to ensure that your AERCO equipment will be as current tomorrow as it is today. Edge controller software can be easily updated via USB, making it easy to install and access new controls features.

### **Utility Cost Saving with Peak Load Management<sup>1</sup>**

Edge Peak Load Management (PLM) feature allows customized unit operation for seasonal demand as well as taking advantage of time-of-use plans to reduce utility cost for space heating systems.

### **Startup and Maintenance made easy**

Edge simplifies start-ups, enabling even the most complex systems to be configured in minutes through intuitive interface. Settings can be uploaded from one unit to another without having to redo the same steps for each unit in the plant to save time. Important unit and plant performance details are viewable on the home screen without sifting through multiple screens. Troubleshooting is made easy with configuration diagnostics and enhanced Event History.

### **Edge strengthens performance by optimizing the overall system and increasing efficiency**

Seamlessly interfacing with an internal element sequencer and SSR module, the Edge can precisely match heat output for varying hydronic system demands. By effectively managing a stage sequencer and SSR, the controller handles the electrical demand of the boiler more effectively, preventing sudden spike electrical draws, thus eliminating thermal and electrical waste. This inherently reduces cycling of the elements for enhanced longevity and reliability. With diagnostic tools such as Manual Run, a user can verify they are achieving the unit performance and efficiency they've come to expect from AERCO.

### **Precise Temperature Control**

The unit uses PID (Proportional & Integral + Derivative) and Dynamic Up/Dynamic Down Modulation control algorithm to provide a dynamic response to all changes in standalone or plant operations. Outlet temperatures, as well as percentage boiler input, are precisely controlled with virtually no overshoot or short cycling of equipment. A header temperature of  $\pm 4^{\circ}\text{F}$  is assured during continual standalone or plant operation.

### **Reserve Unit Control**

With Reserve Unit Control, the Edge controller can enable a reserve boiler when the primary AERCO unit(s) is operating at close to maximum capacity and still can't meet the system demand or during peak time to save on utility charges. The reserve unit can be an AERCO or a non-AERCO unit.

## Boiler Sequencing Technology (BST) - Load Sharing Strategy Maximizes Energy Efficiency

The Edge's integrated BST for Benchmark E boilers is designed to maximize energy savings and uptime reliability in modular unit plants. The BST system can stage and coordinate operations for up to 16 units, utilizing AERCO's Electric Boiler's unmatched modulation for utmost plant efficiency. To meet building demand, the BST will employ as many boilers as available and needed, each operating at its most efficient state. And as individual boilers are added or removed, the energy delivered is automatically adjusted to prevent fluctuations in the header temperature of the plant. The BST systems includes lead/lag boiler designation along with rotation and automatic transfer of manager function from assigned primary to backup manager, in case of a failure or communication loss.<sup>1</sup>

