Technical Data Sheet

Edge X Controller for Benchmark E

The Edge® X Controller is a next-generation controls platform designed to deliver consistent value throughout the lifecycle of the heating system. From lowering project and operating costs to simplifying system design, commissioning, and long-term maintenance, Edge X provides deeper visibility and more precise control of Benchmark E electric boilers. Its intuitive touchscreen interface and streamlined menu structure help reduce configuration errors and accelerate startup.



Features

- Precise Temperature Control
- Hybrid (Electric & Gas) Cascade Control
- Cascade Control
- Boiler Sequencing Technology
- Peak Load Management
- Integrated BACnet & Modbus* Communication Protocols
- Primary Pump Control
- Reserve Unit Control
- Manual Run
- Intuitive Touchscreen, Graphical Interface
- Save and Load Unit Settings
- USB Software Upgrades & Data Logging
- Automatic Backup Manager Transfer*
- UL 60730 Listed



*Modbus RTU and TCP/IP and Automatic Backup Manager Transfer available via future firmware update.

Peak Load Management

Reduce Demand Charges While Maintaining Performance

Peak Load Management (PLM) helps facilities reduce electrical demand charges by intelligently controlling Benchmark E boiler output during high-demand utility periods.



Edge X can adjust plant operation based on scheduled time periods, building automation system signals, or analog inputs while maintaining required heating performance. In hybrid plants, PLM can also coordinate operation between electric and gas boilers to help manage overall energy costs without compromising system reliability or occupant comfort.

Cascade & Hybrid Cascade Control

Intelligent Sequencing for Electric and Hybrid Boiler Plants

Edge X provides intelligent sequencing for Benchmark E electric boiler plants as well as integrated hybrid plants that combine Benchmark E electric boilers with Benchmark gas-fired boilers under a single control platform.



Key Features

- Supports sequencing of up to 16 Benchmark E and Benchmark boilers, in any combination
- Electric-first, gas-first, or runtime-balanced operation
- Automatic staging and de-staging based on demand
- Stable plant temperatures across varying load conditions
- Supports cost, energy, carbon, and resiliency objectives
- Automatic Backup Manager Transfer* for increased system resilience

System Reliability

Primary Pump Control

Edge X integrates direct control of fixed-speed and variable-speed primary pumps, eliminating the need for external pump control panels and reducing commissioning time.

Reserve Unit Control

Reserve Unit Control activates a designated backup (AERCO or non-AERCO) boiler when the primary system approaches full capacity or during peak-rate periods, improving both performance and operating cost management.

*Available via future firmware update.

Connectivity & Integration

Building Management System Compatibility

Integrated BACnet (standard) and Modbus RTU/TCP/IP* interfaces enable seamless connection to building automation systems, energy management platforms, and plant monitoring tools.

Edge X supports USB firmware upgrades, data logging, saving and loading configuration settings, and rapid deployment of plant-wide settings for consistent data sharing and centralized control across standalone, cascade, and hybrid cascade system configurations.

Startup, Service & Diagnostics

Faster Startup & Replication

The intuitive touchscreen interface accelerates commissioning with guided setup. Unit configurations can be saved to USB and uploaded to additional Benchmark E units for fast duplication across multi-boiler and hybrid plants.

Operational Visibility, Diagnostics & Troubleshooting

A graphical home screen provides instant access to live operating conditions, unit status, setpoints, and key performance data, improving visibility across standalone and multi-boiler installations.

Enhanced Event History, configuration diagnostics, and Manual Run Mode simplify troubleshooting, commissioning, and performance verification while reducing service time.

Performance & Efficiency

By coordinating the internal element sequencer with a dedicated SSR (solid-state relay) module, the Edge X precisely matches heat output for varying hydronic system demand, resulting in a more efficient and stable plant with smoother electrical and thermal performance under varying load conditions.

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