



# MODSYNC<sup>®</sup>

## Boiler Plant Sequencing Control System

Steam & Hydronic

- ▶ Efficient Boiler Plant Staging
- ▶ Extends Equipment Life
- ▶ Seamless Automation

Optimize equipment reliability, longevity, and energy usage with the intelligent boiler plant sequencing solution.



# BOILER PLANT SEQUENCING CONTROL

ModSync® simplifies your facility operations with a centralized hub to your entire boiler plant, combining sophisticated controls capabilities with a user-friendly graphical touchscreen.

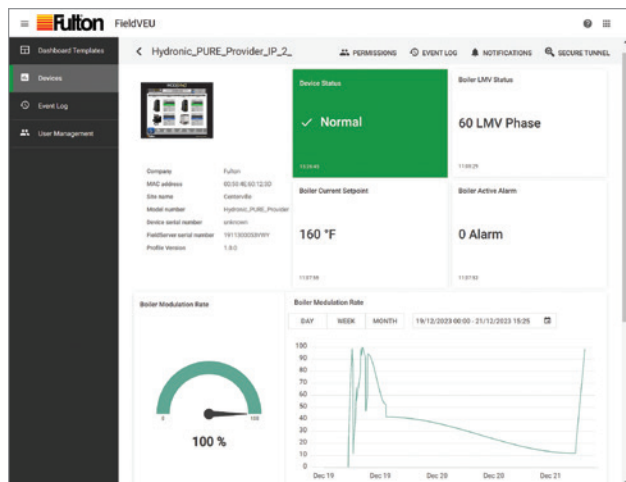
Systems often incorporate multiple boilers sized for peak demands. ModSync leverages the part load efficiencies of these modular plants for exceptional energy savings and redundancy.

## Intelligent Lead-Lag Technology

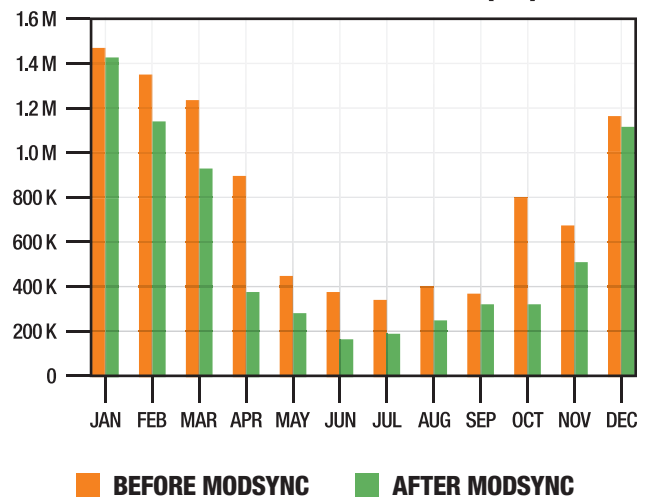
Highly optimized load matching provides peace of mind that the boiler system is operated to its optimal potential while minimizing cycling. This helps meet your sustainability goals of decreasing carbon emissions while simultaneously increasing heat exchanger life.

- ▶ **Maintains Even Cycles & Run Hours**
- ▶ **Extends Equipment Life**
- ▶ **Reduces Fuel Use & CO<sub>2</sub> Emissions**

- ▶ **Efficiency Optimized Sequencing**
- ▶ **Local & Remote Setpoint Modes**
- ▶ **Energy-Saving Setback Scheduling**
- ▶ **Trending Operational History**
- ▶ **Modbus; BACnet Option**



## NATURAL GAS USAGE (ft3)



## Remote Monitoring

The BACnet protocol option provides analytics remotely from any web enabled device.

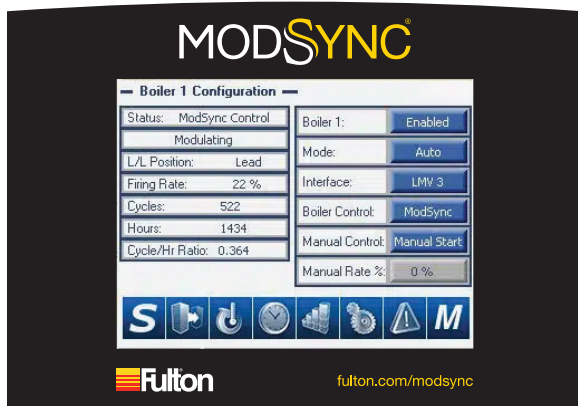
- ▶ **Off-site Supervision of Plant Operation & Performance**
- ▶ **Customize Alerts for Unexpected System Conditions**
- ▶ **Streamlined Troubleshooting & Support**

# MODSYNC SE

## Plant Sequencing Controller

ModSync SE provides off-the-shelf sequencing for centralized plants with lead-lag of either steam or hydronic boilers. Seamlessly integrate various boiler controllers into a single system.

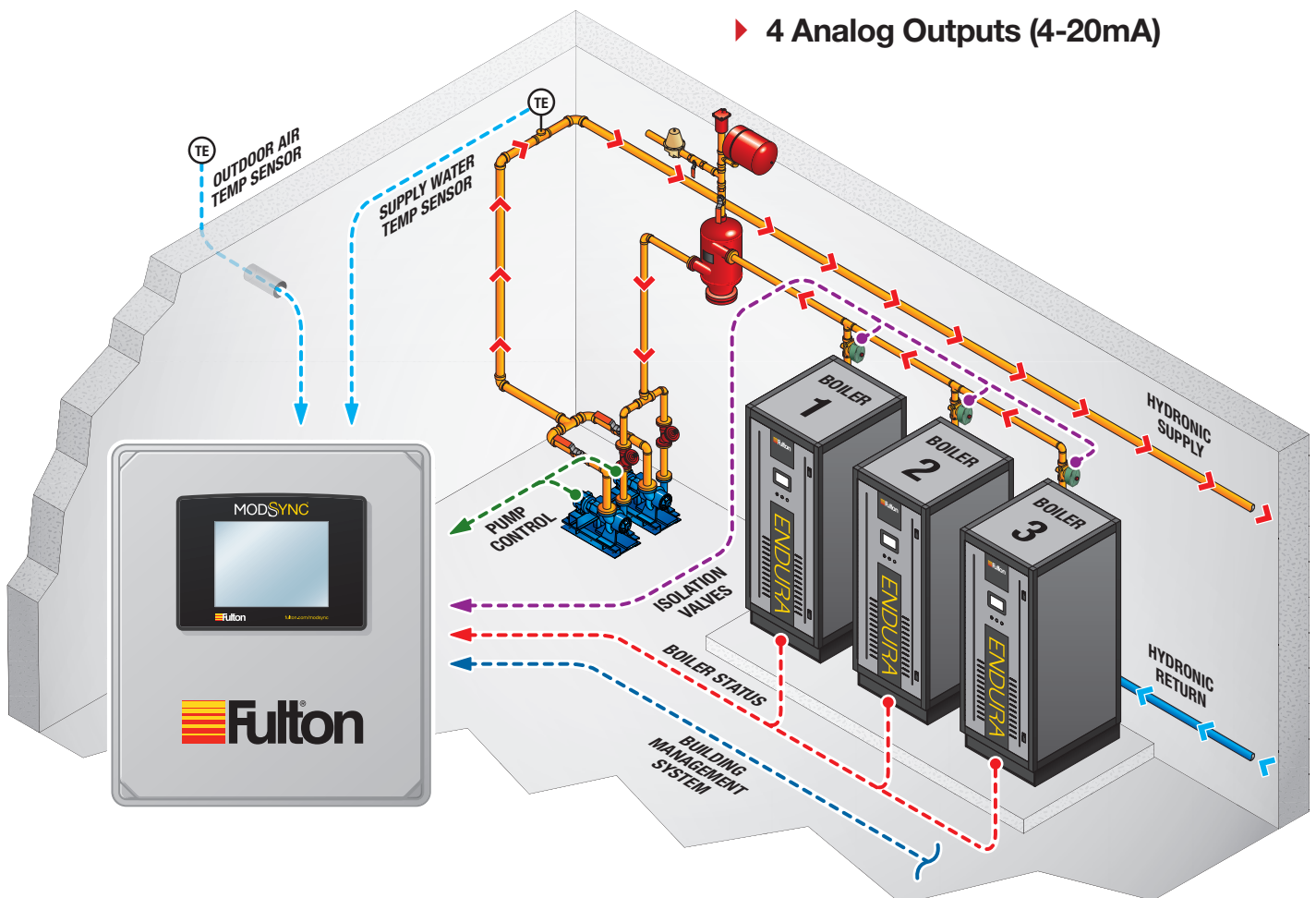
- ▶ Lead-Lag up to 8 Boilers
- ▶ Boiler (Primary) Pump Control
- ▶ System (Secondary) Pump Control
- ▶ Variable Speed Pump Output(s)
- ▶ Outdoor Air Temperature Reset



## Configurable Hardware

ModSync SE features assignable analog and digital I/O for highly-flexible configurations of boilers, pumps, valves and instrumentation.

- ▶ Simple & Highly Flexible
- ▶ 16 Digital Inputs (24VDC)
- ▶ 14 Digital Outputs (24VDC)
- ▶ 3 Analog Inputs (4-20mA)
- ▶ 4 Analog Outputs (4-20mA)



# MODSYNC LX

## Custom Engineered Controls

Control system functions and Sequence of Operation (SOO) are custom tailored to your project's unique requirements. ModSync LX provides the flexibility to satisfy the complex needs of high-performance applications which cannot be met by rigid off-the-shelf options or integrated boiler control systems.

- ▶ 12.1 inch HD Touchscreen
- ▶ Lead-Lag up to 75 Boilers
- ▶ Custom Sequences of Operation
- ▶ Tailored to Unique Applications
- ▶ Extensive Instrumentation Options



## Advanced Metering Capabilities

Track performance or energy savings with options for instrumentation and metering. Strategically plan optimized configurations across changes in utilization and operation.

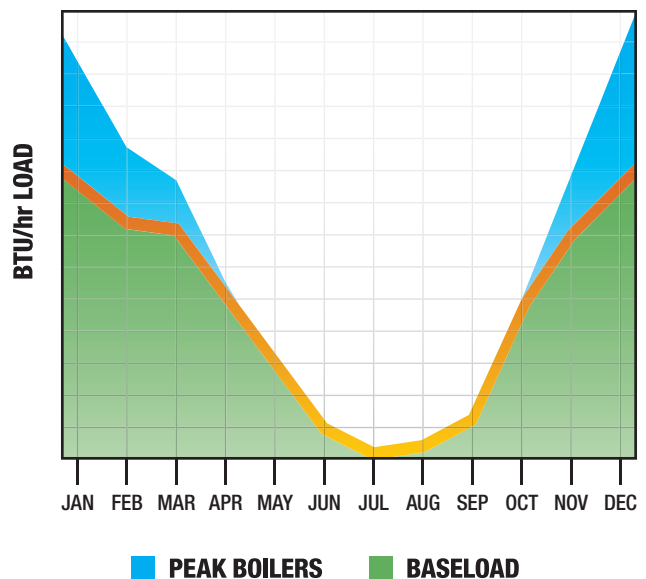
- ▶ BTU Monitoring
- ▶ Flow Rates for Fuel, Water & Steam
- ▶ Temperatures & Pressures

## Simplified Hybrid Plants

The majority of annual heating hours are part-load demands. ModSync LX intelligently leverages the most efficient equipment during the shoulder season, and brings on additional capacity to satisfy peak design-day demands.

- ▶ Virtually any Boiler Combination
- ▶ Automated Plant Redundancy
- ▶ Condensing + Non-Condensing
- ▶ Gas Fired + Electric
- ▶ Gas Fired + Heat Pumps

## SEASONAL PLANT DEMAND



# MODSYNC FW

## Feedwater System Controller

ModSync FW provides unmatched precision and flexibility in automating steam boiler feedwater systems. With advanced monitoring and control features, it ensures optimal performance for feedwater and deaerator tanks, giving operators broad insights into system functionality.

- ▶ 12.1 inch HD Touchscreen
- ▶ Automate up to 4 Pumps with Rotation & Redundancy
- ▶ Dedicated Boiler/Lead-Lag Modes
- ▶ Variable Speed Pump Control
- ▶ Pump Status & Alarm Monitoring



## Make-Up Water Management

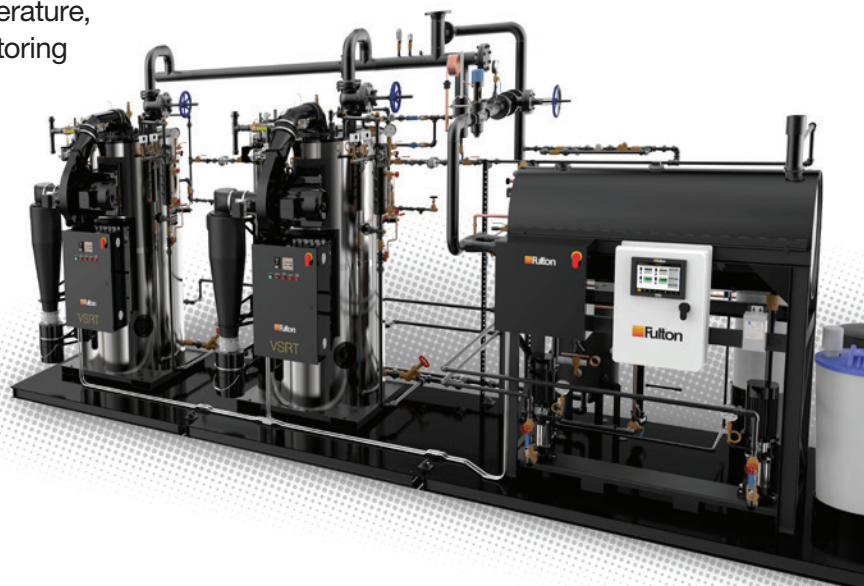
Optional supervision of water flow, valve status, and precision PID modulated make-up. These sophisticated features provide enhanced visibility and control of system performance.

- ▶ Flow Rate Monitoring
- ▶ Solenoid Valve Status
- ▶ Modulated Make-Up Signal

## Cohesive Tank Monitoring

Empower operators with precise oversight of critical tank parameters including pressure, temperature, and level where available. Advanced monitoring capabilities minimize downtime and enhance operational reliability.

- ▶ Tank Temperature
- ▶ Feedwater Header Pressure
- ▶ High and Low Level Alarms
- ▶ Tank Steam Pressure
- ▶ Delta-P or Level Monitoring



# FEATURE LIST

<b>MODSYNC SE</b>	
<b>HYDRONIC (HOT WATER) EQUIPMENT</b>	<b>STEAM EQUIPMENT</b>
<ul style="list-style-type: none"> <li>- Lead-Lag of 2 to 8 Hydronic (Hot Water) Boilers</li> <li>- Support for Parallel or Sequential Modulation Staging</li> <li>- Modbus Communication Protocol</li> <li>- Operator Configurable Assignable Inputs/Outputs (I/O)</li> <li>- Multiple Setpoint Modes (Remote 4-20mA, OAT Reset, Manual, BMS)</li> <li>- Minimum Setpoint Temperature Protection for Oil Burner Firing Mode</li> <li>- Supply and Return Header, and Outdoor Air Temperature Monitoring</li> <li>- System Supply and Return Pressure Monitoring</li> <li>- Outlet Temperature Monitoring (Prevents Nuisance MRHL Lockouts)</li> <li>- Domestic Hot Water Setpoint Priority via Contact Closure</li> <li>- Outdoor Air Temperature Setpoint Reset</li> <li>- Boiler Isolation Valve Control; Optional End Switch Interlock</li> <li>- Constant or Variable Speed Boiler (Primary) Pump Control</li> <li>- System (Secondary) Pump Lead/Lag; Speed Control via <math>\Delta T</math> or <math>\Delta P</math></li> <li>- System Clock with Occupied/Unoccupied Setback Schedule</li> <li>- Automatic Boiler Rotation via Cycle/Run Hour Ratio</li> <li>- Trending Data Logging of Supply, Setpoint and Outdoor Temperatures</li> <li>- Access Password and Screensaver Time Out</li> <li>- Preventative Maintenance Reminders</li> <li>- Alarm History of the Last 100 Alarm Conditions</li> <li>- General Alarm Contact</li> </ul>	<ul style="list-style-type: none"> <li>- Lead-Lag of 2 to 8 Steam Boilers</li> <li>- Support for Sequential or Parallel Modulation Staging</li> <li>- Modbus Communication Protocol</li> <li>- Operator Configurable Assignable Inputs/Outputs (I/O)</li> <li>- Multiple Setpoint Modes (Remote 4-20mA, OAT Reset, Manual, BMS)</li> <li>- Supply Header Pressure Monitoring (Process Variable)</li> <li>- Warm Standby for Idle Boilers</li> <li>- Outdoor Air Temperature Monitoring and Setpoint Reset</li> <li>- System Clock with Setback Schedule Modes</li> <li>- Automatic Boiler Rotation via Cycle/Run Hour Ratio</li> <li>- Forced Boiler Rotation</li> <li>- Running Transition for Seamless Rotation</li> <li>- Trending Data Logging of Supply, Setpoint Pressures</li> <li>- Access Password and Screensaver Time Out</li> <li>- Preventative Maintenance Reminders</li> <li>- Alarm History of the Last 100 Alarm Conditions</li> <li>- General Alarm Contact</li> </ul>
<b>MODSYNC LX</b>	
<b>HYDRONIC (HOT WATER) EQUIPMENT</b>	<b>STEAM EQUIPMENT</b>
<ul style="list-style-type: none"> <li>- Lead-Lag of Hydronic (Hot Water) Boilers</li> <li>- Support for Parallel or Sequential Modulation Staging</li> <li>- Modbus Communication Protocol</li> <li>- Minimum Setpoint Temperature Protection for Oil Burner Firing Mode</li> <li>- Supply Header, Return Header, and Outdoor Air Temperature Monitoring</li> <li>- Outlet Temperature Monitoring (Prevents Nuisance MRHL Lockouts)</li> <li>- Domestic Hot Water Setpoint Priority via Contact Closure</li> <li>- Outdoor Air Temperature Setpoint Reset (Optional Sensor Required)</li> <li>- System Clock with Setback Schedule for Occupied/Unoccupied Modes</li> <li>- Automatic Boiler Rotation via Cycle/Run Hour Ratio</li> <li>- Trending Data Logging of Supply, Setpoint and Outdoor Temperatures</li> <li>- Alarm History of the Last 100 Alarm Conditions</li> <li>- Access Password and Screensaver Time Out</li> <li>- General Alarm Contact</li> </ul>	<ul style="list-style-type: none"> <li>- Lead-Lag of Steam Boilers</li> <li>- Support for Sequential or Parallel Modulation Staging</li> <li>- Modbus Communication Protocol</li> <li>- Supply Header Pressure Monitoring (Process Variable)</li> <li>- System Clock with Setback Schedule Modes</li> <li>- Automatic Boiler Rotation via Cycle/Run Hour Ratio</li> <li>- Trending Data Logging of Supply and Setpoint Pressures</li> <li>- Alarm History of the Last 100 Alarm Conditions</li> <li>- Access Password and Screensaver Time Out</li> <li>- General Alarm Contact</li> </ul>
<b>MODSYNC FW</b>	
<ul style="list-style-type: none"> <li>- Dedicated Boiler or Lead/Lag Control of up to (4) Boiler Feedwater Pumps</li> <li>- Automatic Pump Rotation (Lead/Lag Mode Only)</li> <li>- Feedwater Pump Speed Control (Lead/Lag Mode Only)</li> <li>- Feedwater Pump Status and Alarm Contacts</li> <li>- Modbus RTU Communication Protocol</li> <li>- Feedwater Header Pressure Monitoring (Lead/Lag Mode Only)</li> <li>- Steam Header Pressure Monitoring (Lead/Lag Mode Only)</li> <li>- Tank Temperature Monitoring</li> <li>- Tank High Level and Low Level Alarm Monitoring Contacts</li> </ul>	<ul style="list-style-type: none"> <li>- Tank Steam Pressure Monitoring</li> <li>- Tank Delta-P/Level Monitoring</li> <li>- Make-Up Water Flow Rate Monitoring</li> <li>- Make-Up Water Valve Status Monitoring Contact</li> <li>- Make-Up Water Modulating Valve Control</li> <li>- Boiler 1-4 Call for Water Contacts (Dedicated Boiler Mode Only)</li> <li>- General Alarm Contact</li> <li>- Alarm History of the Last 100 Alarm Conditions</li> <li>- Access Password and Screensaver Time Out</li> </ul>



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[fulton.com/modsync](http://fulton.com/modsync)

Drawings & documentation available online

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