

TrimPAK

Jackshaft Controller with
Fuel-Air Ratio and Oxygen Trim

Improve boiler efficiency

*Reduce fuel consumption &
environmental impact*

Reduce installation & operating costs

Increase safety

- Continuous, automatic adjustment of fuel-air ratio
- Automatic compensation for air temperature and fuel heating value changes
- Output to VFD
- Individual combustion curves for oil and gas
- Separate settings for lightoff and low fire
- Selectable plant demand or drum pressure input
- Online efficiency calculation
- FGR Control Option
- Retransmission of selected variables
- Field Flexibility - enable options as needed
- Pre-engineered and pre-configured with application-specific documentation



STOP BURNING MONEY!

Operating outside the optimum fuel-to-air ratio for your boiler results in excess fuel consumption, damage to firing surfaces, and higher NO_x and CO₂ emissions. TrimPAK makes it easy to upgrade to a safer, more efficient system that can improve boiler efficiency by 5% or more, reduce stack emissions and increase operating safety.

Unlike many other systems on the market, TrimPAK makes it easy, allowing you to leave the jackshaft intact and use a VFD on the FD fan motor for additional savings in installation and electricity. Online Boiler Efficiency calculation and indication, FGR control and retransmission signal are available as options, and can be enabled *in the field* without reprogramming the controller. You can set the controller to receive an input from a Plant Master controller and act as a bias station, or to control based on local Drum Pressure.

TrimPAK also provides safety features such as boiler trip on low oxygen and/or high stack temperature, oxygen trim limits and air feedback to protect your personnel and plant. TrimPAK can reduce NO_x and CO₂ in stack gases, eliminating black smoke and helping you comply with environmental regulations.

STOP BURNING MONEY!

Installing TrimPAK is a cost-effective way to increase safety and reduce fuel, maintenance, and environmental costs.

Reduce Installation & Startup Cost

TrimPAK comes ready to install, with application-specific documentation. All you need to do is enter the operating parameters specific to your boiler. All entries for combustion tests, engineering unit ranges and other commissioning data are made through the front panel of the controller. No special software or external programming device is required for installation, startup, or operation.

Reduce Fuel Costs

Typical jackshaft controls require extra air flow to guarantee safe combustion, resulting in more fuel burned to create the same amount of steam. To match changing load conditions, the air flow must be able to change on a continuous basis. TrimPAK matches changing load conditions, continuously adjusting the fuel-air ratio to provide the right amount of fuel to satisfy plant steam demand and the correct amount of air to burn safely and economically.

Improve Efficiency

Standard controls provided with most jackshaft boilers can't compensate for changes in air temperature and humidity, wear of mechanical parts, or changes in fuel heating value. Having a TrimPAK controller is like performing a new combustion test 24 hours a day, 7 days a week, 365 days a year. TrimPAK can improve boiler efficiency by 5% or more, allowing you to run at maximum efficiency with minimum fuel, often with a payback of less than one year. And having the right amount of air means reducing smoke and creating less NOx and CO₂.

Reduce Boiler Maintenance

Proper jackshaft maintenance should include seasonal combustion testing and cam adjustment, and entering new combustion curves. TrimPAK's continuous adjustments can eliminate these labor costs. High excess air can overheat refractory surfaces, causing them to crumble - and replacing damaged refractory or tubing is expensive. TrimPAK can eliminate or substantially reduce the need for boiler repairs by reducing thermal stress and promoting proper combustion 24 hours a day.

Reduce Electricity Costs

Traditional systems require breaking the jackshaft and installing an air actuator. MicroMod recommends leaving the jackshaft intact and installing a VFD on the FD fan motor to regulate air flow by adjusting fan speed. Using a VFD results in significant horsepower and electricity savings. TrimPAK supports both implementations without modification to control hardware or programming.

SPECIFICATIONS

Process I/O

Analog Inputs

4-20mA, isolated

Drum Pressure*

Plant Demand

Excess O₂*

Stack Temperature (option)*

**with 24Vdc isolated transmitter power*

0-10V, isolated

Air feedback (VFD or actuator)

Analog Outputs, 4-20mA, isolated

Fuel Demand

Air Demand

FGR Output (option)

Retransmission Variable (option)

Discrete Inputs, 110Vac

Fuel Select (oil or gas)**

Purge

Low Fire

Release to Auto

*** does not support co-firing*

Discrete Outputs, mechanical relay, SPST, NO/NO

Boiler Trip (to BMS)

Alarm horn

Communication: RS-485 Modbus RTU (standard)

OPERATING CHARACTERISTICS

Power Supply:

85-250V rms, 50-400Hz

Power Consumption (120V rms, 60Hz, Full load):

50W maximum

PHYSICAL CHARACTERISTICS

Dimensions: 2.87" W x 5.69" H x 15.75" D

(72.9mm W x 144.5mm H x 400mm D)

Panel Cutout: 2.69" W x 5.47" H (68.3mm W x 138.9 mm H)

Weight: Base instrument, no modules - 4.7 lbs (2.13 kg)

With full module compliment - 6.0 lbs (2.72 kg)

ENVIRONMENTAL CHARACTERISTICS

Ambient Temperature Limits: 0 to 50°C

Storage Temperature Limits: -40 to +75°C

Relative Humidity Limits: 5 to 95%, non-condensing

Enclosure Classification: NEMA type 14