Preferred Utilities Manufacturing Corporation is proud to offer our advanced performance, high efficiency, Inject-Aire Low NOx burner. To continue the tradition of industry leading combustion products, the AP Inject-Aire Low NOx Burner is capable of firing natural gas and either light to heavy fuel oils, pulverized coal, biomass solid fuels, digester gas, and ethanol. Other specialty fuels are also possible options that can be explored. The packaging of the burner, flame safeguard/combustion control systems and piping has been designed to eliminate field errors, reduce space requirements, and facilitate maintenance.

Factory demonstrations are always available upon request.

Specifications

**Application**
Single burner: Firetube, Firebox (cast iron sectional), Watertube Boilers or HTHW Generators
Fuel: No. 2 through No. 6, and/or Natural Gas (consult factory for Biomass or waste fuels)

**NOx Emissions**
- Natural Gas: as low as 30 ppmc without FGR
- No. 2 Fuel Oil: Less than 90 ppmc (maximum 0.01% FBN) without FGR
- No. 6 Fuel Oil: Less than 250 ppmc (maximum 0.30% FBN) without FGR

**Burner Efficiency**
- Any Fuel: 1.0 - 2.0% Excess O₂, 50 - 100% Firing Rate (exclusive of “tramp” air)
- VFD Motor Control for maximum electrical efficiency of air and oil

**Operation**
- Turndown: 9:1 on gas firing, 5:1 on oil firing

**Supply Pressure**
- Natural Gas: 4 PSIG (at Burner Piping Train Inlet)
- Fuel Oils: No Pressure Requirement
- Atomizing Media: Not Necessary

**Note:** Consult factory for available pressures outside of the ranges provided.

**Burner Control & Monitoring**
- Parallel/Full Metering Firing Rate Control: BurnerMate Universal-Variable Speed Combustion Air/Oil Flow Control
- Oxygen Sensor: Model “ZP” In-Situ Sensor, reliable zirconia oxide detector
- Monitoring: SCADA/Flex Remote Monitoring and Control System
- Instruments: Standard and optional equipment available

**Additional Options**
- Draft Control
- Drum Level Control
- Low Fire Fuel Changeover
- Dual/Redundant Flame Scanning
- Smoke Opacity Monitoring and Alarm
- Atomizer Pumpback Post-Purge Capability
- Flue Gas Temperature Indication Alarm; Emergency Boiler Shutdown

**Note:** NOx performance is furnace geometry and heat release rate dependant. Lower NOx emissions are attainable by introducing FGR.

Preferred Utilities Manufacturing Corporation
31-35 South Street
Danbury, CT 06810
T: (203) 743-6741
F: (203) 798-7313
www.preferred-mfg.com
Because the AP burner’s design incorporates a VFD for control of FD Fan speed (therefore the fan’s volume and static pressure development capabilities) significant electrical energy reductions are achieved regardless of the fuel fired. Additionally, as its design utilizes cutting edge liquid fuel mechanical atomization and coincidental fuel flow control via a VFD controlled metering pump, significantly greater energy savings can be achieved when firing liquid fuels. Why? Because there is no need for an atomizing media source, and the fuel and/or electrical energy consumption associated with their generation (See Typical HP Savings Graph on this page), or the added maintenance attributable to related equipment such as an air compressor. Further liquid fuel firing energy reductions can be realized if the total vacuum at the inlet of the AP burner’s pump does not exceed 15” mercury (including suction lift and all line friction losses) as all transfer pumping requirements specific to the AP burner are eliminated. This results in an additional electrical savings as the liquid fuel transfer pump horsepower is eliminated as well as the mechanical maintenance attributable to the transfer set.


digital servos are available in output torques from 3 ft-lb to 720 ft-lbs. Each includes an actuator positioner board, ... of position switches. Servos can be used for the following control functions; Natural gas, fuel oil and/or “other gas” control valve(s).

The BurnerMate Universal offers complete boiler control in an economical, off-the-shelf, pre-programmed controller. Separate processors are used for flame safeguard and combustion control for NFPA 85 compliance. Configuration is done in the field using the LCD key pad, the optional touch screen, or our exclusive BMU Edit software running on your PC. The BMU is available as part of a U.L. listed package with most of the leading gas and oil fired burners. Features include advanced flame safeguard with first out annunciation, parallel positioning combustion control with oxygen trim, draft, and feedwater control.

Our SCADA/FLEX Distributed Control System is a robust plant optimizing solution providing the ability to monitor and control plant wide processes from a single location. Plant owners around the country have successfully turned to SCADA/FLEX from Preferred Instruments. SCADA/FLEX Distributed Control systems are designed to provide remote operation, graphic display of information, alarm message display, report generation, historical trending and remote controller tuning.

Digital servos are available in output torques from 3 ft-lb to 720 ft-lbs. Each includes an actuator positioner board, and integral feedback potentiometer. The feedback potentiometer is used to prove servo position thereby eliminating the need for auxiliary proof of position switches. Servos can be used for the following control functions; Natural gas, fuel oil and/or “other gas” flow control valve(s).

Zirconium oxide In-Situ Oxygen Analyzers provide all probe control functions including temperature monitoring, cell temperature maintenance, monitoring, and calibration.

Zirconium oxide In-Situ Oxygen Analyzers provide all probe control functions including temperature monitoring, cell temperature maintenance, monitoring, and calibration.

Zirconium oxide In-Situ Oxygen Analyzers provide all probe control functions including temperature monitoring, cell temperature maintenance, monitoring, and calibration.

Zirconium oxide In-Situ Oxygen Analyzers provide all probe control functions including temperature monitoring, cell temperature maintenance, monitoring, and calibration.

Preferred Utilities provides a wide range of control valves and mounting brackets for reliable and efficient installations. Our FGR valves can dependably meter flue gas delivery to a burner which reduces NOx emissions. The valves are manufactured to meter natural gas, biogas, hydrogen, steam, as well as many different grades of oil including waste oils and combustion liquids.

The BurnerMate Universal can accept one or two flame scanners. They are available in ultraviolet, infrared, and ultraviolet self-checking versions.

The BurnerMate Universal can accept one or two flame scanners. They are available in ultraviolet, infrared, and ultraviolet self-checking versions.

Control Valves

The BurnerMate Universal can accept one or two flame scanners. They are available in ultraviolet, infrared, and ultraviolet self-checking versions.