



Application Story

Vision570™ Turns Up the Heat on Alternative Heating Solution

Biomass is one of the oldest fuels known to man. Although basic, the primitive campfire illustrates the nature of using biomass for power. When biomass is burned, it produces heat. Heat is used to turn water into steam.



With the help of Unitronics' Vision570™, the MAX OX™ boiler by *Total Energy Solutions LLC* has become the latest in alternative fuel heating solutions by burning a variety of Biomass fuels. *Total Energy Solutions LLC* was in need of a cost effective and easy way to implement a control/display solution that allowed for customizable options. Other requirements for the PLC included multiple PID loop possibilities, panel space, remote access, and simple software. "The Unitronics line of PLC offered cost effective answers to all of their requirements." Said Unitronics distributor Rick Gallimore of Innovative Automation and Controls, Inc.



In order to maximize the boiler's combustion efficiency, the controllers built in PID loops were used with an oxygen sensor to control the furnace's exhaust-gas oxygen content, as well as the combustion process. Another loop was used to control the feed of fuel material based on the oxygen content of the exhaust gasses.

Accessible via the controller's touch screen, are real-time gauge readings and alarm conditions. *Total Energy Solutions LLC* also programmed the built in HMI to allow the user to access settings for auger speeds, feed cycle timers, draft fan percentages, ash auger percentages and the boiler



set point. All settings operate in an automatic or manual mode. Safety sensors have been implemented to monitor and override operations if conditions become faults. Thermocouple and RTD sensors closely monitor boiler, supply, return and stack temperatures.

Matthew Aungst , co-owner of *Total Energy Solutions, LLC* says that overall, "the ease of use and flexibility of the Unitronics products has allowed us to easily

take this eco-friendly boiler from a dream to a prototype to a finished product in a matter of only eight months.”