



Fireeye Nexus is a "state of the art", fully integrated, burner management and combustion management controller.

The controller (pictured right) provides user configurable, control and safety monitoring of the complete burner firing process. Local user access is via a 20 character, vacuum fluorescent, full text message display and tactile keypad. The controller modulates the firing rate of the burner while simultaneously adjusting independent positioning motors. This maintains the optimum fuel-air ratio and efficiency throughout the whole of the burner firing range, via the selected fuel profile. Servo positioning accuracy of 0.1 of an angular degree is achieved and several fuel profiles can be selected. Additional positioning motor and/ or variable speed drive output channels, are optionally available.

Full on board system diagnostics, continually monitor the safe operation of all system components. Positioning motors are continually cross-checked using shaft mounted precision potentiometers and all measuring sensors are fully approved self-checking devices.

The Nexus control system allows any burner new or old to be optimized to the fullest extent possible within the mechanical constraints of the burner mixing head. Once programmed, the parameters of the system and the selected fuel/air ratio are constantly and precisely maintained. Two selectable PID control loops ensure that the minimum amount of fuel is used to meet the output load requirements at all times.



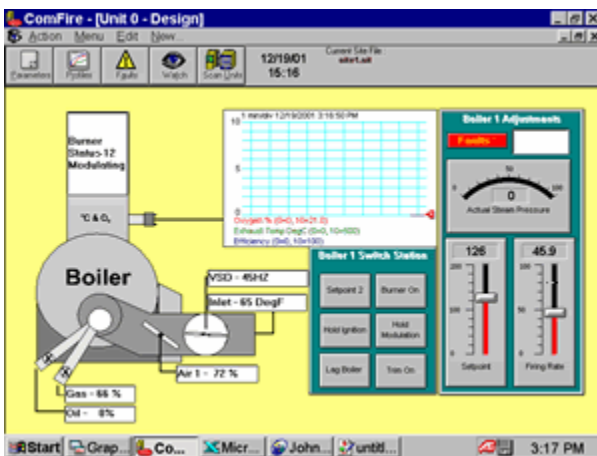
With over 60 years experience in the combustion industry, Fireeye has begun the process of introducing the system into the field, both in the US and Europe. Applications range from smaller burners, running school heating, to factories, to larger industrial applications



The Fireeye Nexus basic system can be expanded with the addition of the NX280PK zirconium based sampling probe. This provides the added benefit of an industry standard, in-situ, fast response probe, measuring and displaying excess oxygen levels, flue gas temperature and combustion efficiency. Desired combustion levels can be independently programmed for each of the programmed points from low to high fire on the burner. In addition independent levels for each of the fuel profiles can be selected.



Continuous fast track measurement from the analyzer is used to detect deviations from commissioned oxygen levels. The Nexus controller automatically trims the air damper on the burner constantly maintaining the commissioned oxygen levels. The operation of the trim system ensures that changes in barometric conditions or fuel pressure and temperature fluctuations do not negatively effect the optimum combustion levels. The zirconia probe has many advantages over conventional extractive systems. No pump or sampling tubes are required so the unit is faster response and has no moving parts to fail. In addition zirconia type technology has been available for many years and is well proven technology.



A full remote monitoring and control package is available for direct communication with up to 10 Nexus Systems. The software is Windows based allowing configurable graphics and text display as well as trending, logging, graphing, alarm handling, upload and download of commissioned data and storing of all set up parameters and options from the various controllers. Set-point adjustment, boiler on-off control and many other functions are available in the standard package.