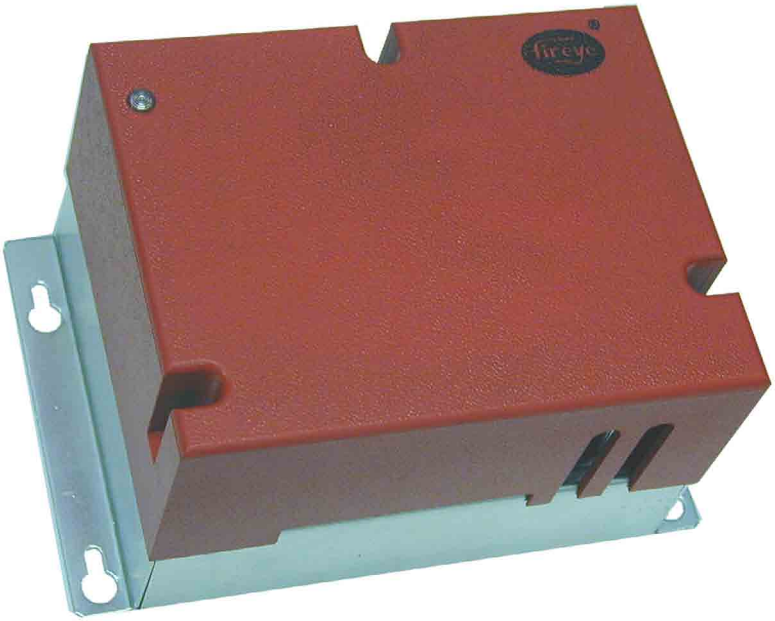
Nexus 6100

HMA INSTRUMENTATION

Small But Mighty

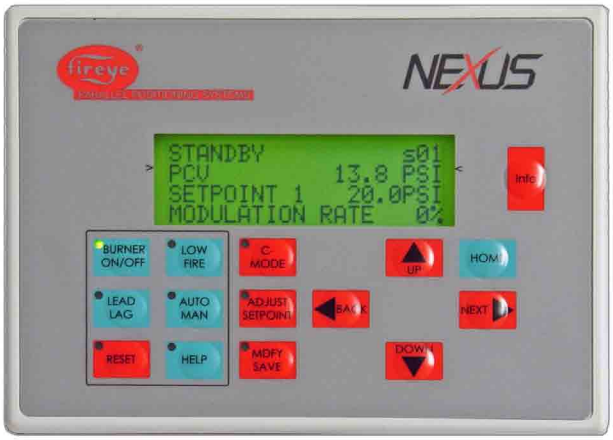
The newest fully integrated parallel positioning system from Fireye. NX6100 packs the ability to control up to ten servomotors and VSD in the industry's smallest footprint, 5 x 8.25 x 3.75 inches!



FEATURES

- **Integrated Fully functional and Configurable Flame Safeguard**
- **Built-in UV, UV Self Check and IR Detection**
- **Compatible with Fireye Integrated Insight and Phoenix Scanners**
- **Twelve Key Keypad eliminates the fuel select and burner switch**
- **Industrially Hardened 10.4 inch Color Touchscreen Option**
- **Internal slot for optional VSD or MODbus RTU card**
- **Two VSD and One 4-20 mA. Outputs are standard on VSD card**
- **Optional External Oxygen Trim Interface**
- **Fireye Proven Zirconia Oxide Probe or Third Party Probe**
- **The Widest Range of Servomotors (24 and 120 volt) Available**
- **Two PID control loops**
- **Built In Sequencing for up to Four Boilers**
- **Four fuel profiles**
- **Nine safety rated fully configurable digital inputs**
- **CanBus two wire communication simplifies servo and display wiring**
- **Function Block Programming of PID with Optional Abacus Software**

The Fireye NEXUS NX6100 Integrated Controller is a microprocessor based, Flame Safeguard and parallel positioning combustion controller built into one compact, user configurable package. The system consists of the Controller, Display, Temperature / Pressure Sensors, Servo-Motors and optional ComFire Software.



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FLAME SAFEGUARD

The Flame Safeguard portion of the control package provides burner sequencing including safestart check, proof of main valve closure, selectable main gas safety proving sequence, supervised pre-purge, low fire starting position, pilot and main trials for ignition, main flame supervision, and post purge. Safety event timings are provided to meet North American and CE Standards. Time proven Fireye Flame Scanners and amplification circuits using UV, UV-Self Check and Infrared sensors, provide fast reliable scanning of most commonly burned fuels. Seven user defined auxiliary inputs provide supervision of safety critical and non-safety critical inputs.

PARRALLEL POSITIONING

Control of up to four profiles using an independent servo-motor for each controlled element.

The controller allows precise positioning, accurate to 0.1o, of the fuel and air controlling devices over the burner's firing range. Each profile can be defined to include up to 10 servo-motors. Profiles can be configured to share common fuel servo-motors or as independent (one profile per fuel) and are not limited by fuel. Up to 24 positions per profile including: Closed, Purge, Ignition (Preferred Start), Low Fire and an additional 20 intermediate points from low to high fire. Each individual servo-motor's position and speed are verified and lockout will occur should either of these parameters be exceeded. All servo-motors are controlled via secure CANbus communications link. Simple four-wire CANbus wiring simplifies installation, reduces mistakes and speeds commissioning.

TOUCHSCREEN

The NXTSD104 10.4 inch Touchscreen display provides a clear overview of the entire system.

Commissioning and operation of the NX6100 is made simple by familiar icons and easy to understand icon buttons. All functions of the system are displayed along with a comprehensive alarm logging and 10 pen trending facility. The NXTSD104 is internet ready for remote access and screen update. The NXTSD104 also allows the Boiler Operator access to the Auto/ Manual selector, Motor Data (servo positions) and other operational parameters such as System Sequence Position, Valve Proving Sequence Status, Gas Pressure, Flame Signal, Modulation Rate and Setpoint, as necessary.

VACUUM FLORESCENT DISPLAY

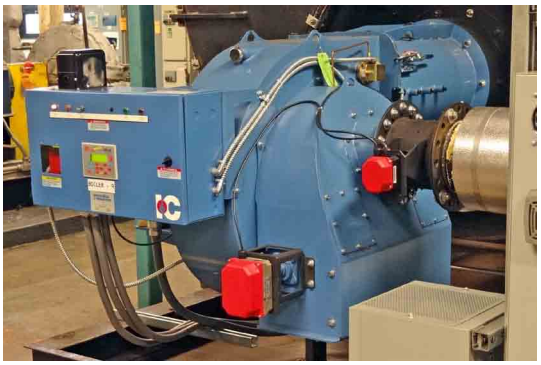
The NX6110 Vacuum Florescent Display allows commissioning and current status of the system through the use of its tactile membrane keypad. Multi-function keys allow the commissioning engineer the ability to access the various Ratio Modes and Option Select menus. The two line 20 character Vacuum Fluorescent Display clearly illuminates the Control Variable, Firing Mode, Fuel Selected and Hours Run. Other system functions are also available.

SENSORS

Modulation control is provided via the pressure/ temperature sensor's input. The Fireye NX1021, NX1030, NX1034 NX1040 and NX1044 series sensors provide checking circuits for fail safe operation. PID setpoints are available for the chosen modulation input, selectable up to two decimal points. Track modulation is available for those applications requiring less precise control.

MULTIPLE BOILER SEQUENCING

Is accomplished through an RS485 Communications bus without additional software. Lead/Lag and Standby set points for up to four (4) boilers can be configured from the 12 key keypad or the Touch-screen. Lead boiler selection can be selected through the keypad, digital input or via optional Comfire II software.



INS-DS-0010. JAN 2017

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