The first name in flame monitoring and combustion control

fireye

Flame detection and combustion products for the

Petrochemical, Refining and Pulp & Paper industries
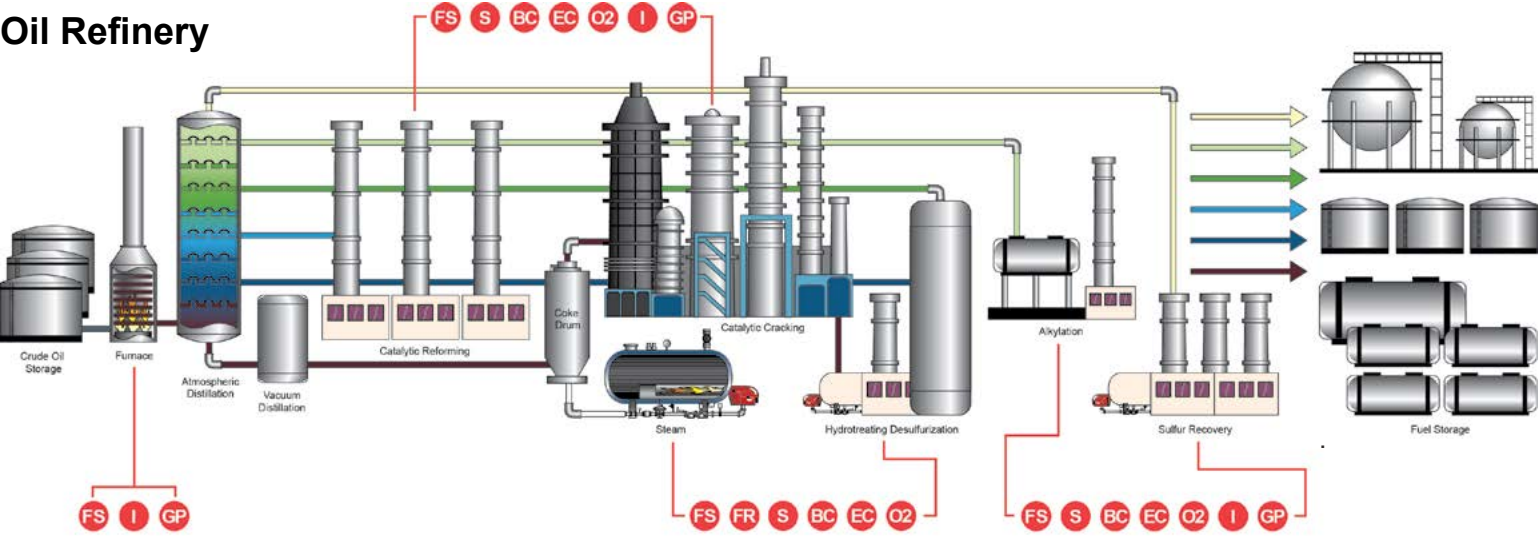
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Applications

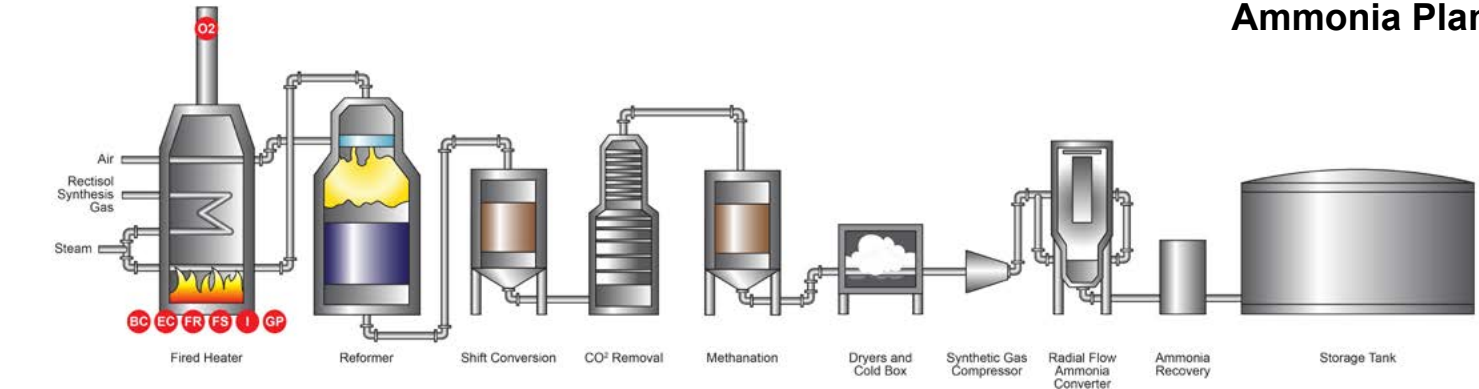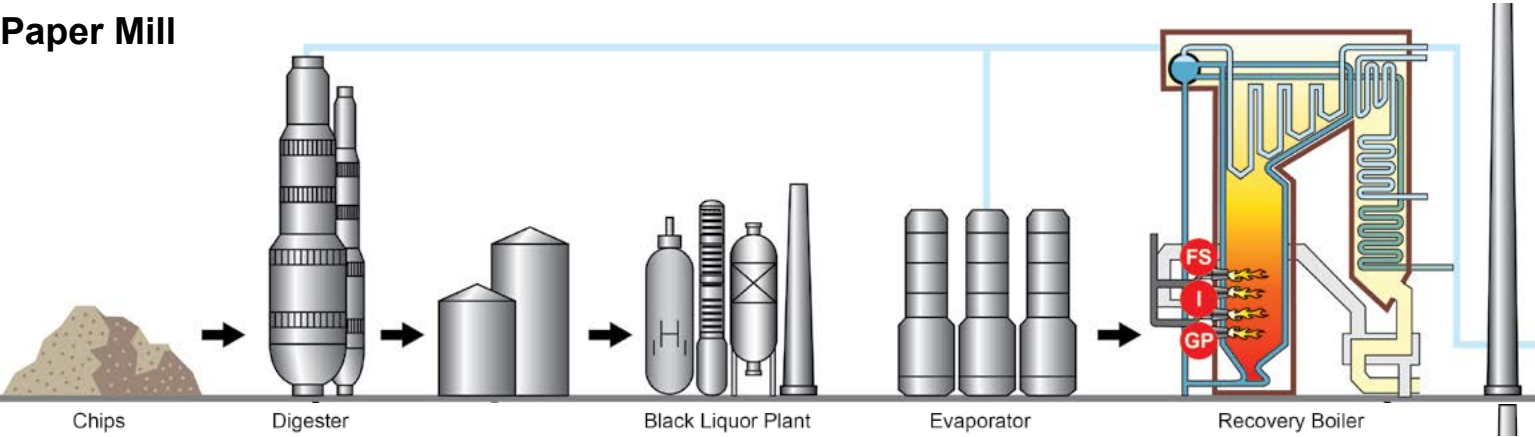|			
FS Flame Scanners	**BC** Burner Controls	**I** Igniters	**S** Servos
FR Flame Rods	**EC** Efficiency Controls	**GP** Gas Pilots	**O2** Oxygen Sensors

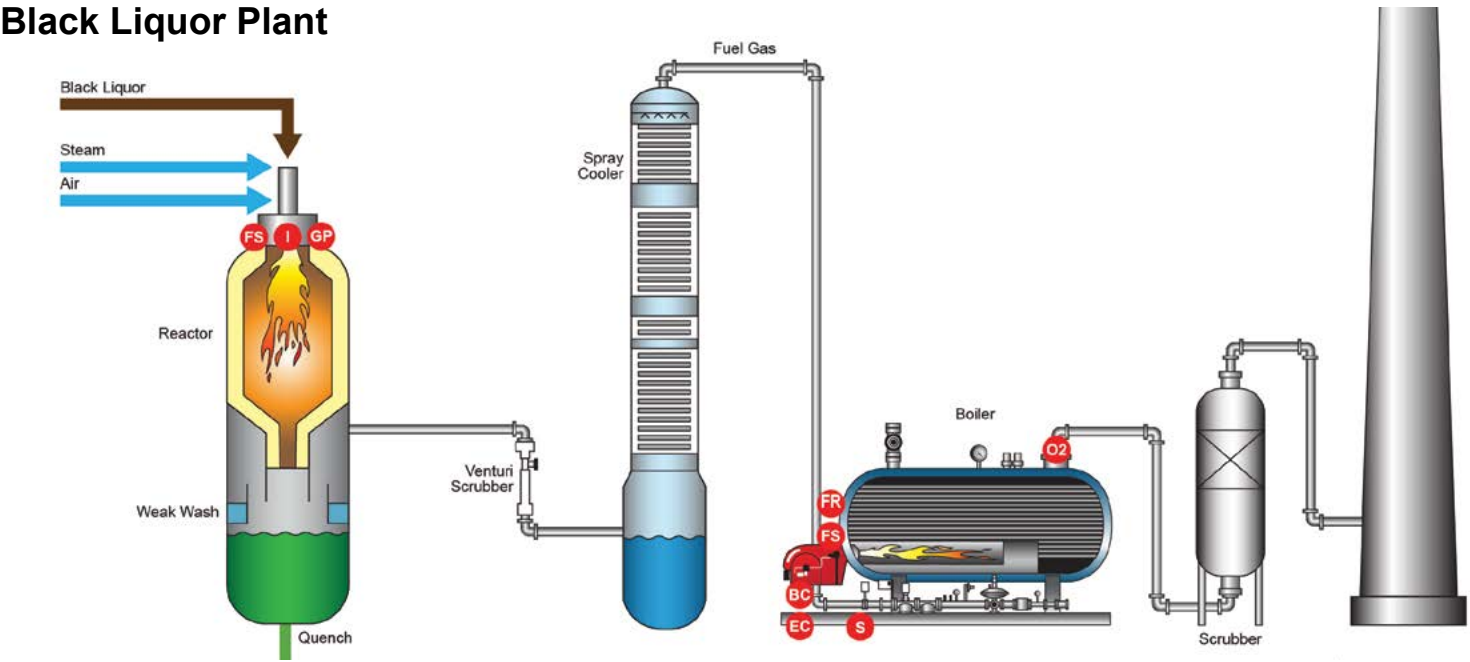## Oil Refinery
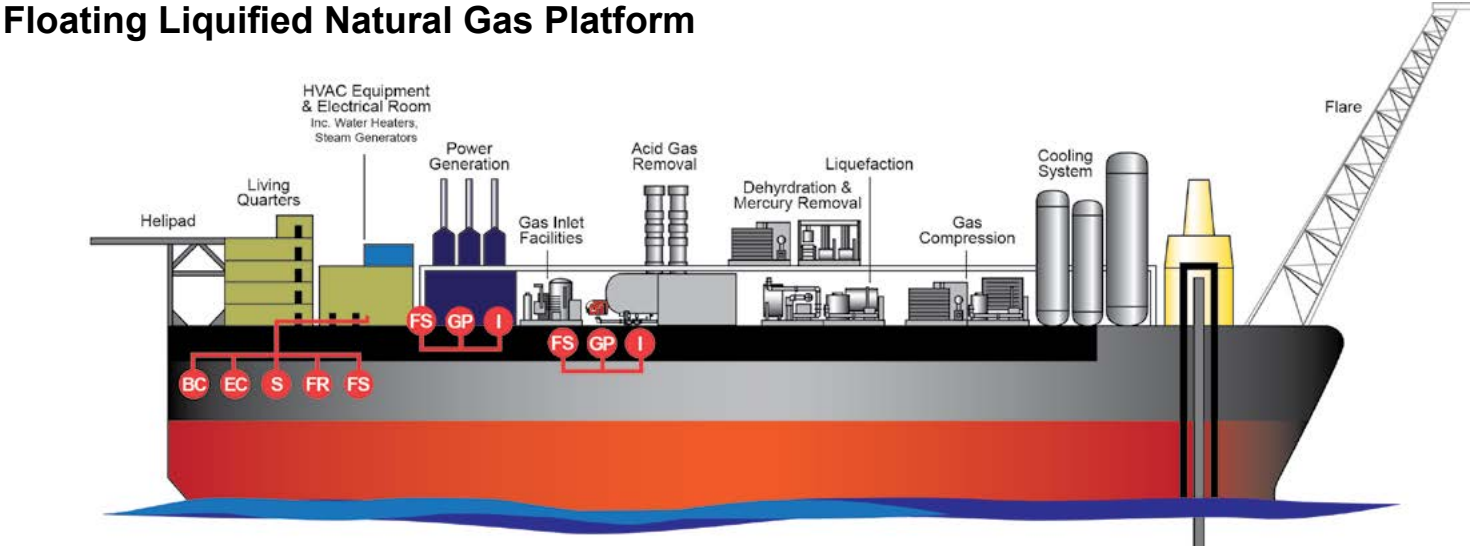
Sulfur Recovery Unit
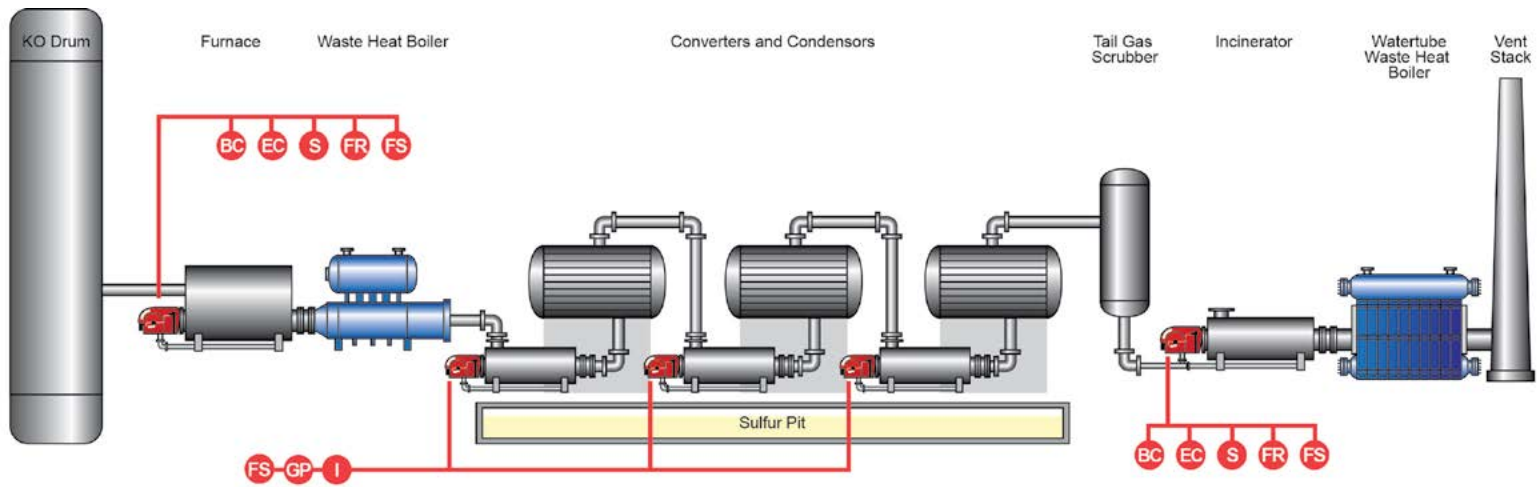
Ammonia Plant

Paper Mill

Black Liquor Plant

Floating Liquified Natural Gas Platform

Whether your application requires high flame sensitivity, high flame discrimination, high safety integrity, explosion proofing or worldwide agency approvals, Fireye has the product to fit the need.

Reliable combustion management product range

FS Flame Scanners

I Igniters

INSIGHT SCANNERS

The Fireye InSight™ Type 95IRS4, 95UVS4 and 95DSS3 flame scanners are micro-processor based flame scanners utilizing solid state infrared (IR), ultraviolet (UV) or dual (IR and UV) sensors.

The InSight Type 95 flame scanners incorporate an internal flame relay with adjustable ON/OFF thresholds, thereby eliminating the need for a remote flame amplifier.

The InSight scanners detect the presence or absence of a target flame in single or multi-burner applications.

Features:
- Integrated design includes internal flame relay and 4-20mA output
- Keypad/display for programming
- Remote communications and file select capabilities
- Programmable flame flicker frequency, sensor gain, pull-in and drop-out set points, and FFRT
- 95DSS3 Infrared transmitter option

Specifications:
- 95IRS4 infrared sensor: 700 to 1700 nm
- 95UVS4 ultraviolet sensor: 295 to 320 nm
- 95DS dual sensor: 295 to 320 & 700 to 1700 nm
- Supply voltage: 24 VDC
- Housing: NEMA 4X, Class I, Division 2, Groups A, B, C & D
- Ex d IIC T6 ATEX
- 95IRS4, 95UVS4 & 95DSS3: SIL3

PHOENIX SCANNERS

Fireye Phoenix 85UV, extended 85UV (K3 visual light) & 85IR QD self-checking scanners are used to detect ultraviolet emissions from fossil fuel flames such as natural gas, coke oven gas, propane, methane, butane, kerosene, light petroleum distillates and diesel fuels. They are suited for application to duct burners, industrial gas burners, refinery applications ignition systems and Low NOx detection and for continuous or non-continuous burner operation.

The Fireye Phoenix type 85 QD flame scanners are microprocessor based devices utilizing a solid state flame detection sensor. The Phoenix flame scanners incorporate an internal flame relay with automatically set ON/OFF thresholds, thereby eliminating the need for a remote flame amplifier or flame switch.

Features:
- Automatic flame characterization
- Optimum gain and flicker frequency detection
- Fully automatic programming
- Easy Installation
- Streamlined user interface, simplifies operation
- Flame learn cycle completes in less than one minute
- Background flame characterized in less than one minute

Specifications:
- 85UV Ultraviolet sensor: 295-320 nm
- 85UV Ultraviolet extended sensor: 310-500 nm
- 85IR Infrared sensor: 830-1100 nm
- Supply voltage: 24 VDC
- Housing: NEMA 4X, Class I, Division 2, Groups A, B, C & D
- Ex d IIC T6 ATEX

SIMPLICITY SCANNERS

Fireye 65UV5 self-checking scanners are used to detect ultraviolet emissions from fossil fuel flames such as natural gas, coke oven gas, propane, methane, butane, kerosene, light petroleum distillates and diesel fuels.

The Fireye 65UV5 flame scanner incorporates an internal flame relay with a fixed ON/OFF threshold thereby eliminating the need for an external flame amplifier. Models are available with a four-second or a one-second flame failure response time (FFRT).

The Fireye 65UV5 flame scanner is powered by 24 VDC and includes a quick disconnet 10-foot (3 meter) four-conductor cable. A color-coded internal LED indicates flame status and alarm condition. This can be viewed through the removable rear access screw opening.

Features:
- Fully integrated design includes internal flame relay
- No programming, minimal setting up, "out of the box" operation
- Superb detection, sensitivity and wide angle of view
- Field proven and reliable technology
- Worldwide safety agency approvals
- Rugged NEMA 4X (IP66) housing
- Truly economical solution
- Two versions covering world-wide applications

Specifications:
- 65UV5 Ultraviolet sensor: 190-270 nm
- Supply voltage: 24 VDC
- Housing: NEMA 4X, Class I, Division 2, Groups A, B, C & D
- Ex d IIC T6 ATEX

45UV5 SCANNERS

Features:
- Ultraviolet tube, sensitivity deep in the UV range for improved discrimination
- Adjustable sensitivity based on position of UV tube

Specifications:
- Optical range: 190-270 nm
- Supply voltage: 120 VAC, provided by 25SU3/25SU5 amplifier
- Available in NEMA (Class I, Division 2, Group C and D) and Cenelec approved explosion proof housing (Ex d IIC T6)

UV1AL, UV90L & UV5 SCANNERS

Specifications:
- Optical range: 190-270 nm
- Supply voltage: 560 VAC (supplied by control)
- Mounting threads: 1/2" NPT
- Operating temperature: -40°C to 94°C (40°F to 200°F)
- Available in NEMA (Class 1, Div 2, Group C and D) and Cenelec approved explosion proof housing (EEx d IIC T6)

48PT2 SCANNERS

Specifications:
- Optical range: low frequency (12-25 Hz) in the infrared range
- Supply voltage: 7 VDC (supplied by the control)
- Operating temperature: -40°C to 60°C (40°F to 140°F)
- Rated for NEMA 4X
- Tray Cable – Exposed Run (TC-ER) and complies with the Standard for Metal Clad Cable, UL 1569

SUREFIRE II HESI

The SureFire II High-Energy Ignition System is used for direct spark ignition of most gas or liquid fuels used in oil or gas igniters or main burners. The High-Energy Ignition System is available in various versions. To ensure optimal operation, the first part of the ignition tip should always be in an ignitable fuel-air mixture, during all modes of operation.

SUREFIRE II HTI

The Fireye SureFire II High Tension Igniters are a reliable source of ignition for natural and forced draught gas igniters and pilots as well as small capacity gas burners. They are designed to ignite a mixture of various types of gaseous fuels with air.

Features:
- Selectable voltage (115/230 vac)
- Visual indication of spark operation
- Proof of spark relay
- Choice of system, Integrated, junction box or quick disconnect
- Spark & sense feature (-SS) allows for flame sensing via flame rod
- Thermal cutout protection integrated in transformer
- ATEX options
- Compact "co-axial" retractors
- Safety bleed resistor discharges capacitors in 120 seconds.
- Portable options

SUREFIRE II HDHEI

The SureFire II Heavy Duty High Energy Igniter (HDHEI) is designed for direct ignition of gaseous or liquid fuels like light and medium oil, heavy oil which can be steam, air or mechanically atomized.

The igniter creates three sparks per second of a very high energy of 24 joules per spark, sufficient for self-cleaning of the rod tip and for direct firing of heavy fuels in particularly difficult operating conditions e.g., wet, dirty (slag, ash, unburned fuel) environments. This high energy igniter is intended for intermittent operation as a Class 3 special igniter.

Features:
- Selectable voltage (115/230 vac).
- Visual indication of spark operation
- Proof of spark relay
- Choice of system, Integrated or Kit or Kit with Quick Disconnect
- Thermal cutout protection integrated in transformer
- ATEX options

µM-SERIES

MicroM Flame Safeguard controls are compact, modular burner management systems designed to provide automatic ignition and continuous flame monitoring for ignition systems firing any type of fuel.

Features:
- Diagnostic LED indicator lights
- Selection of plug-in programmers and amplifiers for greater flexibility
- Compatible with UV, UV self-check, IR, flame rod, photo cell, and cad cell
- Remote reset capability
- Supply voltage: 120 VAC or 230 VAC

MBCE FLAME SENSOR

The Fireye MBCE-110/230FR Flame Sensor modules provide both visual indication and electrical outputs that signal the user regarding flame presence in a combustion chamber.

The module uses Fireye flame rods to sense flame presence independently or as components in a burner management system.

The MBCE Flame Sensor provides a cost effective, self-checking method of monitoring flames using the ionization principle.

Features:

- CE approved
- Self-contained: 110/230 VAC, 50/60 Hz operation
- Flame Rod compatible
- Flame ON/OFF LED indicator
- 4-20mA permits direct reading of flame signal strength
- Uses CE approved 11-pin relay base
- Panel surface or DIN-rail mounting
- Self-check

BURNERPRO

The BurnerPRO™ provides the proper burner sequencing, ignition and continuous flame monitoring for commercial heating and process equipment firing oil and gas fuels. The system is designed for use in non-permanent operations that requires burner recycle at least once every 24 hours. Seven SMART LEDs provide current operating status and lockout information in the event of a safety shutdown.

Features:

- CE approved
- Self-contained: 110/230 VAC, 50/60 Hz operation
- Diagnostic LED indicator lights
- Selection of programmed operation timings for greater flexibility
- Compatible with UV and flame rod,
- Modbus and valve prooving options

NEXUS NX6100 / PPC6000

The Fireye NEXUS NX6100 / PPC6000 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, Servomotors and optional Comfire Software.

Features:

- Integrated fully functional and configurable flame safeguard
- Built-in UV, UV self-check and IR detection
- Compatible with Fireye InSight and Phoenix scanners
- Twelve key keypad eliminates fuel select and burner switches
- Industrially hardened 10.4" color touchscreen option
- Internal slot for optional VSD or Modbus RTU card
- Two VSD & one 4-20mA outputs standard on VSD card
- Optional external Oxygen Trim Interface
- Fireye proven Ziconia Oxide Probe or Third Party Probe
- 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
- Function Block Programming of PID with Optional Abacus Software

Reliable combustion management product range

NEXUS NXF4000 / PPC4000

The Fireye NEXUS NXF4000 / PPC 4000 is an advanced microprocessor based fuel/air ratio controller for industrial or commercial burners firing gaseous or liquid fuels.

Four programmable profiles are available that determine the positional relationship between all servo motors across the firing range of the burner.

The servo motors are controlled via a secure Modbus communications link.

Features:

- 4 line 40 character dot-matrix backlit LCD Display
- Four fuel profiles
- Up to ten 24 volt servomotors
- Wide range of servomotors; 3, 15, 37 ft/lb
- Modbus control means easy 4 wire hook up
- Optional O2 trim, optional variable frequency drive
- Optional communications platforms
- Four user defined digital inputs
- Two PID control loops

O2 PROBE

The Fireye NXCES02 oxygen probe is designed to be used with the PPC4000 and provides continuous oxygen concentration readings allowing the PPC4000 to trim the air or fuel servo to obtain optimum combustion efficiency.

The NXCESO2 offers fast, accurate response and excellent reliability when mounted in accordance with the installation manual.

Features:

- Zirconium O2 trim
- Exhaust temperature measurement
- High performance zirconium dioxide replaceable probe
- Wide band oxygen sensor
- Automatic detection by the PPC4000 via Modbus-RTU
- Available in 3 lengths
- Modbus interface
- 3 status LED's

FX SERVOS

The Fireye FX Series servomotors are precision actuators designed to accurately position valves and dampers. The servomotor interprets Modbus commands from an external control and uses a stepper motor to drive to the commanded position. A feedback potentiometer provides continuous positional information that can be read and cross checked by the external control.

Features:

- Wide range of servomotors; 3, 15, 37 ft/lb
- 24 volt nominal supply voltage
- NEMA 4 IP 65 protection rating
- Modbus compatible communications protocol.
- 100° Maximum angle of rotation
- Available with quick disconnect connectors or in a field wireable version.

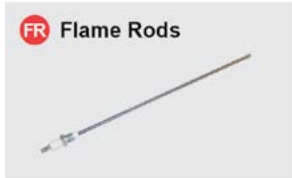## SUREFIRE FORCED DRAFT & NATURAL DRAFT GAS PILOTS

Fireye SureFire II gas pilots are reliable and suitable for a majority of power generation, refinery and petrochemical applications.

The SureFire forced draft gas pilots are available with an outer diameter of 32 or 48 mm, for intermittent or continuous duty and class 1 to 3 applications. The pilot is constructed of high-quality materials and each unit is checked and tested before dispatch. Provides a stable flame for ignition repeatability and no moving parts help ensure long, troublefree operation with low maintenance costs.

Features:

- Natural gas (NG), propane gas (PG) or hydrogen options
- Outer diameter 32 or 48 mm
- Suitable for intermittent or continuous duty
- Suitable for Class 1 to 3 applications
- Designed for ignition of gas or oil main burners
- Compatible with 16 mm outer diameter ignition rods with a coaxial electrode arrangement
- Compatible with Fireye high energy spark igniters (HESI)
- Compatible with Fireye high tension spark igniters (HTI) complete with spark & sense functionality (ionization flame detection)
- Special design provides a protected ignition and flame stabilization zone in air tube

69ND1 FLAME RODS

The Fireye flame rod (69ND1) is made from high temperature resistant metal and can be used to detect gas flames only. Avalible in multiple lengths.

BURNERLOGIX

The Fireye BurnerLogiX™ System is a microprocessor based burner management control system designed to provide the proper burner sequencing, ignition and flame monitoring protection on automatically ignited oil, gas, and combination fuel burners. In conjunction with limit and operating controls, it programs the burner/blower motor, ignition and fuel valves to provide for proper and safe burner operation. Through SMART LED's, the control provides current operating status and lockout information in the event of a safety shutdown. Optional VFD and LCD displays are available that may be either plugged in or mounted remotely to give full language descriptors of current status and diagnostic lockout information.

Features:

- Non-volatile memory retains history and present position
- Consistent flame signal read-out
- Read-out of main fuel operational hours and cycles
- Modbus communications via RS485 multi-drop link
- Proof of fuel valve closure during off cycle
- Burn-in time of program parameters after 8 hours
- Operator programmable run/check switch
- Remote display mounting with NEMA 4 protection
- Remote reset capability
- Programmable communication baud rate readout

Fireye is a leading manufacturer of flame safeguard controls and burner management systems for commercial and industrial applications throughout the world. Our products can be found in a variety of public buildings, commercial properties, power plants, pulp and paper mills, petrochemical facilities and food processing plants.

For more information, please visit fireye.com.

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