

# DFS-REFiber Flame Scanner

*Advanced Technology For Safety & Efficiency*

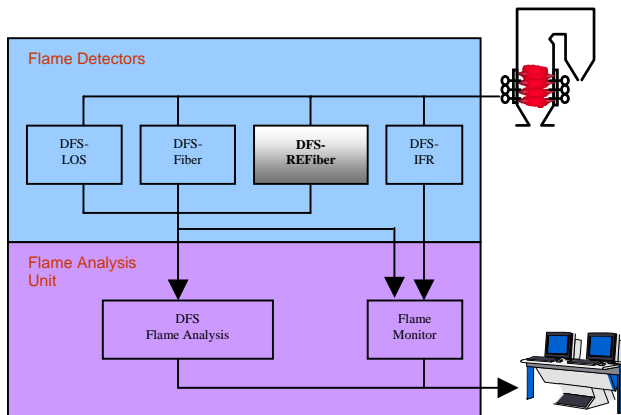
The ABB Inc. DFS-REFiber Flame Scanner is a rugged, high temperature multi-fuel scanner designed for use in applications where burner ambient temperatures are abnormally high. In particular the DFS-REFiber scanner is ideally suited for the extreme environments found on cyclone burners, side ignitors (tangential boilers), and land based combustion turbines.

As with all DFS scanners the DFS-REFiber Flame Scanner has been ruggedly designed for years of reliable service in the power plant environment.

The DFS-REFiber Flame Scanner uses high temperature fiber optics to **RE**move the flame scanner head electronics away from the hot burner or ignitor. A lens is mounted to the burner front using a 1/2" or 1" cam groove style connector. The lens focus light from the burner flame into a fiber cable, which transmits the light from the optical head to a photodiode electronics card. The electronics card converts the collected light energy into an electrical current signal. The photodiode electronics card is safely mounted in a protective NEMA 4 enclosure well away from the burner hot zone. Fiber cable lengths of 9 feet and 30 feet are available. The fiber optic cable assembly consists of a fiber bundle encapsulated in a 3/8" stainless steel over braid flex cable. It is installed in high temperature liquidtight conduit for even more mechanical protection. The



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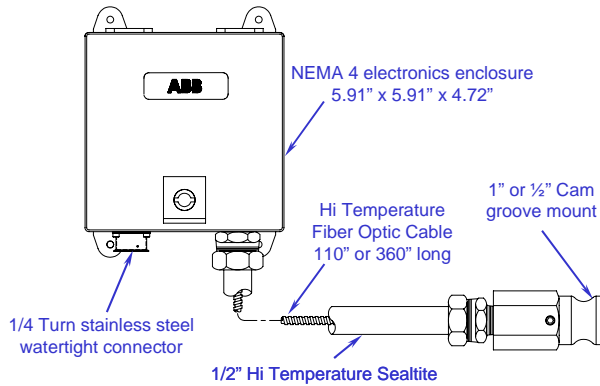
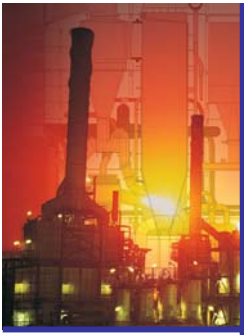
photodiode electronics converts the light energy from the cyclone, ignitor, or combustor into a current signal. This photodiode circuit has a wide dynamic light range, which makes the scanner very sensitive to flames under all operating conditions.

The flame current signal output can be transmitted up to 5,000 feet to the field terminal strips on a remotely mounted Flame Analysis Unit. Either a DFS or Flame Monitor Flame Analysis unit can be used. Typically, DFS Flame Analysis units are used on Cyclones and Combustion turbines where-as the Flame Monitor is normally used with an ignitor.

In hazardous area applications, intrinsically safe barriers can be used to isolate the photodiode electronics without any adverse effects on scanner sensitivity or performance.

The Flame Analysis Unit determines whether the scanner is observing a flame that is unstable, on, or off. The intensity and flicker frequency of the flame signal is measured using an ABB Inc. proprietary algorithm. If parameters exceed their programmed trip points, flame is proven for that flame scanner.





***Detail of DFS REFiber Flame Scanner***

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**ABB DFS-Fiber Flame Scanner Specifications:**

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Application Type	Cyclone Boilers, Tangential Fired Boilers, Combustion Turbines
Flame Type	Cyclone main and lighter flame, Side ignitors, Combustor Flame
Fuel Type	Natural Gas, Oil, or coal
Detection Method	Infrared (IR) or visible light (VL)

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For more information contact your local ABB Sales Representative or:

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