

Turbine Combustion Flame Sensor



Turbine Sensor

VFS-2000

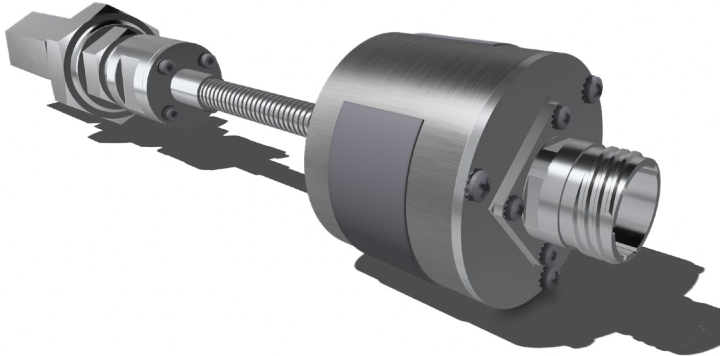
Fireeye's flame sensing expertise now extends to combustion turbine applications & flame sensors designed for the turbine environment.

Fully sealed, high temperature, high pressure, sapphire window at the combustor with high temperature fiber optics for precise flame signal transmission. Remote electronics & solid-state ultraviolet (UV) sensitivity.

Fireeye turbine combustor flame sensor provides a 4-20mA flame signal output. Response time to Flame On or Flame Off is 175ms (typical < 75ms). Sensor upgrades tube style and other turbine flame sensors with a reliable high temperature rated installation at the turbines.

Features

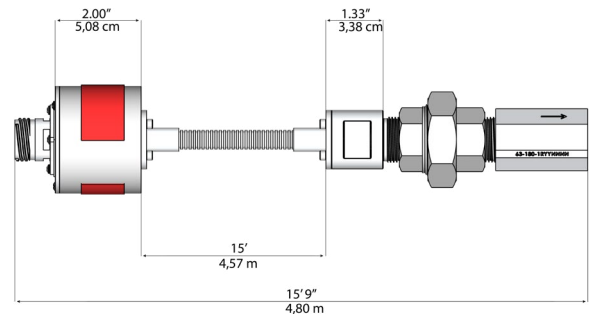
- Solid state design, no tubes or shutters.
- Detects hydrogen, natural gas or fuel oil turbine
- Silicon carbide UV spectrum sensor, fast response time
- Installs with 3/4 inch NPT standard gas turbine pipe
- Compact design, removable without turbine interruptions



SIL3

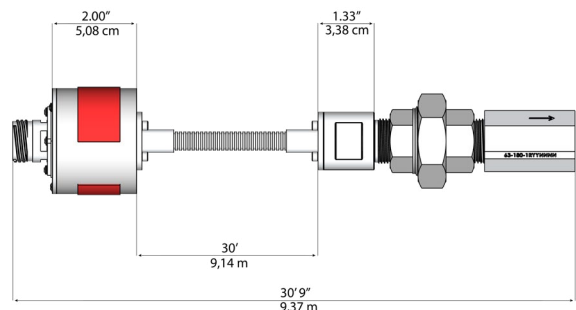
VFS-2000-K15

Kit with 15ft / 4.6m optical length



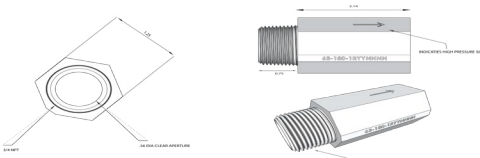
VFS-2000-K30

Kit with 30ft / 9.1m optical length



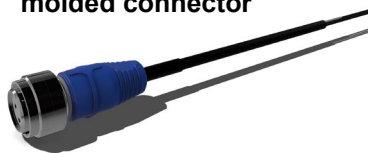
63-180

High pressure, high temperature window



59-606-x

High temperature electrical cable & molded connector



59-621-x

High temperature armoured electrical cable & molded connector



VFS-2000Kxx kits complete with:

- Turbine flame sensor head & amp - electronics assembly
- High pressure, high temperature window (Ref. 63-180)
- Stainless steel high temperature union (Ref. 35-410)
- UV Enhanced quartz fiber optic (fully sheathed) assembly, hot & cold end connections (15ft or 30ft)

Turbine Combustion Flame Sensor

Specifications

DESCRIPTION	VFS-2000
Hazardous Area Classification	Class I, Div 2 - (North America) Groups A,B,C & D, II 3 G Ex ec IIC T3C (CE)
Housing Material	Stainless Steel 18-8 (304)
Mounting Connection	3/4 male NPT
Min. Operating Temperature	32°F/0°C
Max. Operating Temperature Hot End	618°F/325°C
Max. Operating Temperature Cool End	284°F/140°C
Humidity	100%
Vibration	Per IEC 60069-2-64, Spectrum A.2. Category 3 FCC Part 15, Subpart B, Class A (30MHZ to 1GHz)
Detection Principle	Ultra-Violet SOLID STATE SENSOR
Sensor	Silicon Carbide Diode
Sensitivity	>4mA@1nW/cm ² @310nm
Spectral Range	200nm-400nm
Output	4-20mA DC, current loop
Flame Present Detection Time	175mS (typical < 75mS)
Flame Failure Detection Time	175mS (typical < 75mS)
Power Supply	18-30Vdc
Reverse Polarity Protected	YES
Electrical Connection	5-pin male MIL-DTL-38999 shell, size 15 series III hermetic, scoop proof
SIL Rating	SIL 3
SIL Certificate	EN61508
UL Certificate	UL 353, 5th Ed., Issue Date: 1994-09-23, Revision Date: 2011-11-08
CSA Certificate	C22.2 NO. 24-15, 9th Ed. Issue Date: 2015-01-01
CE Certificate	EUROPEAN COMMUNITY COUNCIL DIRECTIVE 2014/30/EU

High pressure, high temperature window

DESCRIPTION	63-180
Material	Stainless Steel 316
Window Material	Sapphire Glass
Mounting Connection	3/4 female NPT
High Pressure Window, differential Pressure	27ATM / 400PSI / 27.5 bar
High Pressure Window, differential Temperature	849°F/454°C

Stainless steel high temperature union

DESCRIPTION	35-140
Material	Stainless Steel 316
Mounting Connection	3/4 female NPT both sides

High temperature electrical cable c/w molded connector & high temperature armoured electrical cable c/w moulded connector

DESCRIPTION	59-606-40	59-606-60	59-606-80	59-606-100	59-621-40	59-621-60	59-621-80	59-621-100
Shield	Yes				Armored (ATEX / IECeX)			
Voltage	18-30Vdc							
Temp. Range	-40°F/-40°C - 284°F/140°C							
Cable Length	40ft / 12.1m	60ft / 18.1m	80ft / 24.3m	100ft / 30.4m	40ft / 12.1m	60ft / 18.1m	80ft / 24.3m	100ft / 30.4m

For more information, please [contact](#) your local Fireye Distributor.

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