

# Flame Tracker

## Aeroderivative Approved

*Designed to meet the requirements of the aeroderivative OEM for use on gas turbines;  
Built under the AS9100 aviation quality system.*

### Designed for peak performance and reliability

The Silicon Carbide (SiC) Flame Tracker dramatically improves gas turbine performance while significantly reducing maintenance requirements. Available for a variety of gas turbines, the Flame Tracker flame sensor's optical photodiode is designed for use with multiple fuels and combustion systems.

### Advantages

#### High sensitivity, fast response

Flame Tracker, with its SiC photodiode, has high sensitivity to the longer UV wavelengths that easily penetrate the fog of fuel and steam. In addition, the SiC sensor has an analog output with a very wide dynamic range and rapid response time. These features offer the ability to quickly—in less than 0.025 seconds—report flame status. This means fast response times and safer operation.

#### Reduced maintenance

The Flame Tracker flame sensor is equipped with quick disconnect connectors, allowing sensor replacement time to be reduced from hours to minutes. Its improved sensor-cooling feature lowers the impact of surrounding heat and extends the life of electronics.

#### Sensor Cooling Options

Reuter-Stokes offers both an air cooling can for compressed air and a water cooling coil.



#### Multiple applications

Designed to replace outdated technology, the Flame Tracker is applicable to a variety of land-based and marine-based gas turbines, regardless of size. In addition, it is ETL, ATEX, IECEx, and SIL certified.

#### Reliable, low voltage operation

Providing a 4–20 mA industry-standard output signal, the Flame Tracker operates reliably with any fuel—with or without—steam injection. Unlike older flame sensors that require high voltage for operation, the Flame Tracker requires low voltage, which eliminates special wiring and explosion-proof conduit requirements.

#### Performance benefits

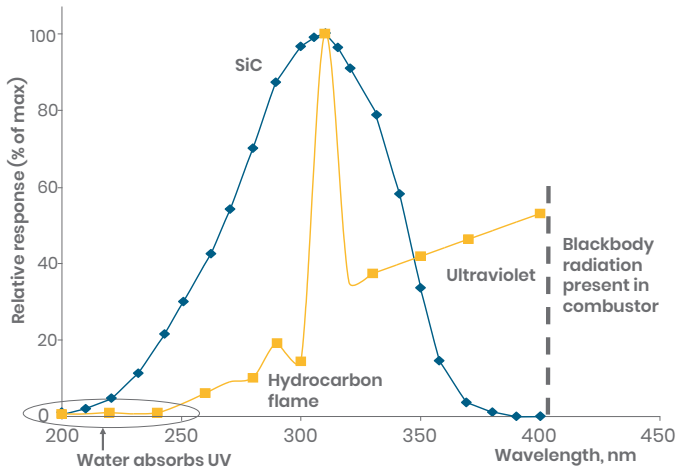
- Provides reliable operation when using any fuel
- Allows full operation during the water wash cycle
- Reduces maintenance time
- Operates on low voltage
- Provides rapid response to flameout
- Produces a wide dynamic range
- Customized conversion kits
- Meets all NFPA guidelines for flame detection on gas turbines



## Specifications

Sensor responsivity and hydrocarbon flame emission spectrum

### Spectral response



#### — Flame emission

#### SiC

Peak sensitivity closely matches the key flame peak at 310 nm.

## Operating

|                    |  |
|--------------------|--|
| Power requirements | 24 VDC nominal, 12-30 VDC @ 100 mA   |
| Output             | 4-20 mA (a module to convert output to other controller inputs is available)         |
| Response time      | < 0.025 seconds  |
| Temperature range  | -20°F to +300°F (-30°C to +150°C), 455°F (235°C) with specified water or air cooling |
| Process pressure   | To 400 psig (2.8 MPa)  |
| Sensitivity        | 5 mA @ $1 \times 10^{10}$ photons/in <sup>2</sup> /sec. @ 310 nm                     |

## Material

|                      |  |
|----------------------|--|
| Body mount           | AISI 316 stainless steel                           |
| Housing              | AISI 304 stainless steel (sealed and Argon filled) |
| Mechanical interface | 3/4" NPT female                                    |
| Electrical connector | MIL-C-38999 series III size 15 (5pin)              |
| Sensor               | Silicon Carbide (SiC) photodiode                   |

## Reuter-Stokes Flame Sensors and Accessories for Aeroderivative Applications

| Description                                  | Reuter-Stokes Part Number |
|--|---------------------------|
| Flame Tracker, Aeroderivative - GE Aerospace | RS-FS-9006                |
| Flame Tracker, Aeroderivative - End Users    | RS-FS-9006-MFR            |
| Air Cooling Can - GE Aerospace               | RS-E2-0259                |
| Air Cooling Can - End Users                  | RS-E2-0259-MFR            |
| Interconnect Cables                          | RS-E2-0285PXXX            |

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