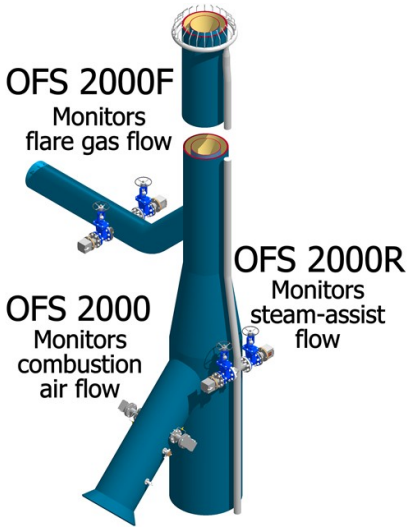
Optical Flow & EPA MACT RSR 40 CFR 63.670

In December of 2015, EPA finalized the Petroleum Refinery Sector Risk and new source performance standards. EPA MACT RSR 40 CFR 63.670.

OSI's OFS-2000 series optical flow sensors have long been recognized as a superior method for monitoring air/gas flow. The OFS-2000 sensors are not limited to combustion processes; they are also capable of monitoring:

- Flare Gas Flow Lines
- Air Assist Lines
- Steam Assist Lines

OFS 2000 flow sensors enable an operator to continuously monitor and record flow rates in flare headers as well as supplemental lines. OFS-2000F and OFS-2000, when used in combination, give the operator a much improved capability to see that combustion is as complete and efficient as possible.

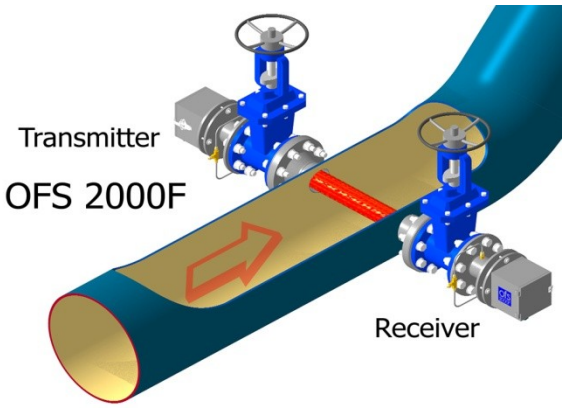


All OFS-2000 flow sensors are immune to the effects of temperature, pressure, humidity, density, path length, turbulent flow, or gas composition. OFS-2000F - series sensors are able to report velocities from 0.03 m/sec to 150 m/sec with +/- 2% accuracy. Response time of 0.3 seconds with 3 second updating, combined with full-path averaging make OFS 2000F the ideal sensor for flare line monitoring.

In addition, the OFS 2000 scintillation measurement process is essentially drift-free. Calibration is not required. Continuous internal self-diagnostics assure the operator of accurate reporting day in, day out, 24/7/365.

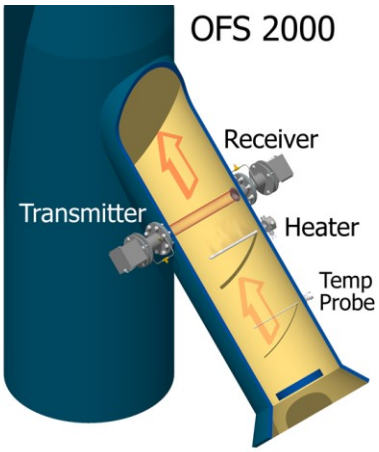
OFS-2000F Monitors Flare Gas Flow

RSR 63.670 requires 96.5% combustion efficiency or 98% destruction efficiency on all flares. It mandates that, if steam or air assist are used, the operator must account for the flows of these gases to measure and report the dilution in the combustion zone.



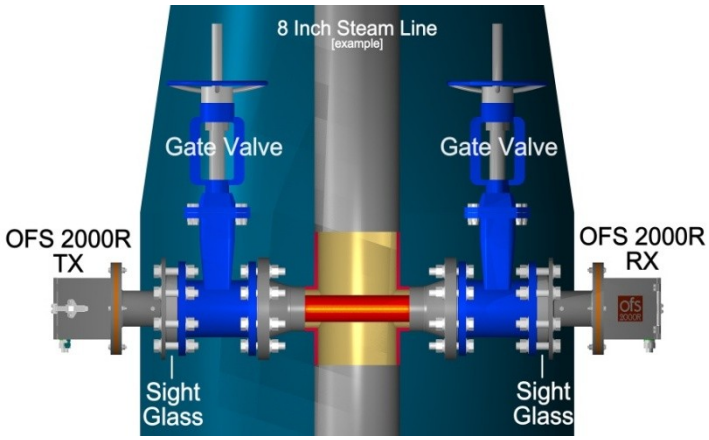
OFS 2000 sensors offer a pro-active, real-time-data approach to monitoring/controlling air and steam assisted flare lines to avoid over-steaming, excess aeration, and flame lift off - all of which cause compliance to go up in smoke.

OFS-2000 Monitors Combustion Air Flow



The OFS-2000 (with added temperature and pressure inputs) enable the operator to measure intake flow. Besides reporting velocity, it is capable of delivering moment-by-moment mass flow data, taking any guesswork out of tailoring fuel/air mix for optimum combustion. The advantage of OFS 2000 application in air–assisted flares is clear.

OFS-2000R Monitors Steam Assist Flow



Precisely measuring the proper amount of steam to achieve maximum efficiency has proven to be a difficult task. The OFS-2000R can "see" through steam in the vapor phase, delivering accurate, quick-responding control signals which enable the operator to match the steam flow exactly to the flare output. OFS 2000R has a 5000/1 turndown ratio. It will not create a pressure drop, and is easily mounted on a steam line.

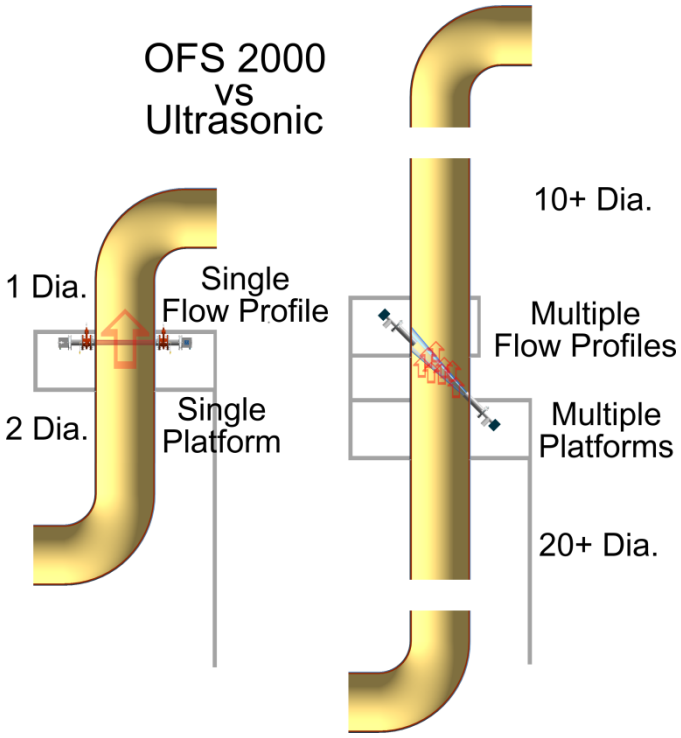
In combination, OFS 2000 flow sensors offer the operator unparalleled capability in metering and controlling the flare process. With all three inputs: flare, air, and steam closely monitored, burning efficiency can be increased significantly, with greater accuracy in reporting, and enhanced confidence in regulatory compliance.

Along with all this OFS 2000 offers:

- Non-interfering measurement
- Isolation from flow media
- Wide acceptance range with quick response
- 4/20mA and digital data output
- No calibration required
- Continuous Self-Test & Diagnostics
- Rugged packaging for harsh environments
- No re-piping required
- Ultra-Low maintenance design

OFS 2000 Placement Advantages

Installation requirements of the OFS-2000 sensors are much simpler and flexible than traditional ultrasonic sensors. OFS is more accurate than angled path measurements and can handle complex flow patterns. OFS technology does not need two platforms and can be placed close to bends or elbows if required.



Here at OSI we have made it our business to support our customers in the continual quest to achieve maximum operating efficiency with minimum emissions. Our unique technology has been employed in science and industry world-wide for over 20 years. Do you have a potential application for optical flow? We look forward to helping you achieve your goals.

OFS 2000 technology is NIST tested and approved.
OFS 2000 flow sensors meet or exceed:
EPA method 14
EPA MACT RSR 40 CFR 63.670
EPA 40 CFR part 60 & 75
EPA 40 CFR part 60 sub part J & Ja (flow)
SCAQMD rule 1118.

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For the most rugged, responsive, accurate flow meter in the world contact OSI today