



Process &

Environmental
Analysis Solutions

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Process Sense™ TFS™ Sensor

HIGHLY REPEATABLE ENDPOINT SENSOR FOR CHAMBER CLEAN PROCESSES

The Process Sense™ TFS™ Sensor is an improvement in the traditional endpoint technique of non-dispersive infrared (NDIR). Tunable Filter Spectroscopy (TFS) is a spectroscopic technique capable of generating a “mini-scan,” producing a slice of spectra in the infrared band. The scan provides absorption peaks used to select compounds and provide concentration values.

What differentiates the Process Sense TFS Sensor from NDIR-based sensors is its ability to subtract out interferent gases absorbing in the same regions of the infrared; making the Process Sense TFS Sensor more accurate when focusing on a target gas. This subtraction capability supports the simultaneous reporting of multi-components. For example, the presence of SiF₄ and/or CO₂ can be reported within a single scan.

The Process Sense TFS Sensor is a versatile analyzer platform that can be factory configured to detect other gases that are IR active by simply changing or adding filters.

Benefits

- Reduce chamber clean times and cost
- Minimize particle events
- Reduce NF₃ usage
- Reduce power consumption
- Increase wafer throughput of CVD tool
- Accurate determination of chamber clean endpoint

Applications

- Chamber clean endpoint for SiF₄
 - Sensitivity to SiF₄ down to 2 ppm
- Analysis of gases such as NF₃ and CO₂



Specifications

Measurement Ranges

SiF ₄	1 – 200 ppm (at 760 Torr)
Detection Limit	2 ppm SiF ₄
Response Time	1 second report rate
Calibration Accuracy	±10%
Repeatability	<1% Full Scale, consecutive measurements

Electrical

Connector	DB15
Input Power	120 VAC, 230 VAC, or 24 VDC (2 amp)

Size

Sensor Dimensions	17.2 x 5.9 x 5.5 in (437 x 150 x 140 mm)
Control Box Dimensions	12.6 x 10.0 x 3.1 in (320 x 254 x 78 mm)
Weight	3.2 kg (7 lbs)

Main Interface

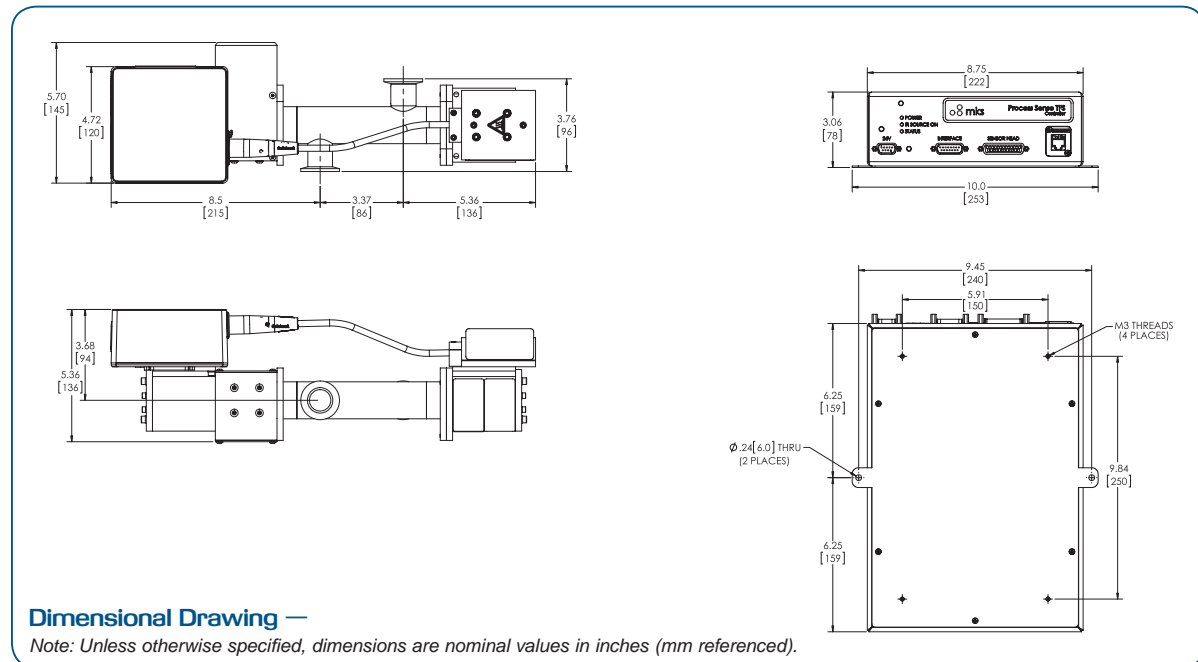
Analog 1 (AO1)	0 – 10 V (user configurable)
Analog 2 (AO2)	0 – 10 V (user configurable)
Digital 1	Fault status signal
Digital Service Port	Diagnostic codes

Sample Conditions

Pressure	0.5 – 760 Torr
Temperature	20 – 60°C
Sample Fittings	NW25 (other sizes available upon request)

Compliance

CE



Please contact your local MKS office for price and availability information.



MKS Instruments, Inc. Global Headquarters

2 Tech Drive, Suite 201
 Andover, MA 01810
 Tel: 978.645.5500
 Tel: 800.227.8766 (in USA)
 Web: www.mksinst.com

MKS Instruments, Inc. Process & Environmental Analysis Solutions

651 Lowell Street
 Methuen, MA 01844
 Tel: 978.645.5500