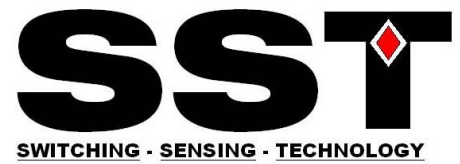


# Biomass Oxygen Sensors Screw Fit Probe



## FEATURES

- Oxygen range 0.1 - 25% O<sub>2</sub>
- Zirconium dioxide (ZrO<sub>2</sub>) sensing elements
- Long Life non-consuming technology
- Integral heating element
- No reference gas required
- High accuracy
- Linear output signal
- Operates with external interface boards
- M18x1.5 screw mount



## SPECIFICATIONS

Heater Voltage*	
Operating	4.45V <sub>DC</sub> ± 0.1V <sub>DC</sub> (1.9A)
Stand by	2V <sub>DC</sub> (0.9A)
Heater Power (max).	
Operating	8.4W
Stand by	1.9W
Pump resistance @ 700°C**	< 6kΩ
Permissible gas temperature	-100 to 250°C
<b>Short term maximum temperature (5 minutes during Boiler start-up)</b>	<b>300°C</b>
Gas flow rate (with baffle ***)	0 to 10 m/s
Repetitive permissible acceleration	5 g
Incidental permissible acceleration	30 g

\* It is important to measure the heater voltage as close to the sensor as possible due to voltage drops in the supply cable.

\*\* The constant current source used in the pump circuit should be designed to drive a load of up to 6kΩ.

\*\*\* A baffle to shield the sensor from direct cooling and pollution by the flue gas (see diagram on page 2).

## ELECTRICAL CONNECTION

### Wiring Details

1. Heater (Grey)
2. Heater (Yellow/Green)
3. Pump (Brown)
4. Common (Black)
5. Sense (Blue)

In order to get the best performance from these sensors, they must be installed and operated in accordance with this datasheet and that for any electronic interface controller.

The sensor should not be allowed to cool when there is moisture in the flue gas. It should remain switched on after combustion has stopped for at least 10 minutes. Thereafter, it is advisable to keep the sensor in standby mode (reduced power mode) until the boiler has cooled completely.

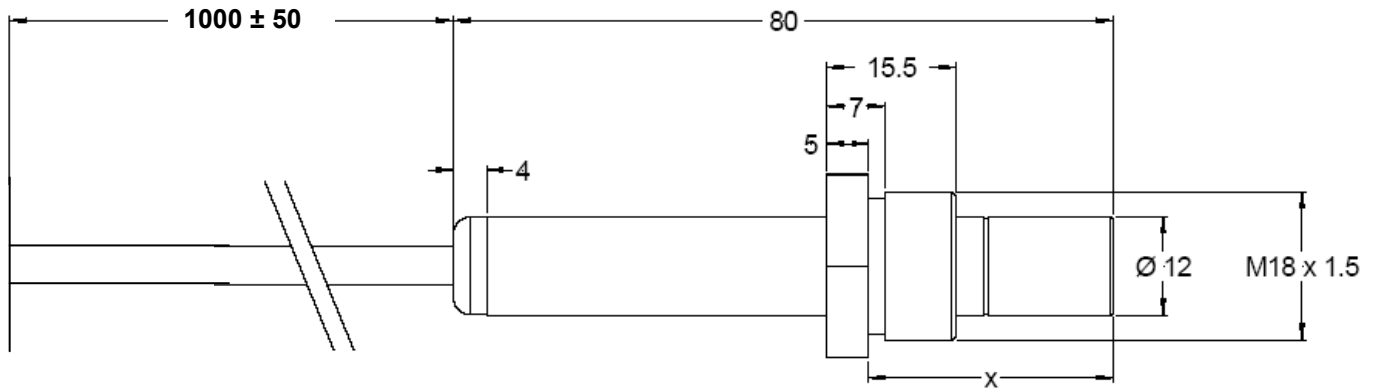
The sensor should be protected from water/condensation droplets.

Silicone compounds used to seal parts of the boiler are likely to cause poisoning of the sensor and must be avoided.

Biomass materials which produce high amounts of smoke/ carbon will shorten sensor life due to clogging of the filter pores.

For detailed information on the sensor operation and, in particular, any chemicals which are likely to damage the sensor, please refer to the following application note: [AN0043 Operation Principle and Construction of Zirconium Dioxide Oxygen Sensor.](#)

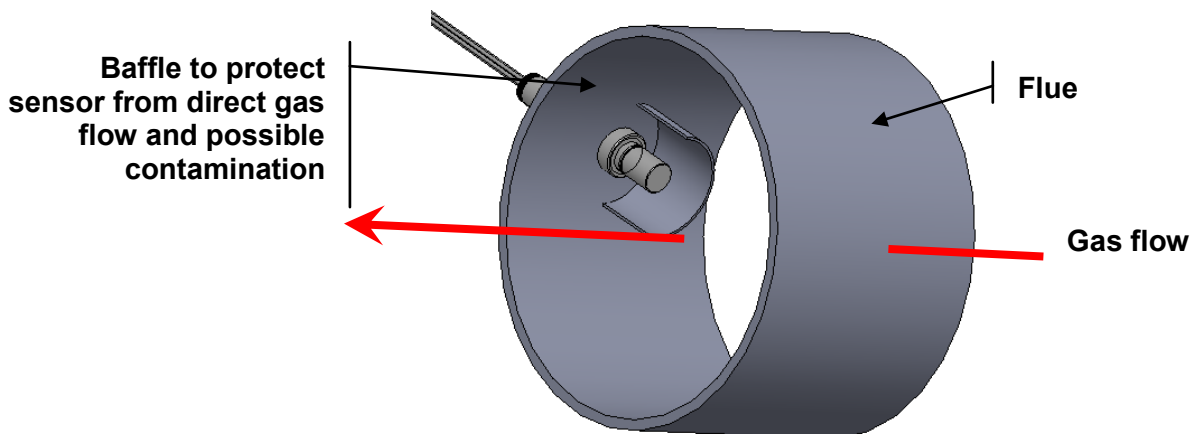
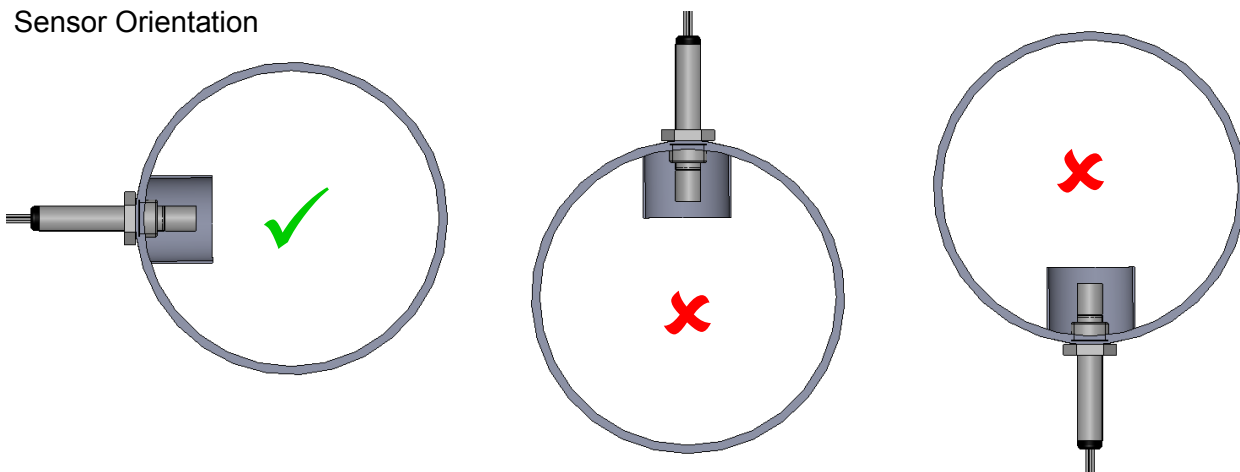
## OUTLINE DRAWING



All dimensions in mm.  
Sensor lengths are approximate.

## Mounting Details

### Sensor Orientation



## PERFORMANCE CHARACTERISTIC

Characteristics	Min.	Typ.	Max.	Unit
Oxygen pressure range	2		3000	Mbar
Accuracy (mbar)		5		
Internal operational temperature		700 (4.45V <sub>DC</sub> )		°C
Response time (10-90% step)			4	s
Warm up time (prior to sensor operation)			100	
Warm up time (from stand by)			20	
Output stabilisation time		~180		

## ORDERING INFORMATION

Part Number		
	O2S-FR-T2-18BM-A	X = 55mm
	O2S-FR-T2-18BM-B	X = 45mm
	O2S-FR-T2-18BM-C	X = 28mm

**General Note:** SST Sensing Ltd reserves the right to make changes in product specifications without notice or liability. All information is subject to SST's own data and considered accurate at time of going to print.

### WARNING

#### Personal Injury

DO NOT USE these products as safety or Emergency Stop devices or in any other application Where failure of the product could result in Personal injury.

**Failure to comply with these instructions could Result in death or serious injury.**

### CAUTION

Do not exceed maximum ratings and ensure sensor is operated in accordance with all requirements of AN0043 **Failure to comply with these instructions may result in product damage.**

**It is the customer's responsibility to ensure that this product is suitable for use in their application. For technical assistance or advice, please email us: [info@sstsensing.com](mailto:info@sstsensing.com)**