

DATA SHEET

Zirconia O₂ Sensors

Probe Series—OEM Screw Fit Housing



FEATURES

- Zirconium dioxide (ZrO₂) sensing elements
- Long life, non-depleting technology
- Integral heating element
- High accuracy
- Linear output
- Requires an external interface boards to operate¹



Response Time



Heater Voltage



Gas Temp



Termination



BENEFITS

- No reference gas required
- No need for temperature stabilisation
- Variety of probe mounting positions available; 28mm, 45mm & 55mm
- M18x1.5 screw mounting

OUTPUT VALUES

Oxygen range	0.1—25% O ₂
Oxygen pressure range	2mbar—3bar max
Accuracy	5mbar max
Internal operational temperature	700°C
Short term maximum temperature (5mins during boiler start up)	300°C
Response time (10—90% step)	< 4s
Warm up time (prior to sensor operation)	60s
Warm up time (from standby)	20s
Output stabilisation time	~ 180s

TECHNICAL SPECIFICATIONS

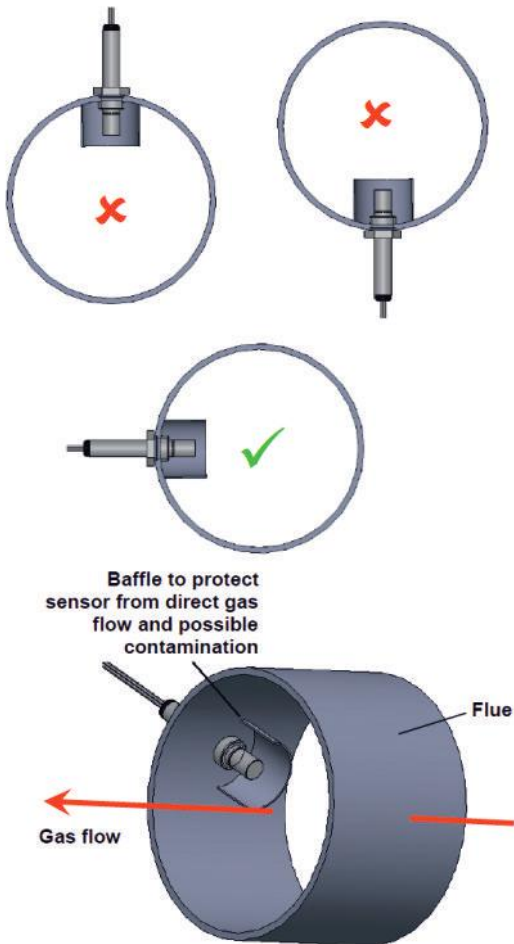
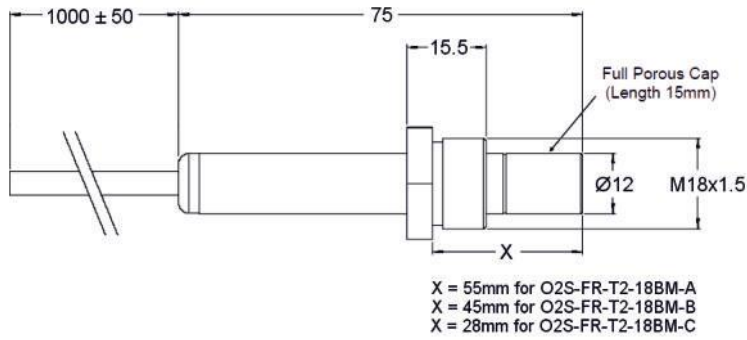
Heater voltage ²	
Operating	4.45V _{DC} ± 0.1V _{DC} (1.9A)
Standby	2V _{DC} (0.9A)
Heater power	
Operating	8.4W
Standby	1.9W
Pump impedance at 700°C ³	< 6kΩ
Permissible gas temperature	-100°C to +250°C
Gas flow rate ⁴	0—10 m/s
Repetitive permissible acceleration	5g
Incidental permissible acceleration	30g
Mounting thread	M18 x 1.5



- 1) Interface board sold separately
- 2) It is important to measure the heater voltage as close to the sensor as possible due to voltage drops in the supply cable.
- 3) The constant current source used in the pump circuit should be designed to drive a load of up to 6kΩ.
- 4) With baffle fitted to shield the sensor from direct cooling and pollution by the flue gas; see [Outline Drawing & Mounting Information](#) on page 2.

OUTLINE DRAWING AND MOUNTING INFORMATION

All dimensions shown in mm.



ELECTRICAL INTERFACE

Lead Wires

Wire	Designation
Grey	Heater (1)
Yellow/Green	Heater (2)
Brown	Pump
Black	Common
Blue	Sense

ORDER INFORMATION

Generate your specific part number using the convention shown below. Use only those letters that corresponds to the sensor option you require — omit those you do not.

O 2 S - F R - T 2 - 1 8 B M - X

Probe Length
A 55mm
B 45mm
C 28mm

CAUTION

Do not exceed maximum ratings and ensure sensor(s) are operated in accordance with their requirements. Carefully follow all wiring instructions. Incorrect wiring can cause permanent damage to the device. Zirconium dioxide sensors are damaged by the presence of silicone. Vapours (organic silicon compounds) from RTV rubbers and sealants are known to poison oxygen sensors and MUST be avoided. Do NOT use chemical cleaning agents.

Failure to comply with these instructions may result in product damage.

INFORMATION

As customer applications are outside of SST Sensing Ltd.'s control, the information provided is given without legal responsibility. Customers should test under their own conditions to ensure that the equipment is suitable for their intended application. For detailed information on the sensor operation refer to application note AN0043 Operating Principle and Construction of Zirconium Dioxide Oxygen Sensors.

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