

DATA SHEET

Zirconia O₂ Sensors

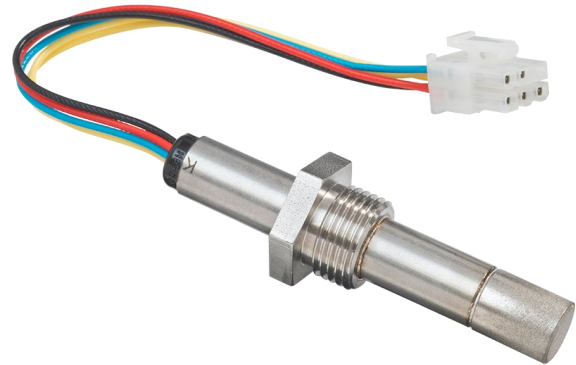
Probe Series—Screw Fit Housing



DESIGN • MANUFACTURE • CUSTOMISE • CONFIGURE

FEATURES

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



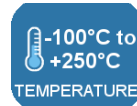
Response Time



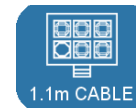
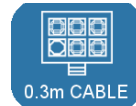
Heater Voltage



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 pressure range | 2mbar—3bar max |
| Accuracy | 5mbar max |
| Internal operational temp | 700°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 | 4.35V _{DC} ± 0.1V _{DC} (1.85A) |
| Standby | 2V _{DC} (0.85A) |
| Pump impedance at 700°C ³ | < 6kΩ |
| Permissible gas temperature | -100°C to +250°C |
| Gas flow rate | 0—10 m/s |
| Repetitive permissible acceleration | 5g |
| Incidental permissible acceleration | 30g |
| Mounting thread | M18 x 1.5 |

Other sensor options available on request, email:
technical@sstsensing.com

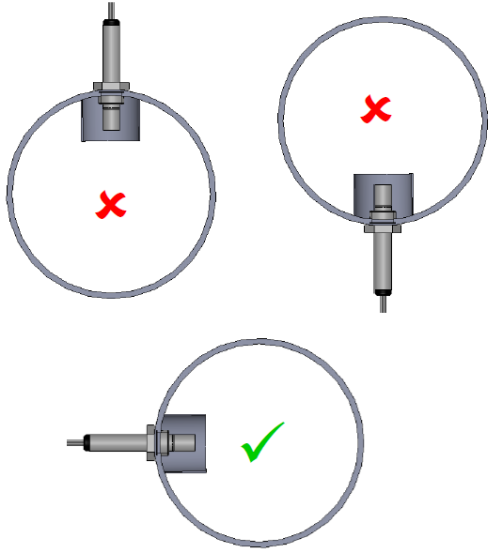
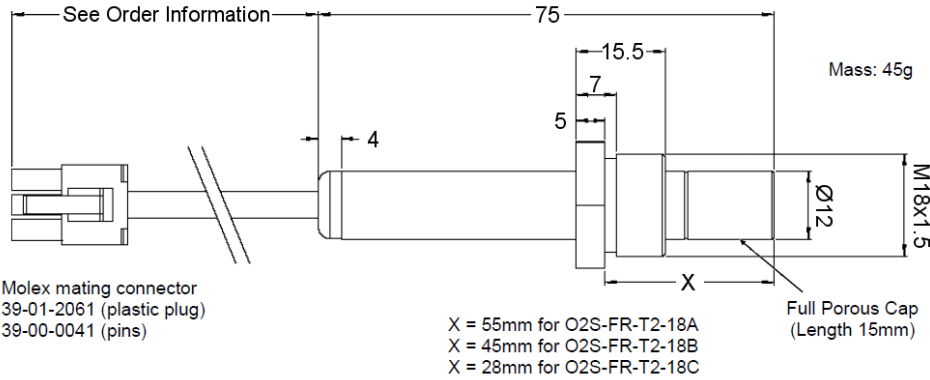
Need help? Ask the expert
Tel: + 44 (0)1236 459 020
and ask for “Technical”



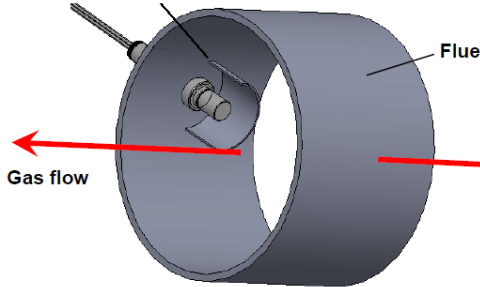
- 1) Interface board sold separately; contact technical@sstsensing.com for details.
- 2) It is important to measure the heater voltage as close to the sensor as possible due to voltage drops in the supply cable.
- 3) The constant current source used in the pump circuit should be designed to drive a load of up to 6kΩ.

OUTLINE DRAWING AND MOUNTING INFORMATION

All dimensions shown in mm.

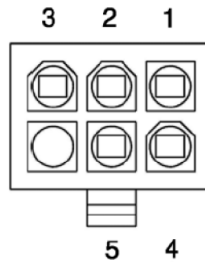


Baffle to protect sensor from direct gas flow and possible contamination



ELECTRICAL INTERFACE

Molex Connector



| Pin | Designation |
|-----|---------------------|
| 1 | Pump (Red) |
| 2 | Common (Black) |
| 3 | Heater (1) (Yellow) |
| 4 | Sense (Blue) |
| 5 | Heater (2) (Yellow) |

ORDER INFORMATION

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

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

| Probe Length |
|------------------|
| A 55mm |
| B 45mm |
| C 28mm |

| Termination |
|-----------------------------|
| Blank 0.15m cable |
| 002 0.3m cable |
| 003 1.1m cable |

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 silicone 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.

For technical assistance or advice, please email:
technical@sstsensing.com

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.