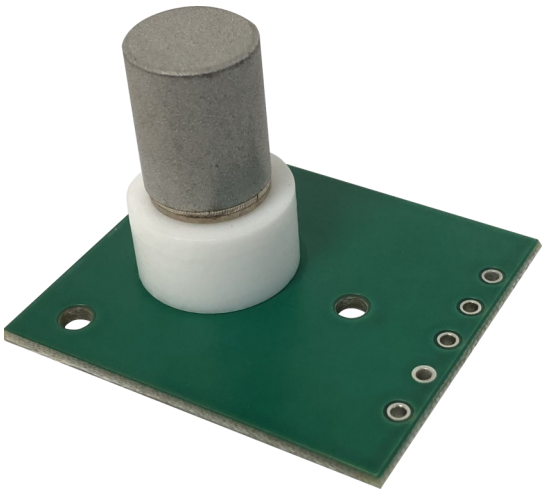
DATA SHEET

SST
DESIGN • MANUFACTURE • CUSTOMISE • CONFIGURE

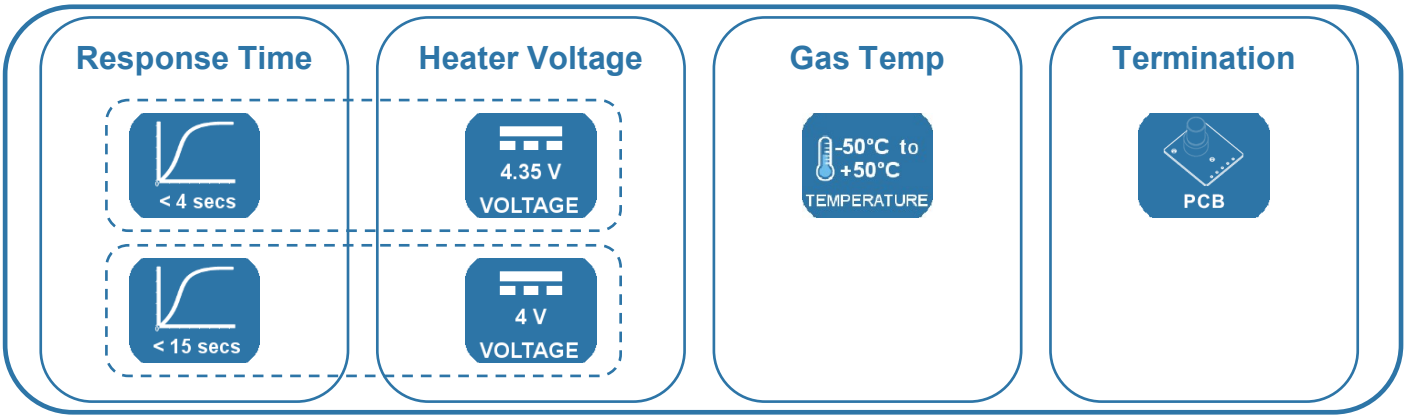
Zirconia O_2 Sensors

PCB Mounted Sensor



FEATURES

- Zirconium dioxide (ZrO_2) sensing elements
- Long life, non-depleting technology
- Integral heating element
- High accuracy
- Designed to operate with SST's OXY-LC interface board family[a]



BENEFITS

- No reference gas required
- No need for temperature compensation

OUTPUT VALUES

Oxygen pressure range	2mbar—3bar max
Accuracy[e]	5mbar max
Internal operational temperature	700°C
Response time (10—90% step)	
Standard response sensor	<15s
Fast response sensor	< 4s
Warm up time (prior to sensor operation)	60s
Warm up time (from standby)	20s
Output stabilisation time	~ 180s

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

Note: All SST ZrO_2 sensors measure ppO_2. In order to calculate vol. O_2%, the total gas pressure, Ptot, at the sensor needs to be known. $O_2\% = ppO_2/Ptot$

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

TECHNICAL SPECIFICATIONS

Heater voltage[b]	
Standard response sensor	$4V_{DC} \pm 0.1V_{DC}$ (1.7A)
Standby	$1.65V_{DC}$ (0.7A)
Fast response sensor	$4.35V_{DC} \pm 0.1V_{DC}$ (1.85A)
Standby	$2V_{DC}$ (0.85A)
Pump impedance at 700°C[c]	< 6kΩ
Permissible gas temperature	-50°C to +50°C
Gas flow rate	
In a manifold[d]	1L/min max
In an open gas flow	2m/s
Repetitive permissible acceleration	5g
Incidental permissible acceleration	30g

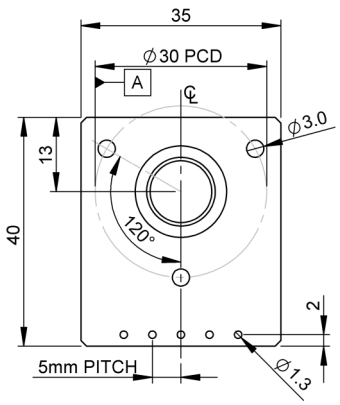
NOTES

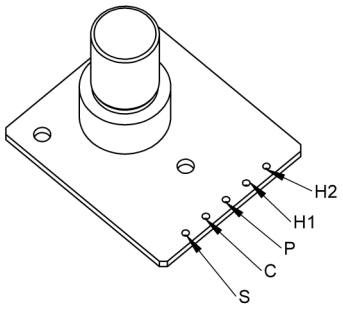
a) Interface board sold separately (see website); contact technical@sstsensing.com for details of how to design your own interface board.
b) It is important to measure the heater voltage as close to the sensor as possible due to voltage drops in the supply cable.
c) The constant current source used in the pump circuit should be designed to drive a load of up to 6kΩ.
d) see mounting recommendations.
e) Up to 1200mbar ppO_2 at Ptot < 2000mbar.

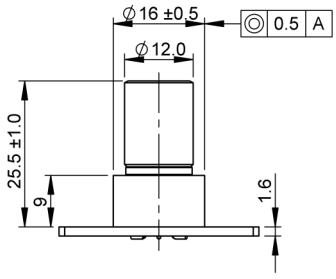
nbn Austria GmbH
Riesstraße 146, 8010 Graz
Tel. +43 316 40 28 05 | Fax +43 316 40 25 06
nbn@nbn.at | www.nbn.at

OUTLINE DRAWING

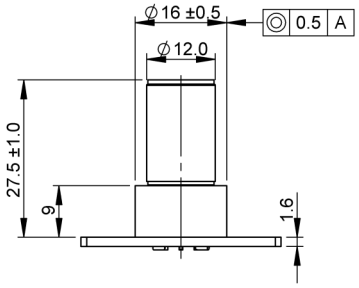
All dimensions shown in mm. Tolerances = ±1mm.







O2S-FR-T3-PCB



O2S-T3-PCB

ELECTRICAL INTERFACE

Wire	Designation
S	Sense
C	Common
P	Pump
H1	Heater (1)
H2	Heater (2)

Note: When connecting to the PCB, use 20 AWG for cable lengths < 0.2m and 16 AWG for cable lengths < 1m. For cable lengths greater than 1m, please contact technical@sstsensing.com for guidance.

ORDER INFORMATION

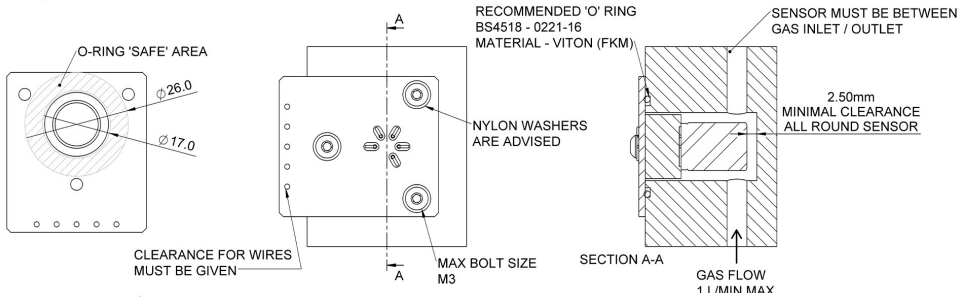
Standard Response: <15s

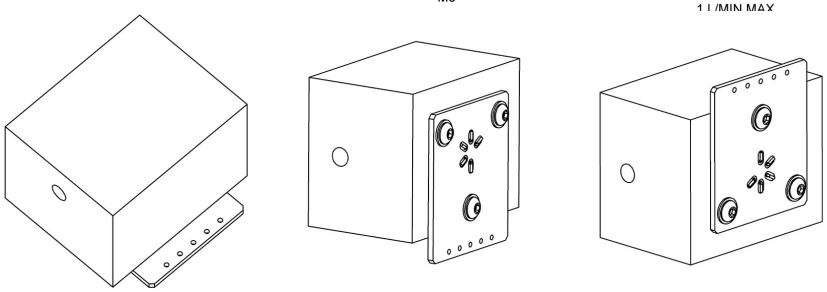
O 2 S - T 3 - P C B

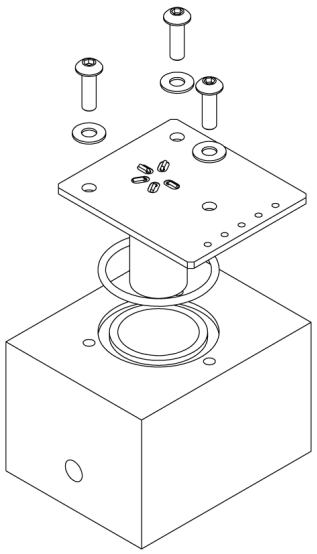
Fast Response: <4s

O 2 S - F R - T 3 - P C B

MOUNTING RECOMMENDATIONS







Note: Recommended mounting angles during operation. Sensor should not be mounted with PCB on top.

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.

5 HAGMILL CRESCENT, SHAWHEAD INDUSTRIAL ESTATE, COATBRIDGE, UK ML5 4NS
www.sstsensing.com | e: sales@sstsensing.com | t: +44 (0)1236 459020 | f: +44 (0)1236 459026

RoHS COMPLIANCE
REACH