SWITCHING - SENSING - TECHNOLOGY

Data Sheet
O2S Oxygen Sensor - Probe Style

FEATURES

- **Oxygen pressure range 2 mbar - 3bar**
- **Zirconium dioxide (ZrO_2) sensing elements**
- **Non-consumption technology**
- **Integral heating element**
- **No need for temperature stabilisation**
- **No reference gas required**
- **High accuracy**
- **Linear output signal**
- **Operates with external interface boards**
- **80mm, 220mm and 400mm probes available**

O2S-FR-T2

SPECIFICATIONS

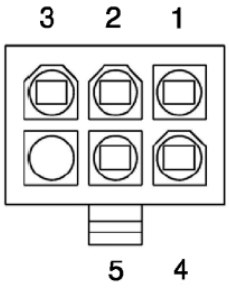
Heater Supply*	
Porous Lid Cap	$4V_{DC} \pm 0.1V_{DC}$ (1.7A)
Stand by	$1.65V_{DC}$ (0.7A)
Full Porous Cap	$4.35V_{DC} \pm 0.1V_{DC}$ (1.85A)
Stand by	$2V_{DC}$ (0.85A)
Pump resistance @ 700°C**	< 6kΩ
Permissible gas temperature	
Standard Temp.	-100 to 250°C
High Temp.	-100 to 400°C
Gas flow rate	0 to10 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. Heater can also be operated with an equivalent a.c. or PWM signals.

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

ELECTRICAL CONNECTION

Molex Connector



1: Pump (Red)
2: Common (Black)
3: Heater (Yellow)
4: Sense (Blue)
5: Heater (Yellow)

Leadwires

Pump (Red)
Common (Black)
Heater (Yellow)
Sense (Blue)
Heater (Yellow)

For detailed information on the sensor operation please refer to the following application note: AN0043 Operation Principle and Construction of Zirconium Dioxide Oxygen Sensor.

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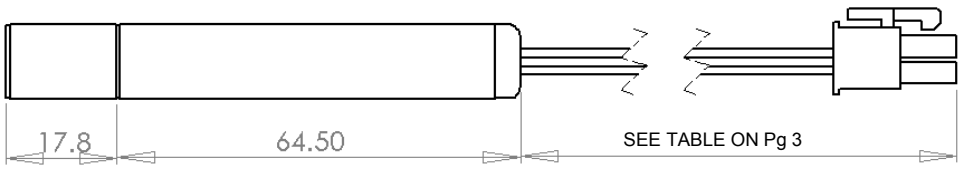
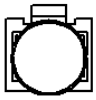
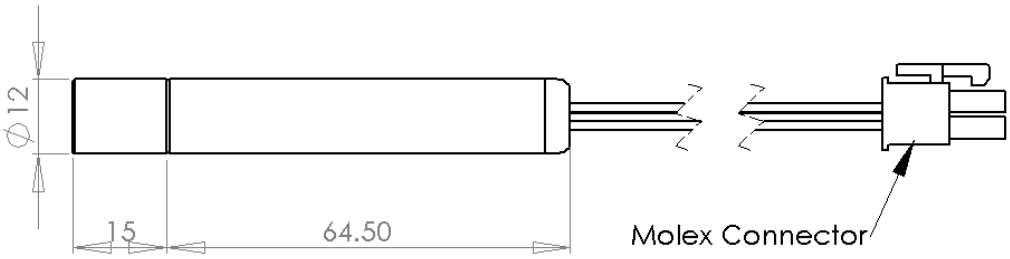
OUTLINE DRAWINGS

O2S-T2
Porous Lid Cap
Mass: 20g



O2S-FR-T2
Full Porous Cap
Mass: 24g

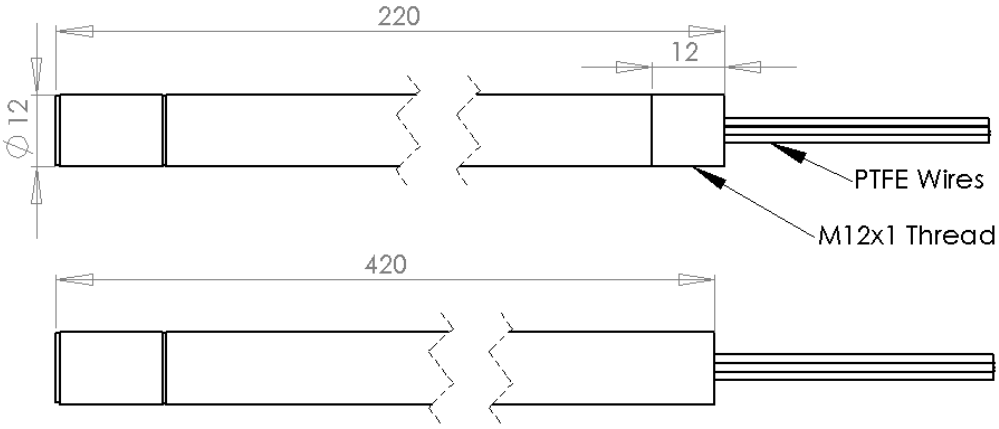




Molex mating connector
39-01-2061 (plastic plug)
39-00-0041 (pins)

O2S-T6-SH
Porous Lid Cap
Mass: 105g

O2S-T6
Porous Lid Cap
Mass: 195g



Both KGZ12Short & KGZ12
Length = 200mm min
20 AWG

All dimensions in mm.
Sensor lengths are approximate.

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PERFORMANCE CHARACTERISTIC

Characteristics	Min.	Typ.	Max.	Unit
Oxygen pressure range	2		3000	mbar
Accuracy			5	
Internal operational temperature (Porous Lid Cap)		700 (4.00V_{DC})		°C
Internal operational temperature (Full Porous Cap)		700 (4.35V_{DC})		
Response time (10-90% step, Porous Lid Cap)			15	s
Response time (10-90% step, Full Porous Cap)			4	
Warm up time (prior to sensor operation)			100	
Warm up time (from stand by)			20	
Output stabilisation time		~180		

ORDERING INFORMATION

Part number	Probe Length	Permissible Gas Temperature	Sensor Response	Termination
O2S-T2	80mm	-100 to 250°C	< 15s	0.15m Cable, Molex Connector
O2S-T2-002	80mm	-100 to 250°C	< 15s	0.3m Cable, Molex Connector
O2S-T2-003	80mm	-100 to 250°C	< 15s	1.1m Cable, Molex Connector
O2S-FR-T2	80mm	-100 to 250°C	< 4s	0.15m Cable, Molex Connector
O2S-FR-T2-002	80mm	-100 to 250°C	< 4s	0.3m Cable, Molex Connector
O2S-FR-T2-003	80mm	-100 to 250°C	< 4s	1.1m Cable, Molex Connector
O2S-T6-SH	220mm	-100 to 250°C	< 15s	Leadwires, 20 AWG, 200mm
O2S-T6-SH-H	220mm	-100 to 400°C	< 15s	Leadwires, 20 AWG, 200mm
O2S-T6	400mm	-100 to 250°C	< 15s	Leadwires, 20 AWG, 200mm
O2S-T6-H	400mm	-100 to 400°C	< 15s	Leadwires, 20 AWG, 200mm

WARNING
Personal Injury
DO NOT USE these products as safety or Emergengy 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 techincal assistance or advice, please email us: info@sstsensing.com