

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



SPECIFICATIONS

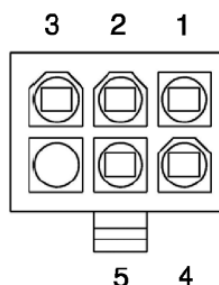
Heater Supply*	
Porous Lid Cap	$4V_{DC} \pm 0.1V_{DC}$ (1.7A)
Stand by	$1.65V_{DC}$ (0.7A)
Full Porous Cap	$4.35V_{DC} \pm 0.1V_{DC}$ (1.85A)
Stand by	$2V_{DC}$ (0.85A)
Pump resistance @ 700°C**	< 6k Ω
Permissible gas temperature	
Standard Temp.	-100 to 250°C
High Temp.	-100 to 400°C
Gas flow rate	0 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. 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 6k Ω

ELECTRICAL CONNECTION

Molex Connector



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

Leadwires

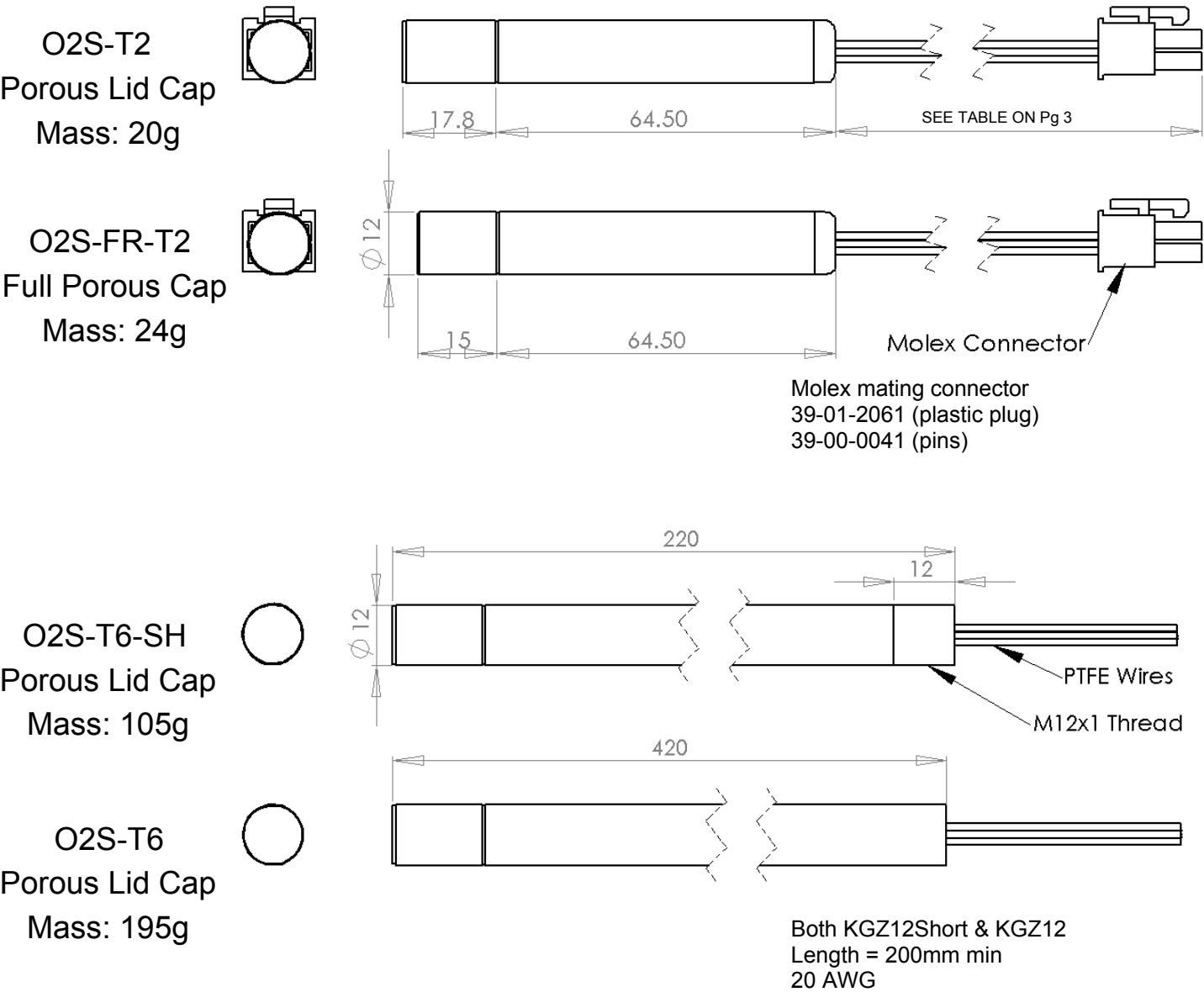
Pump (Red)
Common (Black)
Heater (Yellow)
Sense (Blue)
Heater (Yellow)

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



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 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.