

# Data Sheet

## O2S-FR-T4 Flange Mounted Oxygen Sensor Family

### FEATURES

- Oxygen pressure range 2 mbar - 3bar
- Zirconium dioxide (ZrO<sub>2</sub>) 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



### SPECIFICATIONS

Heater supply*	
Full Porous Cap	4.35V <sub>DC</sub> ± 0.1V <sub>DC</sub> (1.85A)
Stand by	2 V <sub>DC</sub> (0.85A)
Pump resistance @ 700°C**	<6kΩ
Permissible gas temperature	-100 to 400°C
Gas flow rate	0 to 10 m/s
Repetitive permissible acceleration	5 g
Incidental permissible acceleration	30 g

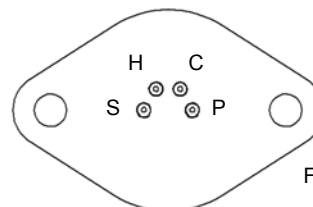
\* It is important to measure the heater voltage as close to the sensor as possible due to voltage drops in the supply cable. Heater can also be operated with an equivalent a.c. or PWM signals.

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

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

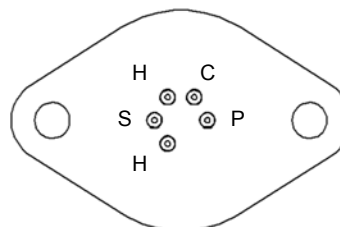
### ELECTRICAL CONNECTION

#### O2S-FR-T4-4P



P: Pump  
C: Common  
H: Heater  
S: Sense  
F: Heater Connection on Flange (Ground)

#### O2S-FR-T4-5P

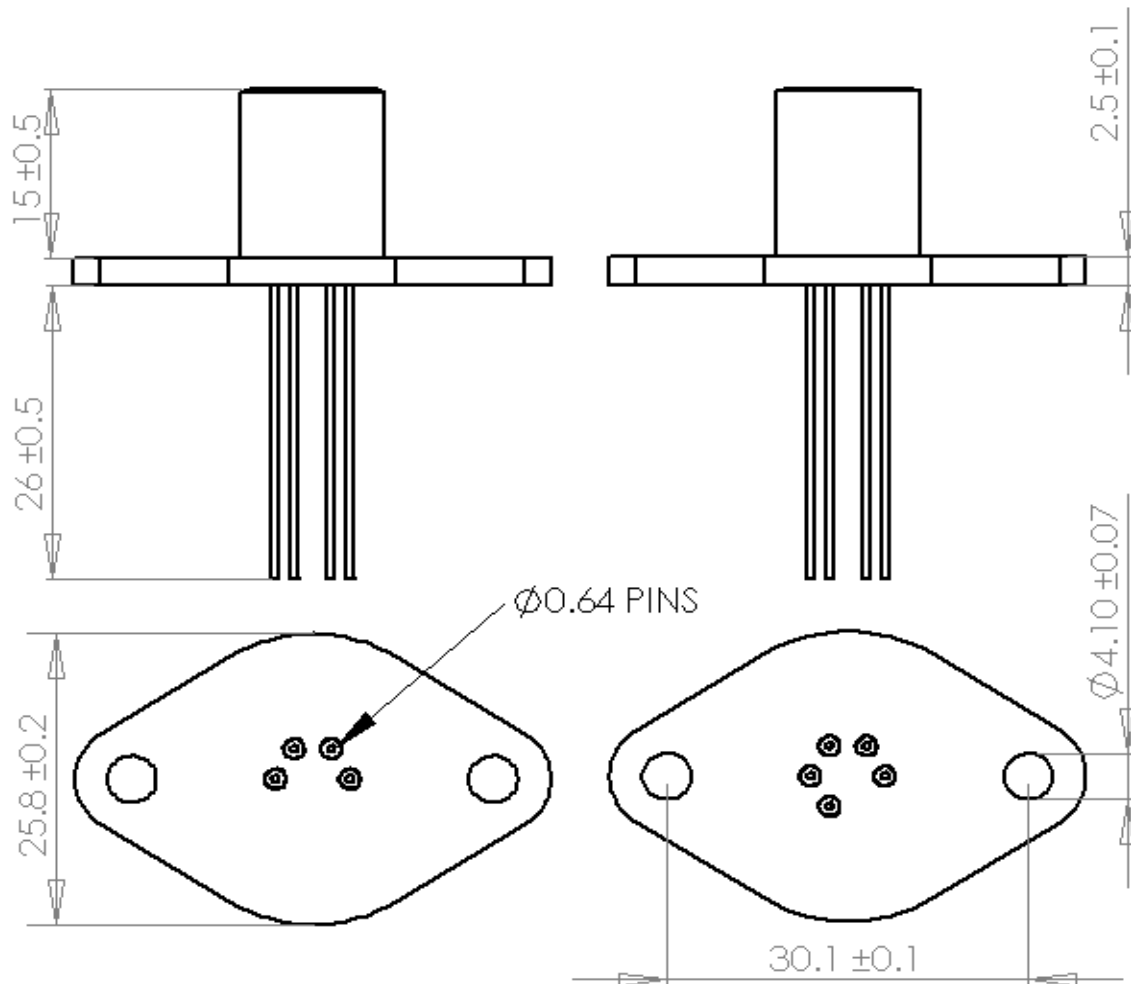


P: Pump  
C: Common  
H: Heater  
S: Sense  
H: Heater

OUTLINE DRAWING

O2S-FR-T4-4P  
Full Porous Cap  
Mass: 20g

O2S-FR-T4-5P  
Full Porous Cap  
Mass: 20g



**NOTE:** Sensor pins are NOT designed to be solder to. Preferred method of connection is to crimp onto pins.  
4mm mounting holes should be used as second heater connection (on 4-pin product only) and should be grounded.  
All dimensions in mm.

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## O2S-FR-T4 Flange Mounted Oxygen Sensor Family

### PERFORMANCE CHARACTERISTIC

Characteristics	Min.	Typ.	Max.	Unit
Oxygen pressure range	2		3000	mbar
Accuracy			5	
Internal operating temperature		700 (4.35V <sub>DC</sub> )		°C  s
Response time (10-90% step)			4	
Warm up time (prior to sensor operation)			100	
Warm up time (from stand by)			20	
Output stabilisation time		~180		

### ORDERING INFORMATION

Part number	Housing Type	Termination
O2S-FR-T4-4P	flange mounted sensor	Nickel plated stainless steel wire, 4 pin,
O2S-FR-T4-5P	flange mounted sensor	Nickel plated stainless steel wire, 5 pin

<p><b>WARNING</b>  <b>Personal Injury</b>            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.  <b>Failure to comply with these instructions could Result in death or serious injury.</b></p>	<p><b>CAUTION</b>            Do not exceed maximum ratings and ensure sensor is operated in accordance with all requirements of AN0043  <b>Failure to comply with these instructions may result in product damage.</b></p>
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