Data Sheet

O2I-Flex

SST
DESIGN • MANUFACTURE • CUSTOMISE • CONFIGURE

Oxygen Sensor Interface Board

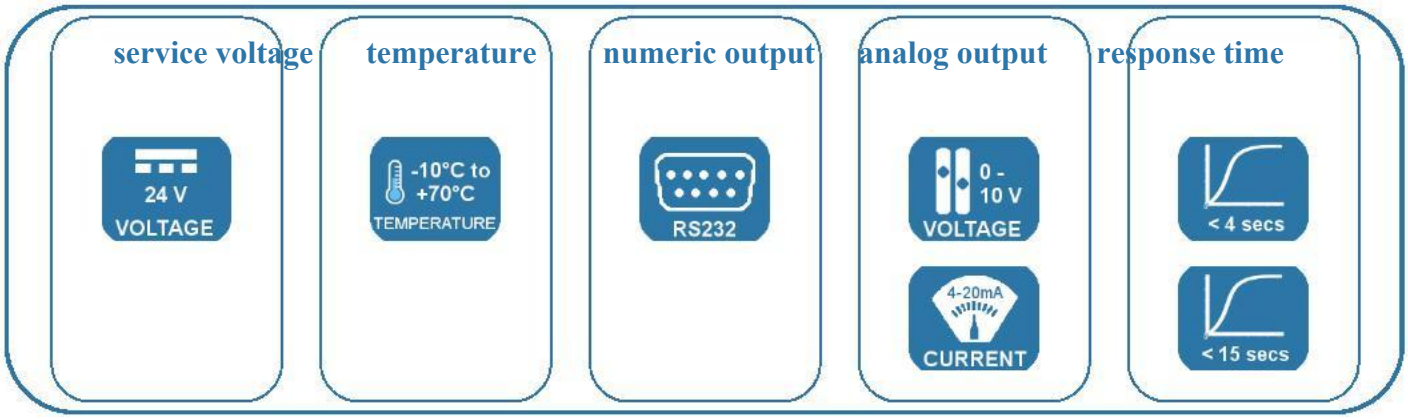
Characteristic

- Provide the electronics necessary to power and control the SST zirconia sensor series

External auto-trigger or manual calibration. Calibration can also be performed via onboard buttons.

. Power supply and working LED for sensors

. The detachable polarized screw terminal is convenient for wiring



merit

. Adaptive software filtering provides fast sensor response with stable oxygen output

. High precision linear output

. Can be calibrated in clean air(20.7%O 2) or at any other known O 2 concentration

technical specifications

Power supply voltage power supply current digital output analog output	24V DC ± 10% 24V DC down, 600mA max. RS 232 4-20mA; Load 100-600Ω 0-10V DC; Load 10kΩ min
temperature range	
lay in：	-10°C ~ +70°C
work：	-10°C ~ +70°C
working pressure range [1]	1—1000mbar

output value

Oxygen range (analog output) [3]	0.1[2]—25% O_2
perh-aps	0.1[2]—100% O_2
Oxygen range (RS232 output)	0.1 —100% O_2
Accuracy after calibration [4,5]	1% O_2
Repeatability of the calibrated [4] output resolution:	0.5% O_2
0—10VDC:	0.01V
4—20mA:	0.01mA
RS232:	0.01% O_2
Response time (step 10-90%)	
Connect rapid response sensor:	< 4s
Connecting standard response sensor: Initial warm-up time (until output stabilized)	< 15s 5—10mins
Output unactivated start delay (heater preheating)	60s

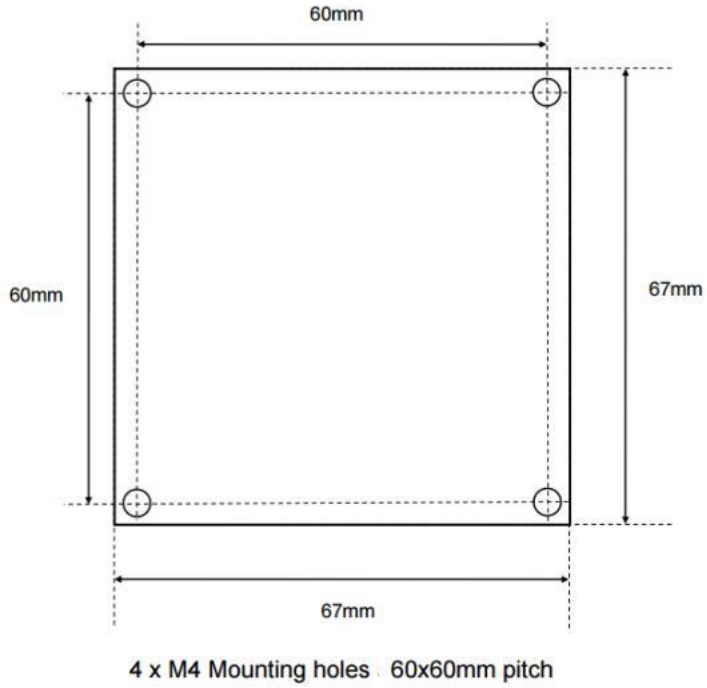
Need help? Call + for expert advice
44 (0) 1236 459 020 and Seek Technical assistance

annotate

1) Sensors and interfaces for proper atmospheric pressure compensation.
2) Running at O 2 below 0.1% will damage the sensing element.
3) The range can be selected by changing the position of the overlink on the PCB; see PCB layout on page 3.
4) Assume that the barometric pressure (BP) remains constant.
5) When the 2 sensor measures oxygen partial pressure(PPO 2) in a gas, the deviation between the oxygen partial pressure at BP and the oxygen partial pressure during calibration will cause the reading error to vary proportionally. For example, if the sensor reads 21%O at 1013.25 mbar 2, an increase of 1% in BP will result in an increase of 1% to 21.21%O 2.

Shape drawings and installation information

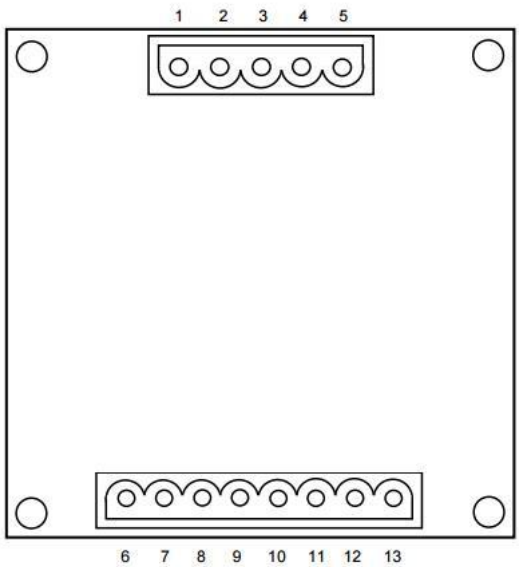
All dimensions are in mm. Tolerance = ±1mm.



Electrical interface

The electrical overview is as follows. For more details, please refer to the AN-0042 O2I-Flex Quick Start Guide.

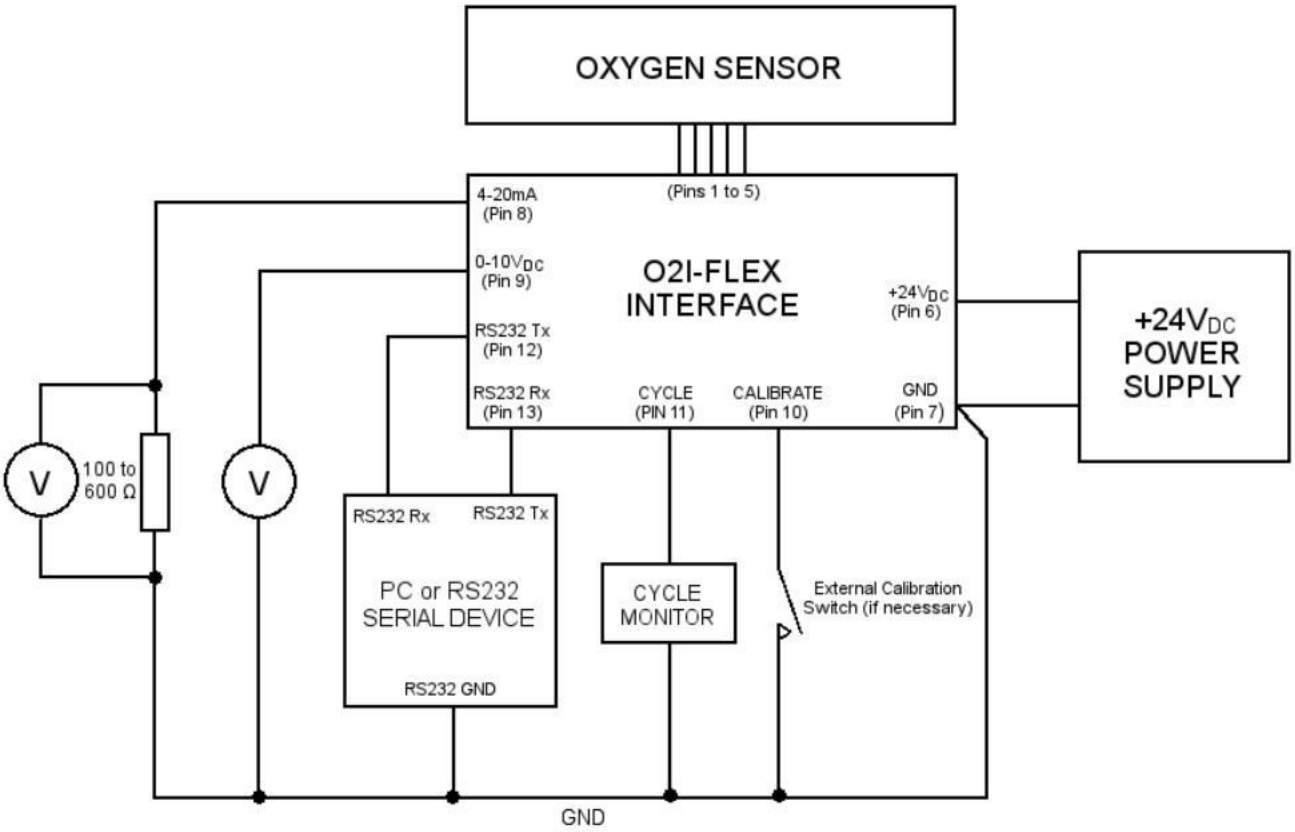
Always use the correct ESD handling precautions on the interface board.

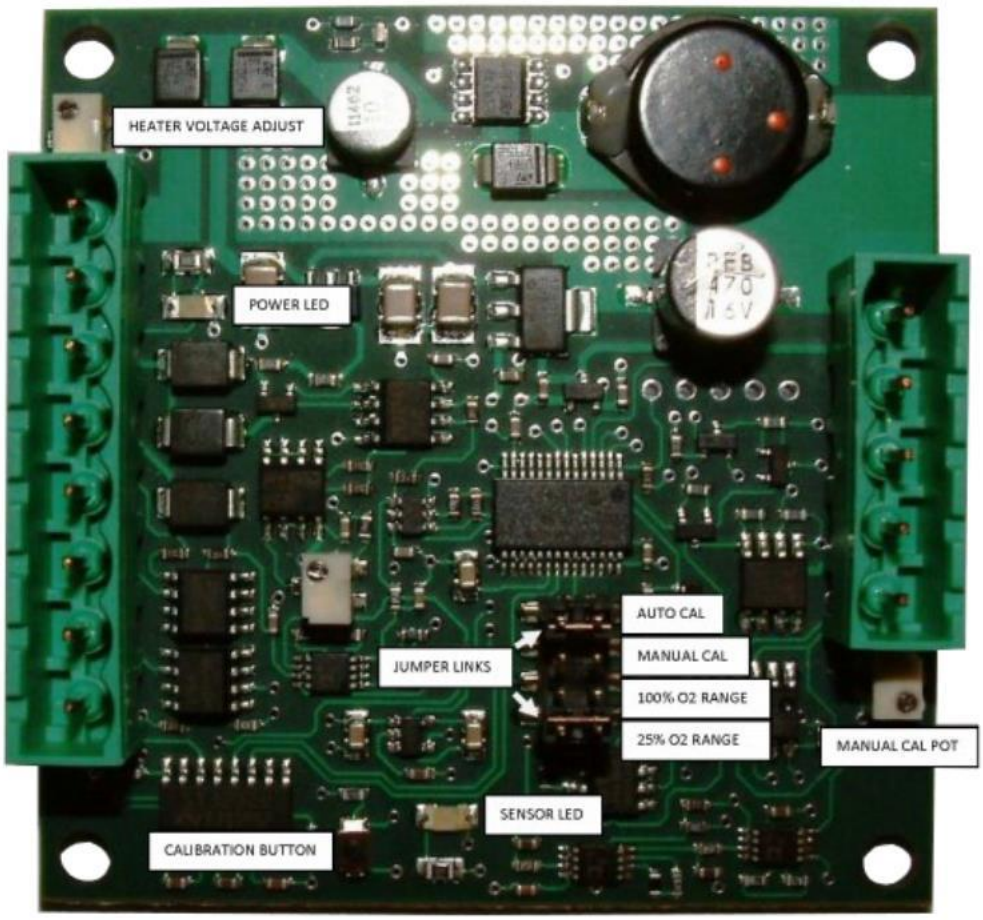


Pin	distribution
1	Sensor heater GND (1)
2	Sensor heater + (2)
3	Sensor sensing
4	Sensors public
5	Sensor pump
6	24VDC ± 10%
7	GND
8	4—20mA output
9	0-10V DC output
10	demarcate
11	recurrence
12	RS232 Tx
13	RS232 Rx

pay attention to :

1. Output pins 8, 9, 12, and 13 all reference to the power ground (pin 7). Due to the high current in the power ground, when monitoring the 0-10V DC output (pin 9), it is recommended to use a separate ground wire from pin7 for system measurement. This prevents errors caused by voltage drops in power connections.
2. Output pins 1 to 5. See the appropriate SST oxygen sensor data sheet for wiring/pin assignments.
3. Each SST oxygen sensor has two heaters connected, which should be connected to pin 1 & 2 of the O2I-Flex; the heater coils are non-polar. However, when one of the connected sensor housings is a heater connection, the O2I-Flex pin1 should be connected to the housing.


OXYGEN SENSOR
(Pins 1 to 5)
4-20mA
(Pin 8)
0-10VDC
(Pin 9)
RS232 Tx
(Pin 12)
RS232 Rx
(Pin 13)
O2I-FLEX
INTERFACE
CYCLE
(PIN 11)
CALIBRATE
(Pin 10)
+24VDC
(Pin 6)
GND
(Pin 7)
+24VDC
POWER
SUPPLY
V
100 to
600 Ω
V
RS232 Rx
RS232 Tx
PC or RS232
SERIAL DEVICE
RS232 GND
CYCLE
MONITOR
External Calibration
Switch (if necessary)
GND


HEATER VOLTAGE ADJUST
POWER LED
AUTO CAL
MANUAL CAL
JUMPER LINKS
100% O2 RANGE
25% O2 RANGE
MANUAL CAL POT
SENSOR LED
CALIBRATION BUTTON

Order information

Please specify the following model when ordering.

O 2 I - F L E X

Related Products

ZrO 2 probe sensor-short housing

ZrO 2 probe sensor-long housing

ZrO 2 threaded installation sensor

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 AN 0043 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.

RoHS

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