

# Data Sheet

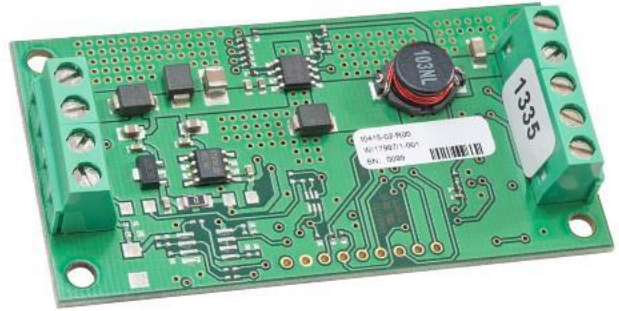
## OXY-LC

### Oxygen Sensor Interface Board

#### Characteristic

- Provide the electronics necessary to power and control the SST zirconia sensor series
- Built-in pressure sensor for atmospheric pressure compensation

The threaded terminal is installed at the interface to facilitate reverse voltage and transient overvoltage wiring.



<p><b>service voltage</b></p> <p>24 V VOLTAGE</p>	<p><b>temperature</b></p> <p>-30°C to +70°C TEMPERATURE</p>	<p><b>numeric output</b></p> <p>RS485 PWM</p>	<p><b>analog output</b></p> <p>0 - 10 V VOLTAGE 4-20mA CURRENT</p>	<p><b>response time</b></p> <p>&lt; 4 secs &lt; 15 secs</p>
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#### merit

- Adaptive software filtering provides fast sensor response with stable oxygen output
- High precision linear output

#### technical specifications

service voltage	
RS485 variables:	8—28VDC
Simulated variable: power supply current	20—28VDC 24V DC at maximum 600 mA 12V DC at maximum 1.2A
numeric output	1.2A RS485 (Modbus RTU) PWM
r simulate output	4-20mA; load 600Ω max 0-10V DC; load 10kΩ min
r temperature range	
lay in :	-40°C ~ +85°C
work :	-30°C ~ +70°C
working pressure range	260—1260mbar Absolute value

#### output value

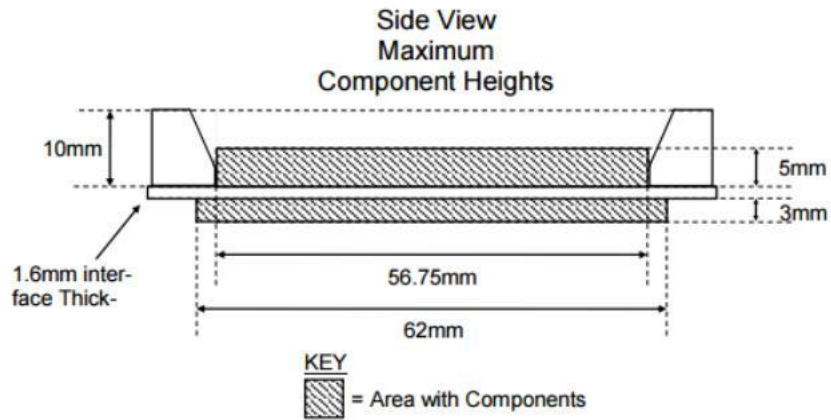
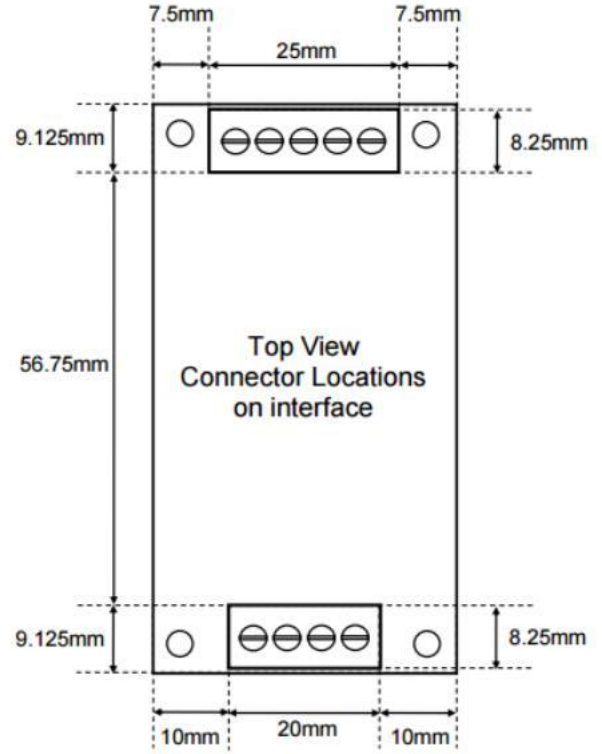
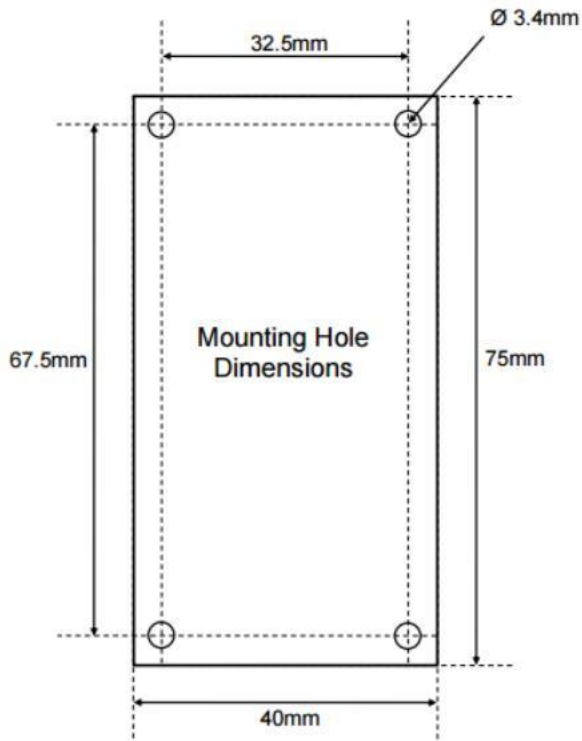
Oxygen range (analog output)	0.1 <sup>2</sup> —25% O <sub>2</sub>
	perhaps 0.1 <sup>2</sup> —100% O <sub>2</sub>
Calibrated accuracy of oxygen range (Modbus RTU) <sup>3</sup>	0.1 <sup>1</sup> —100% O <sub>2</sub>
Repeatability of output resolution after calibration	0.5% O <sub>2</sub>
	0.5% O <sub>2</sub>
	0.01% O <sub>2</sub>
Response time (step 10-90%)	
Connect rapid response sensor:	4s
Connecting standard response sensor:	15s
Initial warm-up time (until output stabilized)	5—10mins
Output unactivated start delay (heater preheating)	
From OFF mode to ON mode:	60s
From standby mode to ON mode (only RS485):	20s

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44 (0) 1236 459 020 and  
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1) Sensors and interfaces for proper atmospheric pressure compensation.  
2) Running at O<sub>2</sub> below 0.1% will damage the sensing element.  
3) The accuracy of analog output variables is only valid when calibrated using the default calibration values. For RS485 variables, this applies when calibrated with the default : lower limit of 20.7% of full scale<sub>2</sub> within the range of 0.1% to 25% of full scale. When the<sub>2</sub> maximum accuracy exceeds 25%, the interface and sensor must be calibrated using certified gas to achieve the required full-scale range.

All dimensions are in mm. Tolerance =  $\pm 1$ mm.



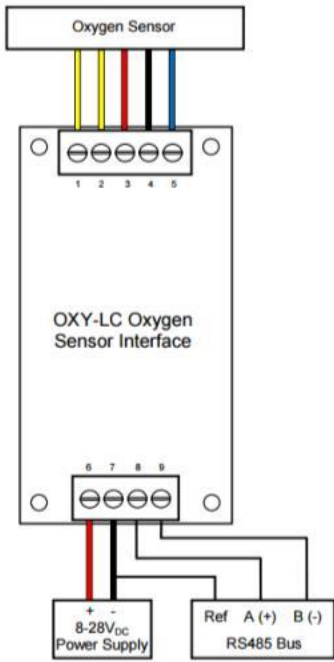


# Electrical interface

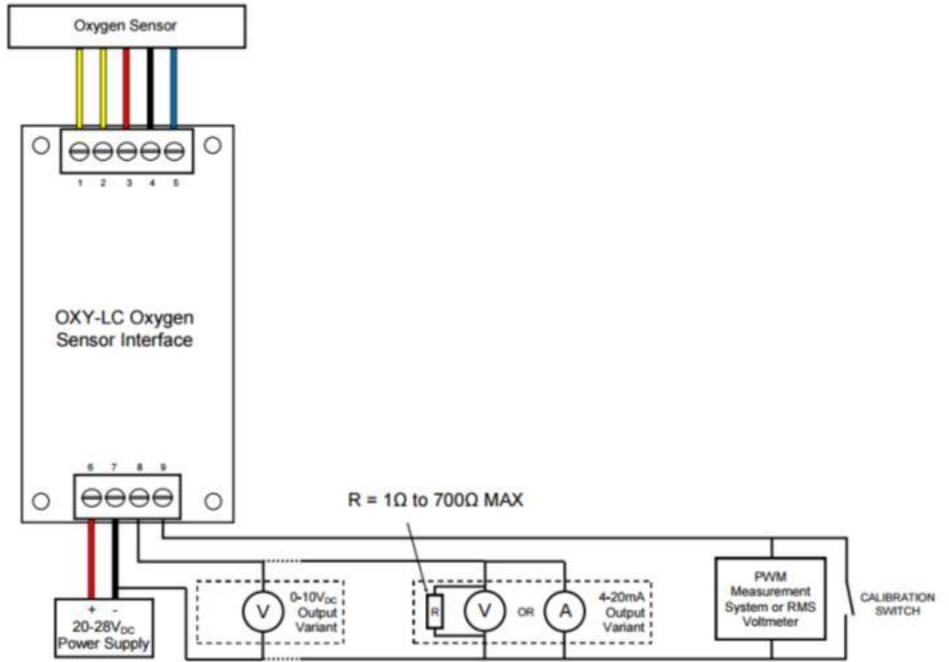


Always use the correct ESD handling precautions on the interface board.

## RS485 variables



## analog variable



Pin	distribution
1	Sensor heater+ (1) Se-
2	nsor heater 0V DC (2)
3	Sensor pump
4	Sensors public
5	Sensor Sensor
6	8-28V DC
7	0VDC
8	RS485 A (+)
9	RS485 B (-)

Pin	distribution
1	Sensor heater + (1)
2	Sensor heater 0V DC (2)
3	Sensor pump
4	Sensors public
5	Sensor sensing
6	20—28VDC
7	0VDC
8	4-20mA or 0-10V DC
9	Calibrate IN/PWM OUT

Communication Settings	Windows default
address	1
Baud rate	9600
P	not have
stop bit	1

O <sub>2</sub> %	output value			
	0—10VDC		4—20%mA	
	0.1—25% O <sub>2</sub>	0.1—100% O <sub>2</sub>	0.1—25% O <sub>2</sub>	0.1—100% O <sub>2</sub>
20.7%	8.28VDC	2.07VDC	17.25mA	7.34mA
100%	-	10VDC	-	20mA
90%	-	9.0VDC	-	18.4mA
25%	10VDC	2.5VDC	20mA	8mA
5%	2.0VDC	0.5VDC	7.2mA	4.8mA
0.1%	0.04VDC	0.01VDC	4.06mA	4.02mA

### annotate :

- Output pins 1 to 5. See the appropriate SST oxygen sensor data sheet for wiring/pin assignments.
- Each SST oxygen sensor has two heaters connected, which should be connected to pins 1 and 2 of the OXY-LC; the heater coil is non-polarized, but when the sensor housing is connected to one of the heater connections, pin 2 of the OXY-LC should be connected to the housing.

Use the following model definition rules to generate your specified model. Use only the letters and numbers that correspond to the sensors and output options you need-ignore the letters and numbers you don't need.

**digital variable**

O X Y - L C - 4 8 5

**analog variable**

O X Y - L C - 

X	X	X
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X	X	X
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Output type	The : measurement range (vol O 2%)	Heater voltage/ response time/end
<b>A</b> Current: 4-20mA	<b>25</b> imitate 0.1-25%	<b>400</b> 4.00V,15s responsive sensor, short cable (150mm)
<b>V</b> Voltage: 0-10V	<b>100</b> imitate 0.1-100%	<b>420</b> 4.20V,15s responsive sensor, long cable (150mm)
		<b>435</b> 4.35V,4s response sensor, short cable (150mm)
		<b>455</b> 4.55V,4s response sensor, long cable (150mm)

 **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](mailto: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.



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