Printed Circuit Board for Oxygen-Sensor

Application

The printed circuit board (PCB) contains a potentiostatic circuit like the one described in application note application note MEM2. The sensor's current flows through a 10 Ω resistor and is converted into an **output voltage**. This PCB is **not** a transmitter board that converts the output to 4-20 mA. Tab. 1 shows the typical sensor output values for a O2/M-100 with a sensitivity value of 80 µA/%.

Sensitivity [mV/%]	0.8
Output at 0% O_2 [mV]	0.1
Output at ambient air (21% O_2) [mV]	16.8
Overload concentration	> 50% O_2

Tab. 1: Typical O2/M-100 output voltage for a sensor with a sensitivity of 80 µA/%.

Please contact the technical support (sensor@membrapor.ch) if you have any doubts about the correct choice for your application.

Technical specifications

Supply voltage	+3.3 VDC (Min: +2.7 VDC, Max: +5.5 VDC)
Compliance	RoHS-compliant
Connection	Connector plug with wires
Compliance	RoHS-compliant
Weight without cable	~ 2.3 g

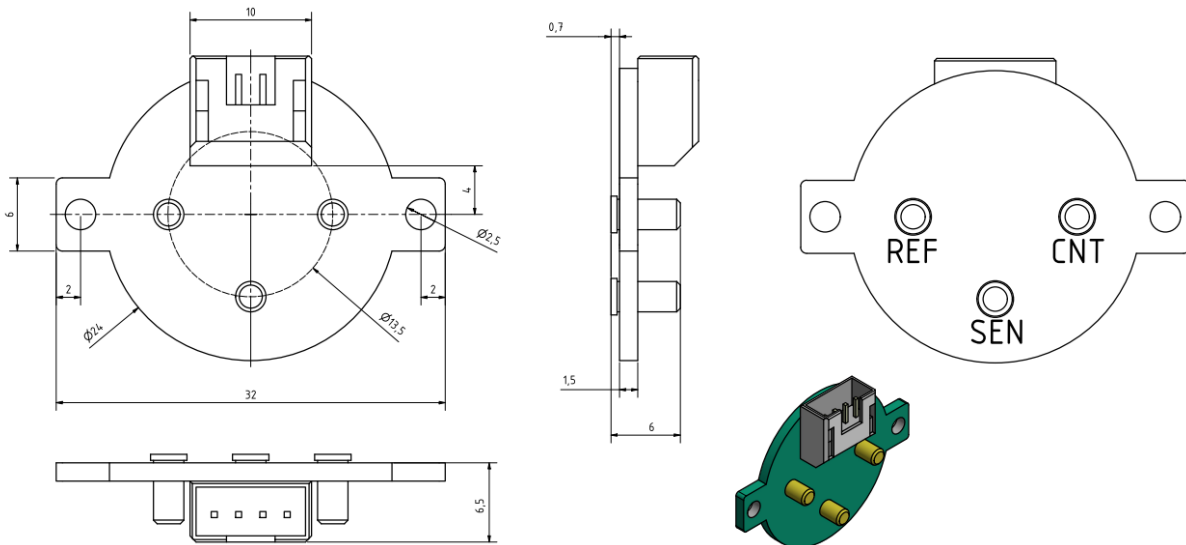Tab. 2: Technical specifications of transmitter board

Fig. 1: PCB dimensions

Operation

Note:

- **Pay attention to the correct polarity to avoid damaging the electronic circuit!**
- **Do not exceed the maximum supply voltage of +5.5 VDC to avoid damaging the electronic circuit!**

Fig. 2: O2 PCB with connection cable

Pin number	Color	Connection
1	Red	VCC: +3.3 VDC
2	Black	Ground
3	Yellow	VSI: Signal

Tab. 3: Pin numbers

The PCB is powered with +3.3 VDC. The cable is included in the delivery and has three pins (see Tab. *3*). Connect the power source to the connector: pin 1 (red) to +3.3 V and pin 2 (black) to Ground as shown in Fig. 3. Pay attention to the correct polarity. The voltage output signal can be collected between pin 2 (black) and pin 3 (yellow). It has a linear range from 0 - 30 mV.