

Oxygen Sensors and Meters

Measure gaseous O₂ in the laboratory and porous media. PPE housing for use in even harsh, acidic, and caustic environments



	SO-110	SO-210	SO-411	SO-421
Input Voltage Requirement	—		5.5 to 24 V DC	
Current Draw	—		0.6 mA (quiescent); 1.3 mA (active)	
Input Voltage (heater and thermistor)	12 V DC continuous (for heater); 2.5 V DC excitation (for thermistor)			
Heater Current Draw	6.2 mA (74 mW power requirement when powered with 12 V DC source)			
Thermistor Current Draw	0.1 mA DC at 70 C (maximum, assuming input excitation of 2.5 V DC)			
Measurement Range	0 to 100 % O ₂			
Output (Sensitivity)	2.6 mV per % O ₂	0.6 mV per % O ₂	Digital SDI-12 output	
Output at 0 % O ₂	5 % of output at 20.95 % O ₂	2 % of output at 20.95 % O ₂	—	
Measurement Repeatability	Less than 0.1 % of mV output at 20.95 % O ₂			
Non-linearity	Less than 1 %			
Long-term Drift (non-stability)	1 mV per year	0.8 mV per year	1 mV per year	0.8 mV per year
Oxygen Consumption Rate	0.1 μmol O ₂ per day at 20.95 % O ₂ and 23 C			
Response Time	60 s	14 s	60 s	14 s
Operating Environment	-20 to 60 C; 0 to 100 % relative humidity (non-condensing); 60 to 140 kPa			
Dimensions	32 mm diameter, 68 mm length			
Mass	175 g (with 5 m of lead wire)			
Warranty	4 years against defects in materials and workmanship			

Simple Calibration

Output is proportional to oxygen concentration, which enables on-site calibration in open air conditions.

Heated Detector

The protective membrane can be heated to prevent water from condensing and blocking the diffusion path. The heater is typically used when sensors are deployed in soil or compost where relative humidity is close to 100 %.

Output Options

Available as an analog version with unamplified voltage output or digital version with SDI-12 communication protocol. The sensor is also available attached to a hand-held meter for easy spot measurements.



Case Study

Apogee SO-110 units measured the oxygen levels of waterlogged soil to understand the effects of excessive moisture on corn development.