

**Introduction:**

The MapXpert represents a breakthrough in headspace analysis for the food, beverage and pharmaceutical industry. With its intuitive and easy to use operator interface, the MapXpert will rapidly become the most valued quality control tool in the production of any type of modified atmosphere product.

The MapXpert is very simple to use: press a button and read the result! At the same time, MapXpert makes it possible to get rid of the traditional paper logs, which are widely used in quality control processes. Due to the innovative data logging options in the MapXpert, it is possible to store all essential production data in the unit, such as production line, batch number, operator name, product identification and of course the measuring data.

The MapXpert works by drawing a small sample of the headspace gas into the sensors. The gas is then analysed and the result is displayed on the display within a few seconds.

Applications:

- **Pharmaceutical vials**
- **Fish**
- **Pharmaceutical packaging**
- **Wine**
- **Fresh meat**
- **Cooked meat**
- **Vegetables**
- **Salads**
- **Snack foods**
- **Ready meals**
- **Coffee pods**

Features:

- Extremely small sample volume (Zirconia version)
- Extremely short measuring time
- Up to 20 product set-up programs for alarms and data sorting
- Configurable user login management, logged with data collections
- User configurable data logging fields for batch number, production line and other valuable data
- Interface for USB memory device for export of logged data
- Logging of more than 10,000 test results
- Configurable data transfer of measurements on RS232 and LAN
- Ready to use on delivery, no pre-calibration is needed
- Documentation functions ensure both complete traceability and the need for quality management

Principle of operation

Oxygen

The MapXpert's O₂ sensor is based on a zirconia or an electrochemical sensor. The zirconia sensor produces a small voltage or electromotive force (EMF) in the presence of oxygen. This EMF is directly related to the oxygen concentration of the gas being passed through the sensor, which is then shown in the display. The sensor is remarkably sturdy and stable, the readings are highly repeatable and the sensor is very fast. The zirconia sensor will not saturate in high oxygen concentrations, which means that the MapXpert can be used across a broad range of applications with a measuring range from 0-100% with a high resolution – still with high speed and accuracy.

Carbon dioxide

The CO₂ sensor is a self-contained non-dispersive IR sensor complete with IR source and dual wavelength filter. There are no moving parts and the sensor is very sturdy. The CO₂ sensor range is 0-100%. The sensor only needs calibrations once a year and the reading is not influenced by humidity, ambient air pressure or temperature.

Available configurations	O ₂ (Zirconia)	O ₂ & CO ₂ (Zirconia/dual beam infrared)	O ₂ (Electrochemical)	O ₂ & CO ₂ (Electrochemical/dual beam infrared)
Key features	The fastest and most accurate oxygen sensor	The fastest and most accurate oxygen sensor combined with a full-scale temperature compensated carbon dioxide sensor	The electrochemical sensor is not cross-sensitive to alcohol or carbon monoxide. Expected sensor lifetime is 2 years in atmospheric air	The combined O ₂ /CO ₂ electrochemical analyser features a unique compensation for both temperature and cross sensitivity to CO ₂ in the O ₂ reading.
Sample volume	3ml	6ml	5ml	6ml
Sample time	5 sec	10 sec	7 sec	10 sec
Measuring range	0-100%	0-100%	0-100%	0-100%
Resolution	O ₂ : 0.001%	O ₂ : 0.001%/CO ₂ : 0.1%	O ₂ : 0.1%/CO ₂ :0.1%	O ₂ : 0.1%/CO ₂ : 0.1%
Sensor accuracy at 1% O ₂ and 20% CO ₂	+/-0.01% oxygen	+/-0.01% oxygen and +/-0.8% carbon dioxide	Better than +/-0.3% oxygen	Better than +/-0.25% oxygen and +/-0.8% carbon dioxide
Heating time	10 min	10 min	2 min	10 min
Dimensions & weight	180 x 315 x 220 mm (HxWxD), 3.7 kg			
Power supply	100-240 VAC -50/60 Hz			
Options	Built-in printer, Can Piercer for testing cans and wine bottles, standard consumable kit			
Connections	USB, Ethernet (RJ45), RS232(DB9)			
Third-party software compatibility	Mettler-Toledo FreeWeigh.net, Sartorius ProControl (WinSPC), OCS ComScale NT, Microsoft SQL database			