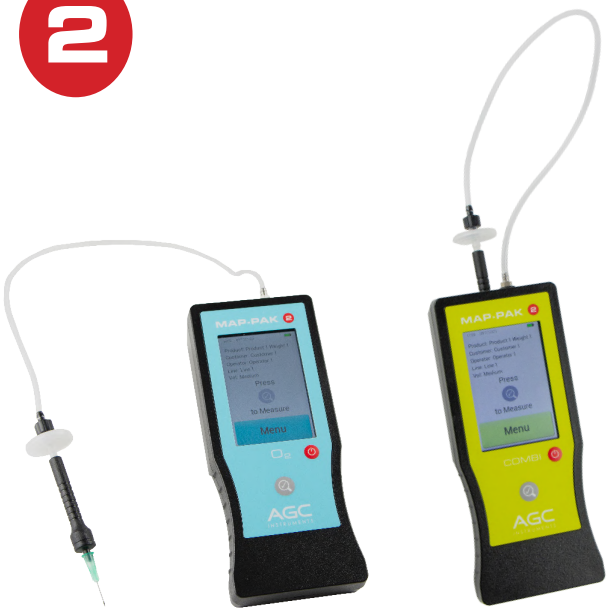
MAP-PAK 2

Modified Atmosphere Packaging



Accurate Analysis of Gas Flushed Food Packaging

Following on from the success of the original Map-Pak analyser, the Map-Pak 2 is the fifth generation of analysers from AGC Instruments designed specifically for the Food Industry. It has been completely re-designed with a new large colour Touch Screen, Lithium Battery, and Large SD memory to drive an easy-to-use User Interface. With a faster CO_2 sensor complimenting the industry-leading O_2 sensor, the Map-Pak 2 gas analyser swiftly and precisely measures the O_2 and O_2 / CO_2 content of gas flushed food packaging (Modified Atmosphere Packaging).

1. The ***Map-Pak 2 Combi*** measures the Oxygen, Carbon Dioxide and Nitrogen content in gas flushed food packages (the latter being as a balance gas).
2. The ***Map-Pak 2 O2*** measures the Oxygen content in gas flushed food packages.

The Map-Pak 2 was developed as a quality control device with a wide range of features which can be used with minimal training. As a result, this analyser provides a key analytical solution to cover your food packaging quality control requirements. The easily programmable 'Product Profile' feature incorporates all the important information and control features required and is comprised of the following editable parameters for each product:

- Customer Name
- Product Name
- Weight
- O_2 and CO_2 Alarms (High & Low)
- Gas Volume Setting
- CO_2 Response Setting for improved accuracy

These lightweight portable analysers are easy to use in quality control functions and can be used for all food applications, as well as some applications in the pharmaceutical industry. Sample measurements and results are achieved within 20 seconds and the operator can modify the various features of the analyser to best suit their requirements. A minimal gas sample is required, and three sample volume options are available to suit all packaging types. A long battery life also ensures continuous operations in busy production schedules.

The probe holder has now been integrated into the unit for ease of use and storage as well as safely covering the needle when not in use. Strengthened and wipe-clean materials are used in an ergonomic design for weight reduction and increased comfort for the operator. There are also features such as the new internal Filter and external Hydrophobic Filter to protect the analyser sensor array which saves on maintenance costs. The new modular probe also allows for the easy replacement of parts by the end user. Furthermore, no software is required to download the results to a PC which is done via the dual-use USB cable provided for charging and data transfer.

Features

- 3.5" Colour Touch Screen Display
- Measurement range of 0% - 100% in 0.1% Increments
- Highly Accurate
- Measurement results achieved quickly
- Integrated data logging: 10,000+ measurements stored
- Adjustable alarm feature with pass/fail indicator
- Integrated Safety holster for probe & needle
- Selectable Operator I.D. & Production Line Numbers
- Programmable Product Profiles with full reporting of information for traceability
- Multiple Languages Loaded on Device
- No PC Software Required
- Standard dual-use USB cable for charging and data transfer to PC
- Easy to Use
- Low Cost of Ownership
- Holds Calibration for 1 year
- High Capacity Lithium Battery
- Programmable Auto-Shutdown function to save power
- Modular design with easy to replace tubing and fittings
- Upgraded hydrophobic filter
- Internal filter for additional protection for sensor array
- New Faster CO_2 sensor
- Purge Function for clearing the sample path
- Bluetooth® Connectivity
- Wi-Fi Enabled.

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Principle Of Operation

The Map-Pak 2, using a small gas sample from the gas flushed pack, measures, and records levels of Oxygen (O_2) or Oxygen and Carbon Dioxide (CO_2). The levels of gas are measured using specially customised sensors; Oxygen levels are measured by an electrochemical sensor and the Carbon Dioxide levels are measured by a nondispersive infrared sensor (NDIR). An electric pump automatically draws the gas sample from the food packaging via the sample probe into the sensor array. The O_2 and CO_2 particles are detected by the respective sensors and the measurements are displayed on the screen within seconds. The N_2 level is then displayed as a balance gas reading.

Key Features

- Lightweight & Portable
- Fast and Accurate O_2 & CO_2 readings
- Easy to use interface
- Minimal gas sample required
- Holds Calibration for one year; no interim procedures required
- Modular probe design with easy to replace parts
- Long Battery Life / Alternative mains power supply
- Sample Flow sensor for Needle blockage alarm

Results and Reporting

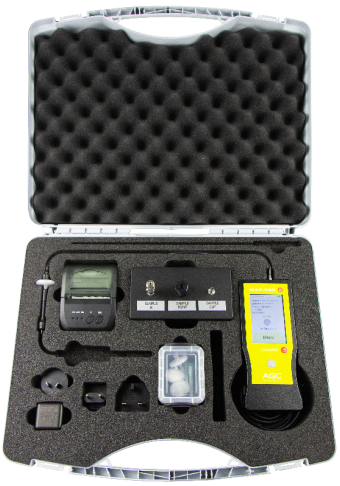
Results can be stored on the Map-Pak device and can be downloaded to a computer as a CSV (Excel) file using the USB cable provided. Furthermore, a small portable printer is available for the Map-Pak range to print results on receipt-size paper or labels. The Map-Pak 2 communicates wirelessly via Bluetooth® with this compact printer using special thermal paper which means that no ink cartridges are used, thereby cutting down on costs. The fast print speed ensures that results are printed promptly for your record keeping needs with a fine cutter to separate the records easily. Each of these reporting options allows the user to display their results in a way that best suits their HACCP system. Furthermore, the calibration certificates provided with each Map-Pak unit adheres to the Modified Atmosphere Packaging and HACCP requirements for audits.

Calibration & Calibration Interface

The Map-Pak 2 analyser requires an annual calibration only. There is an Ambient Calibration function available to the user to check the calibration using an air sample (O_2 being 20.9% typically). The Calibration Interface can be used for checking the accuracy of the Map-Pak unit against a certified and known gas mixture. Using 1/8" Tubing from the gas regulator fitted to the gas cylinder can be connected and tightened to the 'Sample In' fitting provided on the calibration interface. The unit provides the correct flow and filtration required for performing these calibration functions and also serves as an additional Quality Control check for the gases used in the food packaging process.

Typical Applications

- Meat and Poultry
- Seafood
- Pre-cooked Meats
- Dairy Produce
- Fruits & Vegetables
- Convenience Foods
- Baked Goods
- Salads
- Pasta
- Coffee
- Pharmaceuticals
- Glove Box Analysis



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Specifications	
Accuracy	O_2 ± 1% (full scale) / CO_2 ± 5% (of reading e.g. 20% CO_2 = Accuracy of ± 1%)
Accuracy at 1% O_2 & 20% CO_2	Better than ± 0.25% O_2 and Better than ± 1% CO_2
Resolution	0.1%
Repeatability	1% relative to gas reading
Measurement Methods	Electro Chemical Sensor (O_2) & Nondispersive Infrared Sensor (CO_2)
Measurement Range	0% to 100% in 0.1% increments
Operating Temperature	0 to +40 Degrees Celsius
Response Time	<20 seconds
Sensor Lifetime	O_2 Sensor - 2 years* CO_2 Sensor - Indefinitely
Sample Gas Volume Options	Low, Medium & High
Sample Inlet Fitting	Sturdy Nickel Plated Brass Bulkhead Connector for tubing connection
Sample Probe Fittings	User replaceable and modular design with flexible PVC Tubing
Filters	External Hydrophobic Filter & Internal Inline Filter to protect Sensor Array
Product Profiles	20 Programmable Product Profiles combined with Operator ID's and Line Numbers
Sampling Function	One button to begin sampling and automatic display of results
Purge Function	Double press button to clear sample path with larger volume of a new gas mixture
Alarms	Customisable High & Low Alarms for both O_2 and CO_2 readings for each Product Profile
Calibration Interval	Once a year. Ambient Calibration option available for customer check if required.
User Interface	3.5" Colour Touch Screen Display
Data Storage	10,000+ Measurements stored internally on high capacity SD card
Data Output - PC	USB Cable (Type A Plug to Micro Type B Plug) provided Download results to CSV file (Excel) with no software required Wi-Fi Enabled
Data Output - Thermal Printer	Bluetooth® connection to Thermal Printer for automatic print-outs of results
Power Supply	USB Charger, 5V 2.1A with Universal AC Supply
Battery	Rechargeable Lithium Polymer High-Capacity Battery - 2500 mAh
Operation Time	8 Hours typically (depending on usage)
Power Saver Function	User defined auto-shutdown feature to conserve battery life (can be turned off also)
Enclosure	ABS plastic with recessed probe holder (Wipe-clean, Strong and light-weight)
Dimensions	190 (L) x 79 (W) x 47 (D) mm
Weight	Combi Model: 367g / O2 Model: 337g
Approvals	CE - according to EMC 2004/108/EC, Low Voltage Directive 2006/95/EC and EN300328 Manufactured under the auspices of ISO 9001:2015 Quality Management System
Accessories Provided (as standard with each unit)	Needles (5), Septa (100), Hydrophobic Filters (3), Bench Mount Carry Case (1 off), USB Cable (1), Universal Mains Adapter (1), User Manual (1) & Calibration Certificate (1).

*Higher O2 levels in food packaging may decrease this time depending on the concentration.

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