

Data sheet

CheckMate II

Head space gas analyser

- All in one concept, ensuring a perfect test result in your modified atmosphere packaging

NEW



Introduction to the CheckMate II

The CheckMate II represents a breakthrough for head space analysers and features, which is all you need to perform a perfect quality test procedure. It is designed for use in modified atmosphere within different industries e.g. the pharmaceutical and the food & beverage industry.

The CheckMate II gas analyser is available in the following versions and more versions are available on request:

- O₂ with either electrochemical or zirconia sensor
- O₂/CO₂ version, analysers with either a zirconia or electrochem. O₂ sensor together with infrared CO₂ sensor
- O₂/CO version is equipped with an electrochemical sensor
- O₂/CO₂/CO version with electrochemical O₂ and CO sensor and infrared CO₂ sensor

The new CheckMate II can be equipped with a barcode reader interface for easy product selection. An advantage is also remote access and firmware upgrade possibility via LAN and Internet. This feature means an easy and fast upgrade of new features or programming to the gas analyser. The CheckMate II works by drawing a small sample of the head space gas into the sensors, the gas is then analysed and the result is displayed on the new LCD display within a few seconds. CheckMate II includes an extensive range of unique features, e.g. the ability to perform an analysis on a very small sample size - less than 2 cc. This is very useful when testing vials or other pharmaceutical applications - making the CheckMate II a strong versatile head space analyser.

Intelligent sample start-up

The measurement procedure is designed for easy use and is fully automatic. When the syringe is introduced into the package the built-in pump automatically starts sampling the gas ensuring an easy and accurate operation. The result is quickly shown in the built-in LCD display and stored in the memory. The results can then be exported to an external computer via the USB data connection, saved on a memory stick or printed on the built-in printer (optional).

Features

- **NEW.** Extremely small sample volume
- Delivered ready to use - no precalibration or setting up is needed
- Built-in alarms for high and low gas concentrations
- **NEW.** Extremely short measuring time
- Built-in printer (optional)
- **NEW.** True colour LCD display with LED back-lite, operated via smart key navigation and touch screen
- **NEW.** Interface for USB memory device for export of logged data and import/export of product setup data
- Remote access and firmware upgradeable via LAN and Internet
- **NEW.** Barcode reader interface for easy product selection (optional)
- **NEW.** USB keyboard interface for an easy data entry
- Documentation functions both ensure complete traceability and need for various certification programmes
- **NEW.** Up to 500 product set-up programmes for alarms and data sorting
- **NEW.** Logging of more than 10,000 test results
- Automatic or manual test start-up
- Complete self-diagnostics
- Efficient water trap protection
- 12 months between calibrations
- Compact, sturdy and ergonomic friendly design
- SmartPen sampling device (needle protection)

Flexible interactivity with PC/Internet

The CheckMate II product and measuring parameter can also be set up via external PC and the operator has up to 500 product programmes to program. For easy implementation of a new menu language we have developed a very flexible firmware converter. This gives us the opportunity of performing a very secure and fast implementation of all languages such as e.g. Japanese etc.

Fast, sensitive and accurate

With the intelligent sample start-up and a measure time of less than 5 seconds for O₂ and less than 5 seconds for CO₂ the CheckMate II is a fast analyser. The heating time for the zirconia sensor is less than 10 minutes and less after periodical switch-off.

The sensitive zirconia sensor only needs a sample volume of less than 2 cc O₂ to give a very accurate result within +/- 1% of the reading and 4 cc CO₂ to give a result within +/- 2% of the full range.

 **PBI Dansensor**

Best choice for gas and permeability instrumentation

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Calibrated and ready to use

The CheckMate II comes with a calibration certificate and only needs to be re-calibrated once a year. The operator never needs to worry about compensation for air pressure or flow verification because this is all taken care of automatically via self diagnostics.

If you wish to re-calibrate the CheckMate yourself, this is a very simple process. You simply use the automatic calibration routine available in the menu.

Principle of operation

Oxygen

The CheckMate II O₂ version are based on a zirconia or an electrochemical sensor. The Zr sensor operates like a solid state battery, which produces a small voltage or electro motive force (EMF) in the presence of oxygen. This EMF is directly related to the oxygen concentration of the gas being passed into the sensor, which is then shown in the LCD display. The sensor is remarkably sturdy and stable, the readings are highly repeatable and the sensor is very fast. The Zr sensor will not saturate in high oxygen concentrations, which means that the CheckMate II O₂ 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 calibration once a year and the reading is not influenced by humidity, ambient air pressure or temperature.

Improved data collection and documentation

The new built-in printer provides a convenient record keeping tool for quality control personnel. It has direct keyboard access via USB connection point and easy paper replacement. Individual measurements can be printed. Furthermore the gas concentrations and tabulation of the number of alarm levels exceeded in a particular batch can be printed.

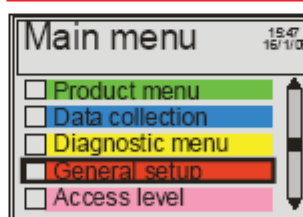
The CheckMate II has 500 categories for data logging, which are user defined and can be used to categorise the results by product type or packaging line. More than 10,000 measurements can be stored in the memory, printed or exported when convenient.

The CheckMate II has interface for USB memory device for export of logged data and import/export of product set-up data. The test results are therefore easy to export.

Technical Specifications

| Sensors | |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| O ₂ sensor: | Electrochemical or zirconia sensor |
| CO ₂ sensor: | Infrared, dual wavelength sensor |
| CO sensor: | Electrochemical sensor |
| Sample volume | |
| O ₂ sensor: | Elect. < 5 cc, zirconia < 2 cc |
| CO ₂ sensor: | < 4 cc |
| CO sensor: | < 13 cc |
| Measu. range | |
| O ₂ sensor: | 0 - 100%, auto ranging |
| CO ₂ sensor: | 0 - 100% |
| CO sensor: | 0-5,000 ppm |
| Resolution: | |
| Sensors: | 0.001-0.1% |
| Accuracy | |
| O ₂ sensor: | Electrochemical: 0-5%: +/-0,1% absolute and 5-100%: +/-2% relativ Zirconia: 0-1%: +/- 0,01% absolute and >1%: max. ±1% of the reading |
| CO ₂ sensor: | Max. ± 2% of the full range |
| CO sensor: | 0-500 ppm: ± 25 ppm absolute 500-5,000 ppm: ± 5% relative |
| Response time | |
| O ₂ sensor: | Elect. < 7 secs., zirconia < 3 secs. |
| CO ₂ sensor: | < 5 secs. |
| CO sensor: | < 20 secs. |
| Heating time | |
| O ₂ , CO and CO ₂ sensor: | 10 minutes from cold state (shorter at temporary interruptions) |
| Operation | |
| Display: | True colour graphic LCD Icon based smart-key menu |
| Alarm: | Up to 500 products, with programmable alarm for high and low levels |
| Mecha. data | |
| Dimensions: | 180 x 300 x 220 mm (HxWxD) |
| Weight: | 4.5 kg |
| Other features | |
| Power supply: | 90-260 VAC, 50-60 Hz. Max. 60 W |

New menu set-up in colours



CheckMate II is developed with a new colour menu system. Each operation area has its own colour that continues throughout the menu system. The feature makes the gas analyser easy to operate and navigate.

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