

CMV-2

Data sheet

In-line quality assurance for modified atmosphere (MAP) enabled tray sealing and thermoforming machines



Stand-alone display

Display for built-in

Introduction to the CMV-2

The CMV-2 helps food manufacturers assure the quality of their modified atmosphere packaged products – whether they are packaged on thermoforming (rollstock) or tray sealing packaging machines. The CMV-2 assures that the gas content is correct in every single cycle, thus saving operator time for manual quality control and also limiting the risk of errors in between each manual quality inspection. In-line gas analysis is a key component in a robust and reliable quality assurance system, especially due to increasing demands for efficiency and speed in most packaging processes.

The CMV-2 works in-line by measuring the gas content non-destructively before sealing in each package index. If the oxygen or carbon dioxide is not within the user-defined levels an alarm will be activated and the packaging machine can be stopped – allowing the operator to solve the problem before any incorrectly packed products are leaving the production line. The system can also detect a number of malfunctions in the packaging machine, e.g. a leaking die, vacuum pump errors or a worn-out seal.

The CMV-2 can either be operated from an optional touch-screen display or, on some brands of packaging machines, it can be controlled directly from the packaging machine operator interface. The instrument can be combined with an electronic gas mixer, ensuring that the gas mixture is adjusted at the same time as the test program is selected on the analyser – thus ensuring less potential operator errors.

Fast, sensitive and accurate

The CMV-2 is very fast and accurate. The instrument is able to keep up with today's high speed packaging machines and the very accurate oxygen sensor will allow control of even very low residual oxygen levels.

Benefits

- Reduced operator time for manual quality control
- Saved costs on repacking and disposal of manually tested packages
- Saved costs for repacking due to incorrect gas content
- 100% quality assurance of the Modified Atmosphere Packaging process
- Each packaging cycle is monitored
- Can detect packaging machine malfunctions

Features

- Clean hygienic touch screen with easy to understand icon based operation
- Separate sensor and control unit for easy mechanical integration in the operation area of the packaging machine
- Built-in RS 232 for transfer of measuring data to central database
- Robust industrial design made in stainless steel/ aluminum
- Built-in alarms for high and low gas concentrations - alarms can stop the packaging machine automatically
- 32 set-up programmes, each with 4 alarm levels per gas
- Optional: integration with electronic gas mixer
- Optional: measurement of gas mixture in buffer tank

Full integration

The CMV-2 can be installed on virtually all kinds of vacuum gas packaging machines, and is also suitable for retrofitting on existing packaging machines. It is prepared for easy mechanical integration into the packaging machine. The sensor module can be placed inside the packaging machine and the display can be placed near the packaging machine controls. There are two different displays available for the CMV-2, a display for built-in (IP52) and a stand-alone display (IP65).

Calibrated and ready to install

The CMV-2 is delivered ready to use with a calibration certificate. As with other types of quality assurance equipment PBI-Dansensor recommends a yearly recalibration and certification, in order to ensure that the unit is working according to the specifications. Our local service points can offer this service.

Electronical gas mixer

The CMV-2 is also offered together with our MAP Mix 8000 EL, electronic gas mixer. This feature gives you the possibility of controlling an electronic gas mixer directly from the CMV-2. By doing so you will gain an extremely fast and secure control of the gas composition used in the modified atmosphere package. You will have the opportunity of mixing 2 or 3 gases.

Principle of operation

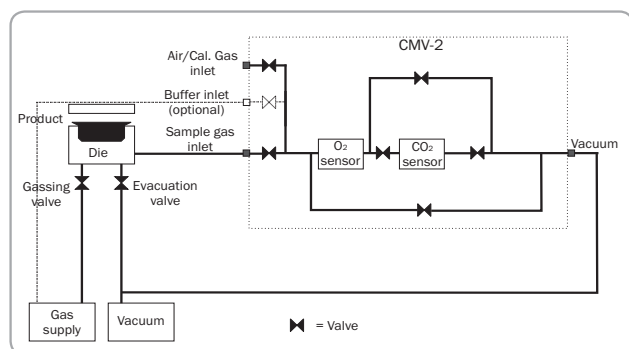
Oxygen

The CMV-2 uses a high accuracy zirconia sensor. The CMV-2 oxygen sensor is remarkably robust and stable, the readings are high repeatable, and the sensor is very fast (the response time of the sensor is 50 milliseconds).

Carbon dioxide

The CO₂ sensor is an infrared (IR) sensor with built-in temperature compensation.

System configuration and installation



The CMV-2 is electronically integrated with the packaging machine and can cope with even high packaging speeds.

Technical specifications

Sensors	
O ₂ sensor, ceramic, solid state sensor:	Measuring gas: Pure, dry inactive gases or mixtures of such gases Reference gas: Stationary atmospheric air (20.946 % O ₂) Sensor life: > Five years operation under the conditions given
CO ₂ sensor (optional):	Infra-red, dual wavelength sensor Sensor life: > Five years operation under the conditions given
Measuring range	
O ₂ sensor:	0.001 - 100%, auto ranging
CO ₂ sensor:	0 - 100%
Accuracy	
O ₂ sensor:	±1% of the reading in the calibrated range and ±1 on the last digit shown
CO ₂ sensor:	±2% of the full range
Heating time	
O ₂ sensor / CO ₂ sensor:	10 minutes from cold state (shorter at temporary interruptions)
Operation	
Display:	Menu-controlled touch screen with a large, easy to read, graphic display
Alarm:	Entry of up to 32 products, all with programmable prewarnings and alarm levels for O ₂ and CO ₂ respectively, if a CO ₂ sensor is mounted
Mechanical data	
Dimension: (HxWxD)	Sensor module: 160 x 260 x 340 mm External display: 150 x 200 x 100 mm Display for built-in: 129 x 213 x 76 mm Gas mixer: 190 x 234 x 365 mm (2-gas version)
Cabinet:	Sensor module: Stainless steel, IP63 Stand alone display: Stainless steel, IP65 Display for built-in: Stainless steel IP52 Mixer: Stainless steel, IP52
Weight:	Sensor Module: 10.4 kg External display: 5.5 kg Display for built-in: 4.4 kg Gas mixer: approx. 10 kg (2-gas version)
Electrical connections	
Communication	RS 232C serial port for external printer, PC or gas mixer
Power supply	90-110 VAC, 50-60 Hz, 180 VA 104-127 VAC, 50-60 Hz, 180 VA 194-237 VAC, 50-60 Hz, 180 VA 207-263 VAC, 50-60 Hz, 180 VA
Relay contract	1. "Ready", max 48V/1A 3. User defined alarms, max. 48V/1A

PBI-Dash-gaster-CMV2-UK-4

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