

# MAP Mix 8000 EL

## Data Sheet

### Electronic gas mixer for MAP applications

- With full detection of a too low gas inlet pressure



### Features

- High accuracy for optimal mixing quality
- Proportional gas mixing principle
- Prepared for use with the microprocessor controlled gas analyser CMV-2
- Electronic alarm for too low gas inlet pressure
- High flow rate
- Sturdy industrial design made in stainless steel/ aluminium
- Easy mixture adjustment via PC interface program or via analogue signal (0-10 V, 2-10 V)
- Standard ON/OFF solenoid valve for gas flow

### Gas mixer/gas analyser

For some applications it is an advantage to place the gas mixer and the gas analyser together. PBI-Dansensor offers a microprocessor controlled oxygen analyser CMV-2, which can be mounted together with our mixers.

The analyser, CMV-2, is based on a high accuracy zirconium sensor, developed and manufactured by PBI-Dansensor and featuring complete self-diagnostics, semi-automatic calibration and two alarm levels for O<sub>2</sub> concentrations. This product is developed to work with our proportional gas mixers on thermoforming and tray sealing packaging machines.

### Flexible and ready to install

All PBI-Dansensor gas mixers will be delivered pre-adjusted and ready to install. MAP Mix 8000 is an electronic gas mixer, which as a special feature is prepared for easy change of different pre-selected gases. This means that the user easily and safely is able to choose between a number of different gases to be used with the mixer.

### Controlling & implementation

The electronic gas mixers from PBI-Dansensor can be controlled via MixSet, a PC user interface developed in Labview, or from a PLC, which allows the user to define a new mix rate or quickly and easily to change to a pre-defined setting.

### Introduction to the MAP Mixers

The MAP Mix series (MAP Mix 9001 ME and 8000 EL) is based on a proportional mixing principle especially designed for packaging machines and other industrial applications where the gases carbon dioxide, oxygen and the inert gases nitrogen and argon are used either in a 2 or 3 gas combination.

The MAP Mix series can be used for e.g. tray sealing and thermoforming (roll stock) machines.

The PBI-Dansensor gas mixer is very user-friendly with high accuracy also under conditions usually causing problems for the repeatability of most other mixers.

The mixer features detection of a too low gas inlet pressure with an alarm relay output to the external control. The standard version of the mixer can be combined with the microprocessor controlled high quality gas analyser CMV-2 from PBI-Dansensor.

### Optimal blending quality

Due to the design of the proportional pressure system, deviating pressure conditions on the inlet side have virtually no effect on the accuracy. (See fig. 2 on the back of this page).

## Mixing principle

All our mixers are utilising the advantage of proportional mixing, which means that the mixing is carried out via proportional pressures on the two sides of a diaphragm. This diagram »absorbs« the deviation in the inlet pressure which normally is causing changes in the mixing conditions. (See fig. 1).

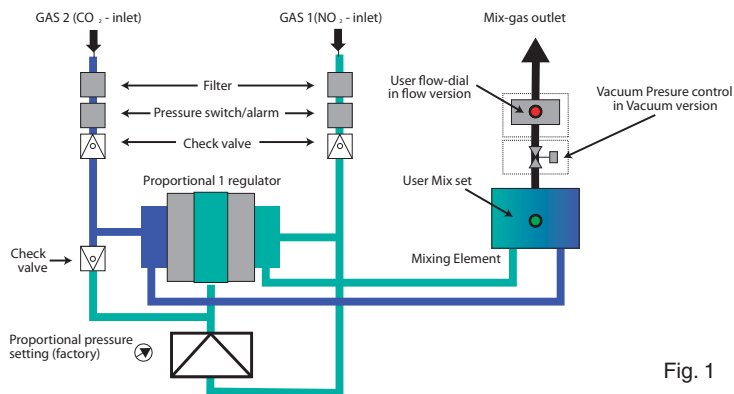


Fig. 1

## High accuracy

An example of an unprecedented linearity in the 15-100% flow range and 10-90% mix settings. (See fig. 2).

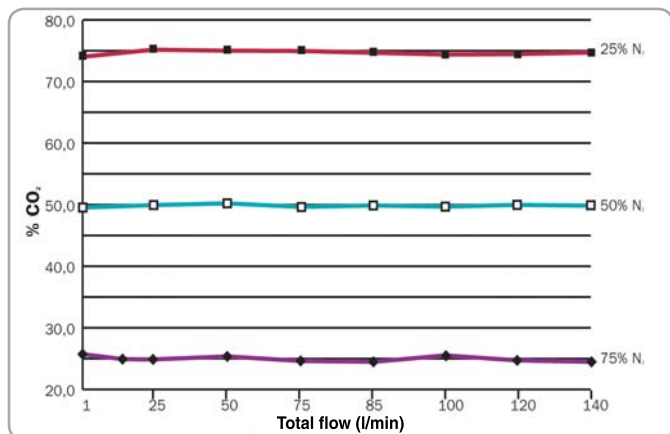


Fig. 2

## Configurations

Model / 9001 ME for thermoforming and tray sealing machines: (Buffer)	Max. outlet	Inlet pressure:	Cabinet dimensions: (DxHxW) mm.	Approx. weight:
25-250 L, 2-gas	2-6 bar	5.5-10 bar	420x194x235	10.0 Kg.
100-400 L, 2-gas	2-6 bar	5.5-10 bar	420x194x235	10.5 Kg.
20-200 L, 3-gas	2-5 bar	6.5-10 bar	420x194x475	12.0 Kg.
100-400 L, 3-gas	2-5 bar	6.5-10 bar	420x194x475	17.0 Kg.

Note: Specifications apply to the combinations of N<sub>2</sub>, CO<sub>2</sub> and O<sub>2</sub> but combinations with other gases are available upon request.

## Technical specifications

General	
<b>Accuracy:</b>	Better than +/- 2% of full scale
<b>Pressure:</b>	See below Flow shut off valve is standard
<b>Gas in / gas out:</b>	Rear panel
<b>Mixture adjustment:</b>	Proportional Via PC interface or analogue signal (0-10 V, 2-10 V). The mixer comes pre-configured to 2-10 V.
<b>Alarms:</b>	Inlet pressure alarm with indication per gas and relay alarm output.
<b>Cabinet:</b>	Stainless steel, IP 53

## Flow capacities MAP Mix 8000 EL

The MAP mixers are delivered with standard inlet pressure 8.5-10 bar. Other settings are optional and have to be specified when ordering the gas mixer.

2 gas / 250 litres					
Flow l/min	Buffer tank pressure				
Inlet pressure	2 bar	3 bar	4 bar	5 bar	6 bar
5.5 - 7.0 bar	132	84			
6.5 - 8.0 bar	183	145	90		
7.5 - 9.0 bar	226	220	170	110	
8.5 - 10 bar	262	257	221	190	120

2 gas / 400 litres					
Flow l/min	Buffer tank pressure				
Inlet pressure	2 bar	3 bar	4 bar	5 bar	6 bar
5.5 - 7.0 bar	267	187			
6.5 - 8.0 bar	346	287	185		
7.5 - 9.0 bar	453	418	345	236	
8.5 - 10 bar	505	480	434	332	198

3 gas / 200 litres					
Flow l/min	Buffer tank pressure				
Inlet pressure	2 bar	3 bar	4 bar	5 bar	
6.5 - 8.0 bar	145	104			
7.5 - 9.0 bar	207	183	141		
8.5 - 10 bar	235	217	185	127	

3 gas / 400 litres					
Flow l/min	Buffer tank pressure				
Inlet pressure	2 bar	3 bar	4 bar	5 bar	
6.5 - 8.0 bar	285	205			
7.5 - 9.0 bar	400	345	245		
8.5 - 10 bar	444	400	325	176	

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