mocon® / AMETEK®

05. – 07.09.2023

AMETEK MOCON

Modified Atmosphere Packaging
Package Testing and Gas Mixing

Christoph Zerwas / Ernst Lauper

AMETEK MOCON – Introduction

AMETEK Introduction

- **Global manufacturer of high-tech systems for demanding applications and niche markets**
- **Ca. 18.000 empfloyees**
- **Yearly turnover ca. 5 Mrd. US$ with more than 50 % outside USA**

Electronic Instruments Group

Process

Power & Industrial

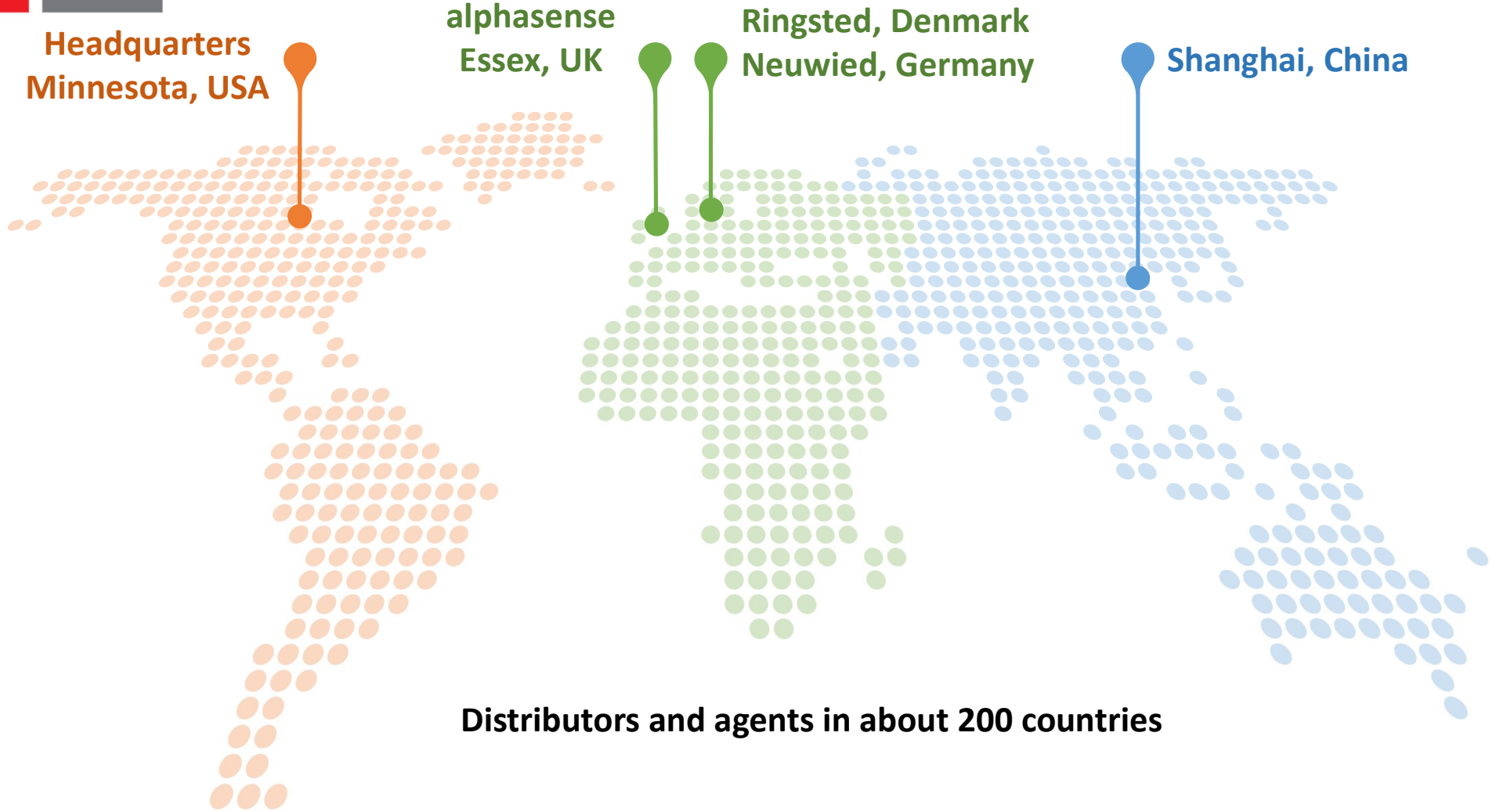
Aerospace

Electromechanical Group

Differentiated

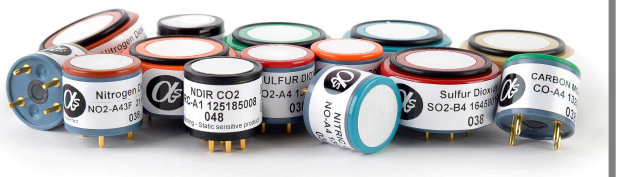
Floorcare & Specialty Motors

AMETEK MOCON Locations



Distributors and agents in about 200 countries

AMETEK MOCON Brands



alphasense
AMETEK

High-quality gas sensors for industrial safety and air quality. Wide product portfolio, multiple sensor technologies and reliable performance.

mocon
AMETEK

High-precision and reliable gas and vapour permeation analyzers, gas chromatographs and dairy analyzers

Dansensor
AMETEK

Headspace gas analyzers and gas mixers for Modified Atmosphere Packaging (MAP) as well as leak detectors for food, pharmaceutical and medical products packaging

Center of excellence MOCON Europe A/S

Ringsted, Denmark	120	Development	Manufacturing	Service	Ann. 20 M USD

Dansensor product line

Modified Atmosphere

Weak spots of packaging

DANSENSOR PRODUCT RANGE

QUALITY CONTROL
QUALITY ASSURANCE

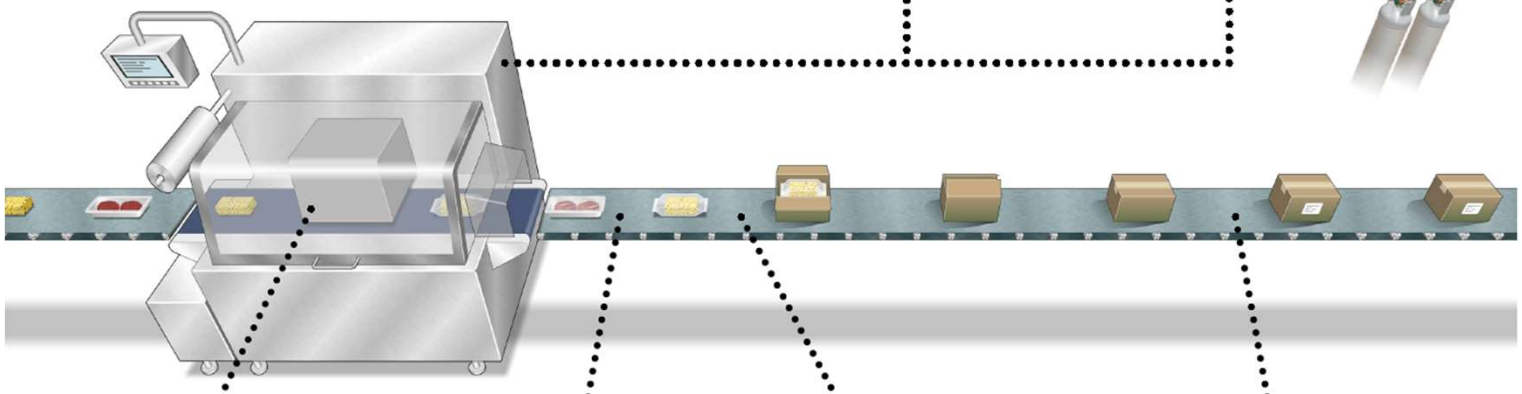
Our instruments fit into your processing line with testing equipment designed specifically for MAP (Modified Atmosphere Packaging) products

QA OF GAS MIX

Ensure that you are always getting the right mix of gas by using the Dansensor® MAP Check 3 Pressure. Measures oxygen and/or carbon dioxide in dry and inert gas mixtures.

GAS MIXERS

Get the composition correct, right from the start! Our MAP Mix Series ensures an accurate gas mix during the filling process. Mixes N_2, O_2, CO_2, Ar & air.



ON-LINE O_2/CO_2 ANALYZERS

Ready for QA? Ensure brand integrity by monitoring EVERY package. On-line MAP testing optimizes gas usage and eliminates wasted money, time and materials of repackaging. The Dansensor® ISM-3, MAP Check 3 and MAP Check 3 Vacuum are our solutions for flow packaging, tray sealing and thermoforming.

O_2/CO_2 HEADSPACE ANALYZERS

Our headspace analyzers quickly and accurately check O_2 and CO_2 levels in MAP. For convenient and reliable measurements, try the portable Dansensor® CheckPoint® 3. Or for even greater precision and traceability, try the advanced Dansensor® CheckMate 3 and OpTech O_2 Model P.

LEAK DETECTORS

Why risk spoiling customer relations with leaky packages when they're so easy to detect! Utilize Dansensor® LeakPointer® 3 and 3+ for non-destructive leak testing. Find the exact location of leaks with Dansensor® LeakPointer® H_2O and Dansensor® Lippke® VC1400. Or measure seal strength and package integrity with Dansensor® Lippke® 5000.

IN-LINE LEAK DETECTOR

Running at higher speeds? Dansensor® LeakMatic II is the solution. It provides continuous, fully automatic in-line leak testing. LeakMatic II ensures that every shipping carton makes your brand look good!

DANSENSOR HEADSPACE ANALYZERS

CheckPoint 3:

- Portable headspace analyzer with the newest sensor technology and low cost of ownership.

CheckMate 3:

- Advanced headspace analyzer. Accurate testing is combined with data logging capabilities - however, still very simple to operate.

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NEW APPLICATIONS, NEW OPPORTUNITIES

In 2017 we took handheld headspace analyzers to a new level. The CheckPoint 3 improved the workflow for many businesses.

NOW we expanded the CheckPoint 3 product range and can offer a specific solution for applications with high levels of oxygen or combustible gasses.

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CHECKPOINT 3 COMES IN TWO VERSIONS

- CheckPoint 3 (S) with solid state sensor technology designed for most known food applications depending on use and environment

- CheckPoint 3 (EC) with electro chemical sensor designed for high oxygen, smoked produce and combustible gas applications

- Proven track record - 4000 working units

- +35 years of experience within headspace technology

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CHECKPOINT COMES WITH PROVEN ADVANTAGES

- Fast and reliable testing
- Easy to use and simple interface
- Easy data collection, integration and analysis with dedicated software
- Attractive, ergonomic form
- Designed to fit customer application
- Proven track record + 4000 working units
- +35 years of experience within headspace technology

Headspace Analyser CheckMate 3

- CheckMate 3 (Zr) with solid state sensor technology designed for most known food applications depending on use and environment

- CheckMate 3 (EC) with electro chemical sensor designed for smoked products and combustible gas applications (coffee, bread etc…)

- More than 10’000 working units

- +35 years of experience within headspace technology

Headspace Analyser CheckMate 3

- Fast and reliable testing
- Easy to use and simple interface
- Easy data collection, integration and analysis with dedicated software
- Network capabilities
- Designed to fit customer application
- More than 10’000 working units
- +35 years of experience within headspace technology

CHECKPOINT 3 – DESIGNED WITH A PURPOSE

CheckPoint 3 / Check Mate 3 (S)

Vegetables
Raw and prepared

Meat
Raw and processed

Fish
Raw and prepared

Cheese

Prepared meals

Snack foods

Beverages

CheckPoint 3 / CheckMate 3 (EC)

Meats
Red and smoked

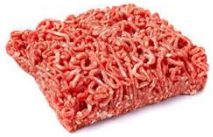
Fish
smoked

Bread
treated with alcohol

Fresh Pasta

Fermented foods

Coffee



Applications with high levels of oxygen or combustible gasses.

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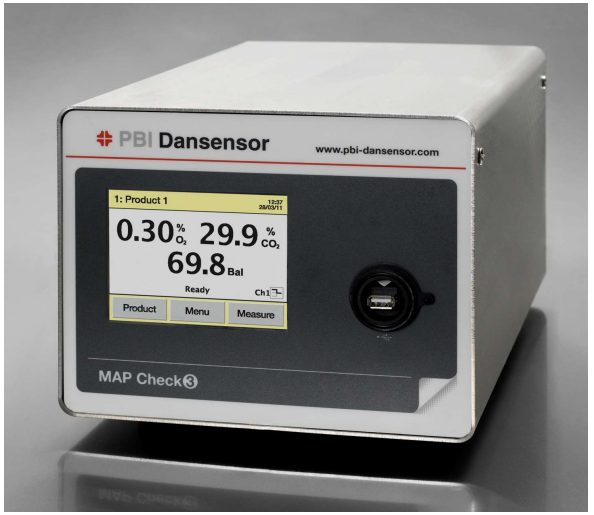
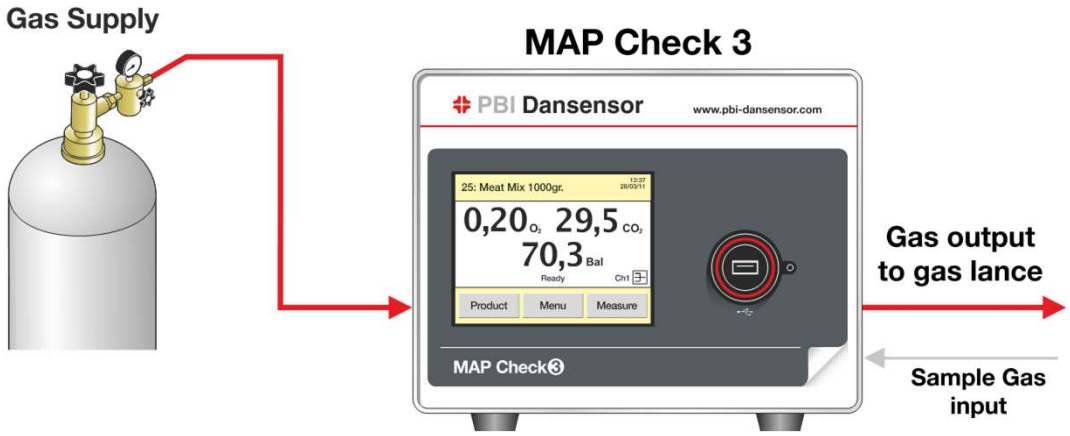
Gas Analyser On-Line

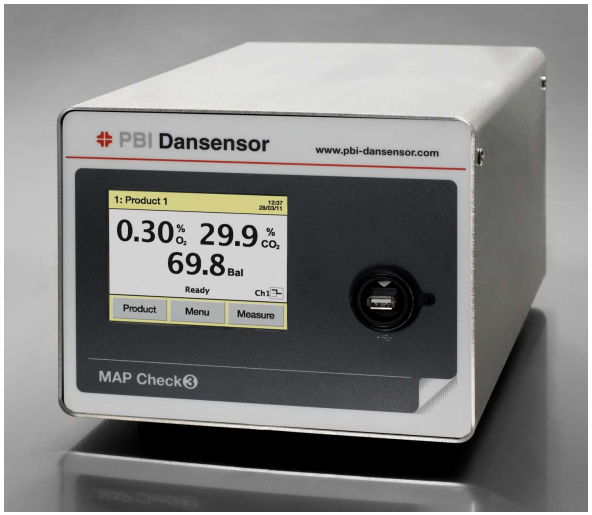
Gas Analyser On-Line

- *Sensor O2 oder O2/CO2*
- *GasSave function (up to 500 l/min)*
- *MUX (multiplexer)*
- *Display 5” LCD*

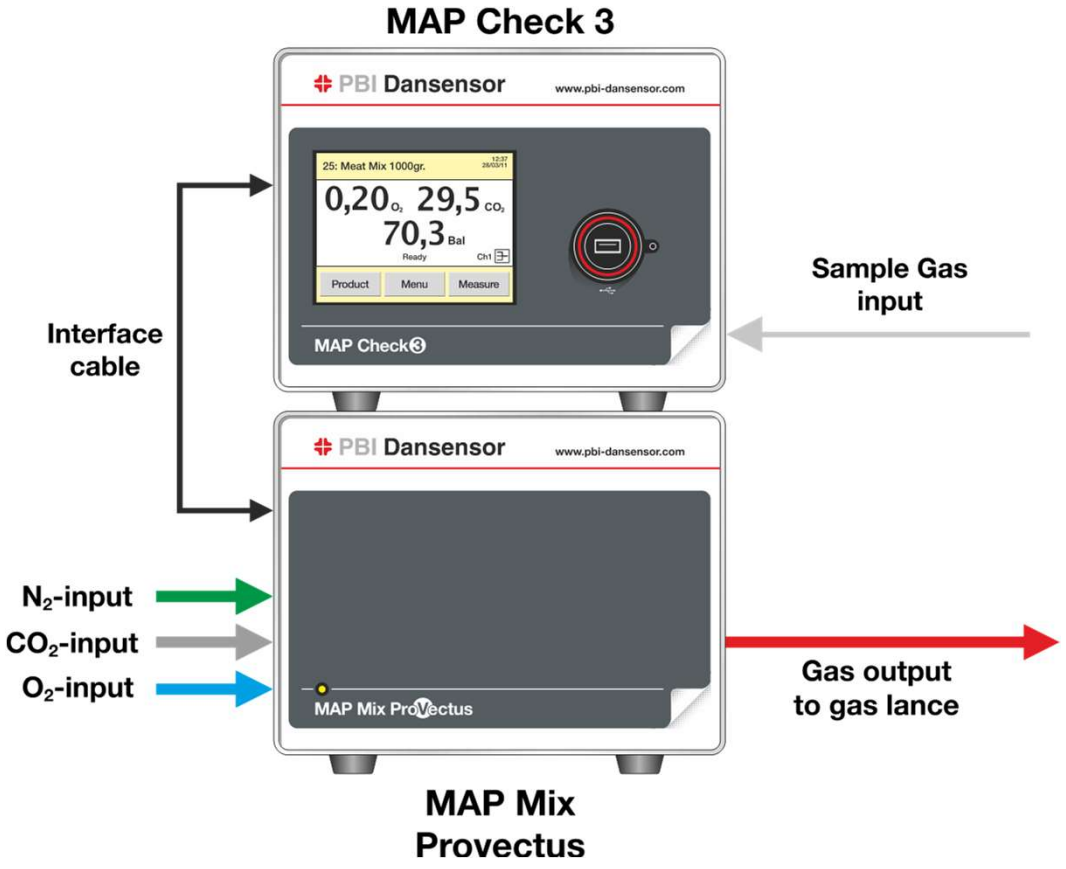


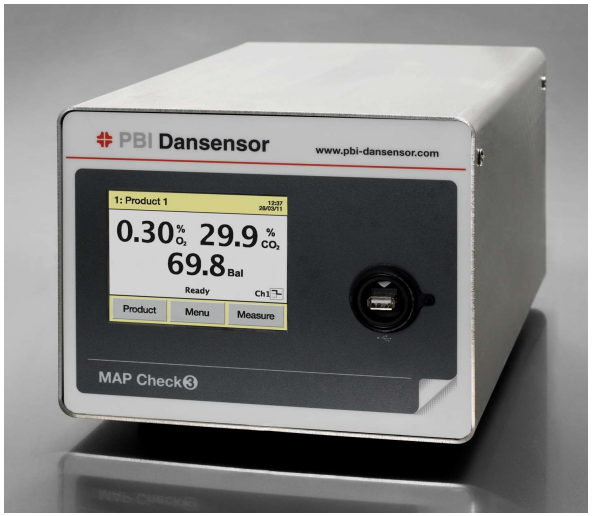
Gas Analyser On-Line



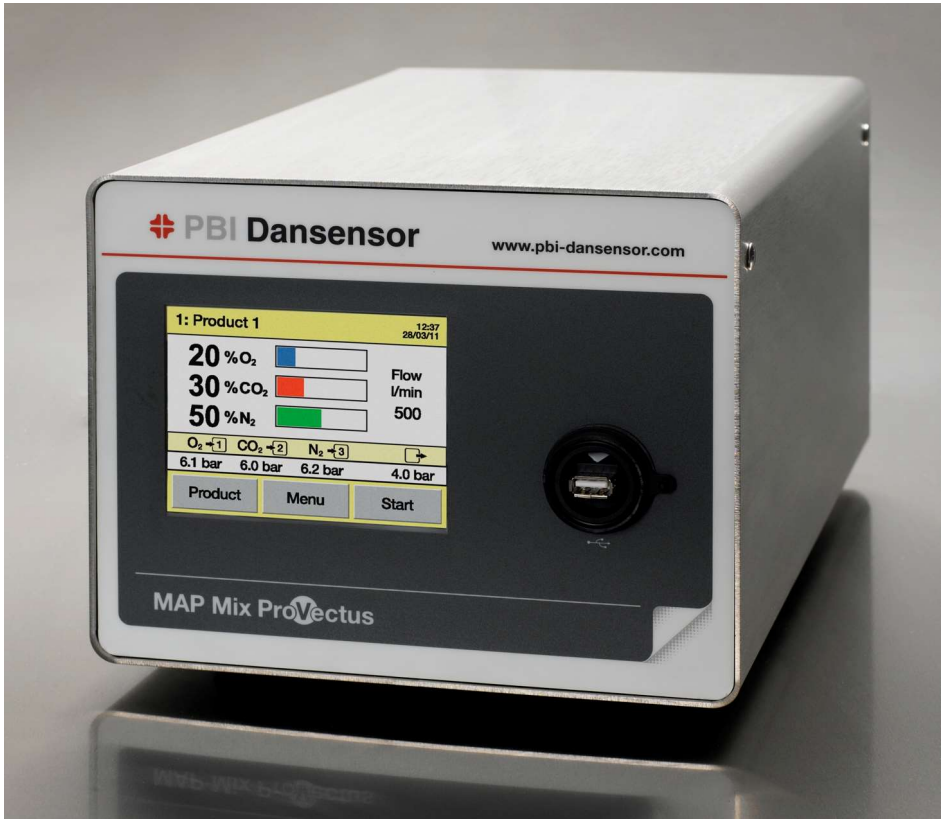


Gas Analyser On-Line



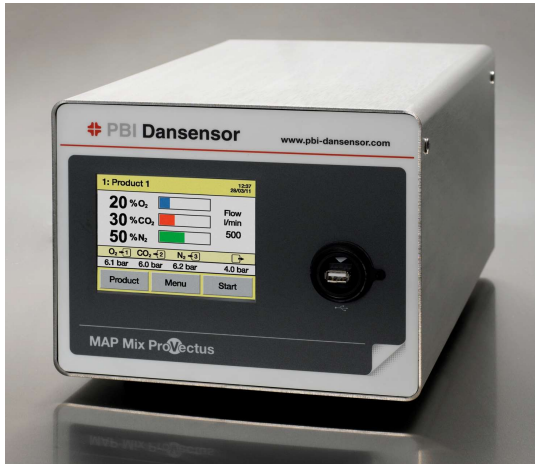


MAP Mix Provectus State ot the Art Gasmixer



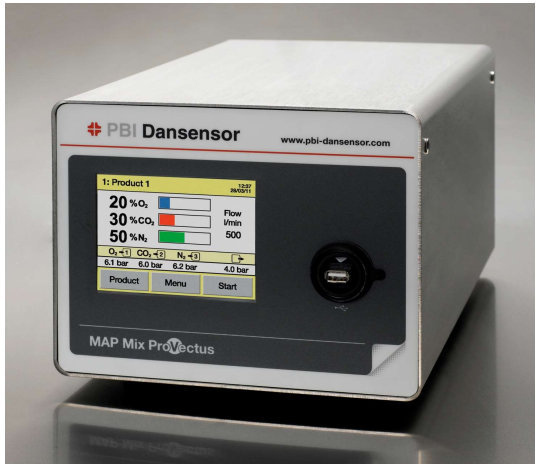
MAP Mix Provectus State ot the Art Gasmixer

- 2- or 3-gas models
- Connections: LAN, RS232, 24 Volt start
- Inlet pressure 2 -10 bar
- Pressure drop 1 bar at 10 bar inlet
- 500 l/min per gas-string



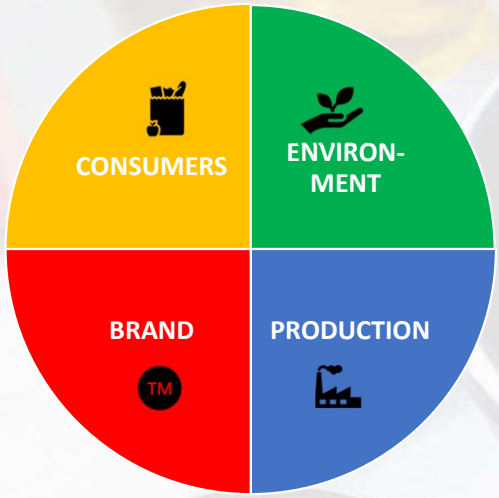
MAP Mix Provectus State ot the Art Gasmixer

- Large easy-to-read touch sreen
- USB on front and back
- Ethernet, Modbus, TCP
- IP-45 Protection Kit
- Mixes Oxygen, Carbon Dioxide, Nitrogen



We support food, healthcare and other industries

Ensure shelf life and product safety



Reduce waste and develop sustainable solutions

Protect brand reputation

Reduce cost and optimize production

Solutions from development to finished package quality control

R&D LABS

ON-LINE MAP PACKAGING PROCESS

OFF-LINE QUALITY CONTROL

Users trust our solutions

PACKAGING DEVELOPMENT

- Provide test data during development of new packages
- Provide extremely precise and repeatable test results
- Test different types of packaging materials, such as paper-based, renewable and biodegradable raw materials

ON-LINE PACKAGING PROCESS

- Decrease packaging and food product waste
- Online monitoring of gas content and mix
- Ensure high quality standards and protect consumer experience (nutritional, sensory and safety elements)

OFF-LINE QUALITY CONTROL

- Ensure whole package integrity
- Detect package leaks
- Ensure seal integrity

Dansensor instrument categories

PACKAGING DEVELOPMENT

CheckMate 3
LeakPointer 3
Leakpointer H2O
Lippke 5000
Lippke VC1400

ON-LINE PACKAGING PROCESS

Optimization of MAP gas mixing, flow and packaging process

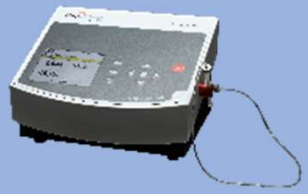
GAS MIXERS
MAP Mix Provectus
MAP Mix 9001 ME
Buffer Tank

ANALYZERS
MAP Check 3
LeakMatic II
ISM-3

OFF-LINE QUALITY CONTROL

MAP packaging product quality of the packaged product

LeakPointer 3
Leakpointer H2O
Lippke 5000
Lippke VC1400
CheckMate 3
CheckPoint 3



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