

Yieldmaster

YieldMaster



System for measurement of CH₄ gas formation potential

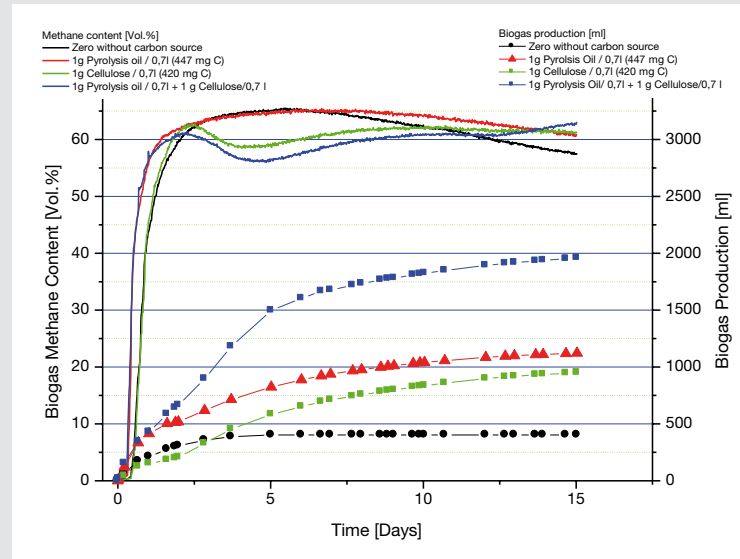


Advantages and applications

Precise control of methane production

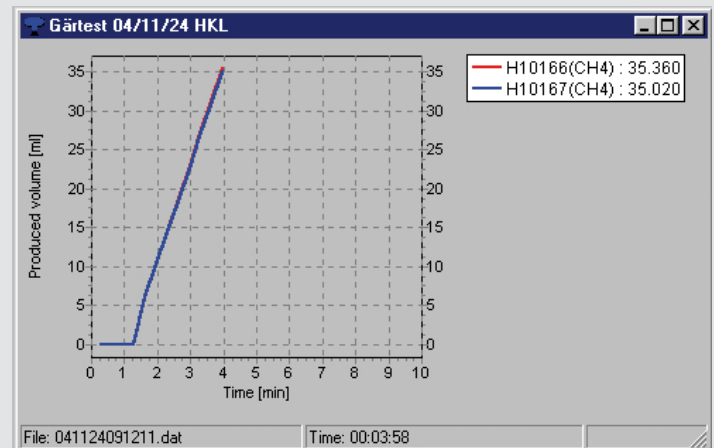
Advantages

- > complete system to analyze the CH₄ gas formation potential
- > monitoring metabolic processes
- > no minimum gas flow required, allows continuous measurement of smallest gas formations
- > real-time values during methane production
- > parallel measurement in up to 12 fermentation vessels
- > high grade of automation
- > high sample throughput



Field of application

- > parallel real-time analysis of CH₄ gas formation on the laboratory scale
- > process kinetics
- > yield maximizations
- > biogas analysis



At a glance

The Yieldmaster's facts

The Yieldmaster is a highly developed measuring system for the determination of the yield at the biogas production. The methane concentration can be measured in up to 12 fermentation vessels. Simultaneously, the MilliGascounter®* detects the yield of the gas. Via a multiplexer box, BACCom12, all the collected data are automatically send online to BACVis, a software for the complete documentation of all measuring results. When using Yieldmaster you do not have to consider minimum gas volumes produced during the running experiment.

Even the smallest amounts of gas can be measured. Due to this, the Yieldmaster is appropriate for very small fermentation vessels beginning with 500ml. As the experiment is started, the CH₄ concentrations and the gas volumes are recorded automatically. With the integrated temperature measurement the software BACVis immediately converts the measured gas into the standard volume. Due to the permanent CH₄-monitoring you can assure that the microorganisms are really producing methane instead of other unwanted metabolic products. Continuously and without any gap the CH₄-yield of each and every fermentation substrate can be determined and documented. The parallel construction of the analysis systems guarantees a high sample throughput and allows an easier comparability of the results. The Yieldmaster combines low installation times with an automatic data recording including a conversion to the standard volume. The new compensating reservoir device guarantees continues measurement under all circumstances.

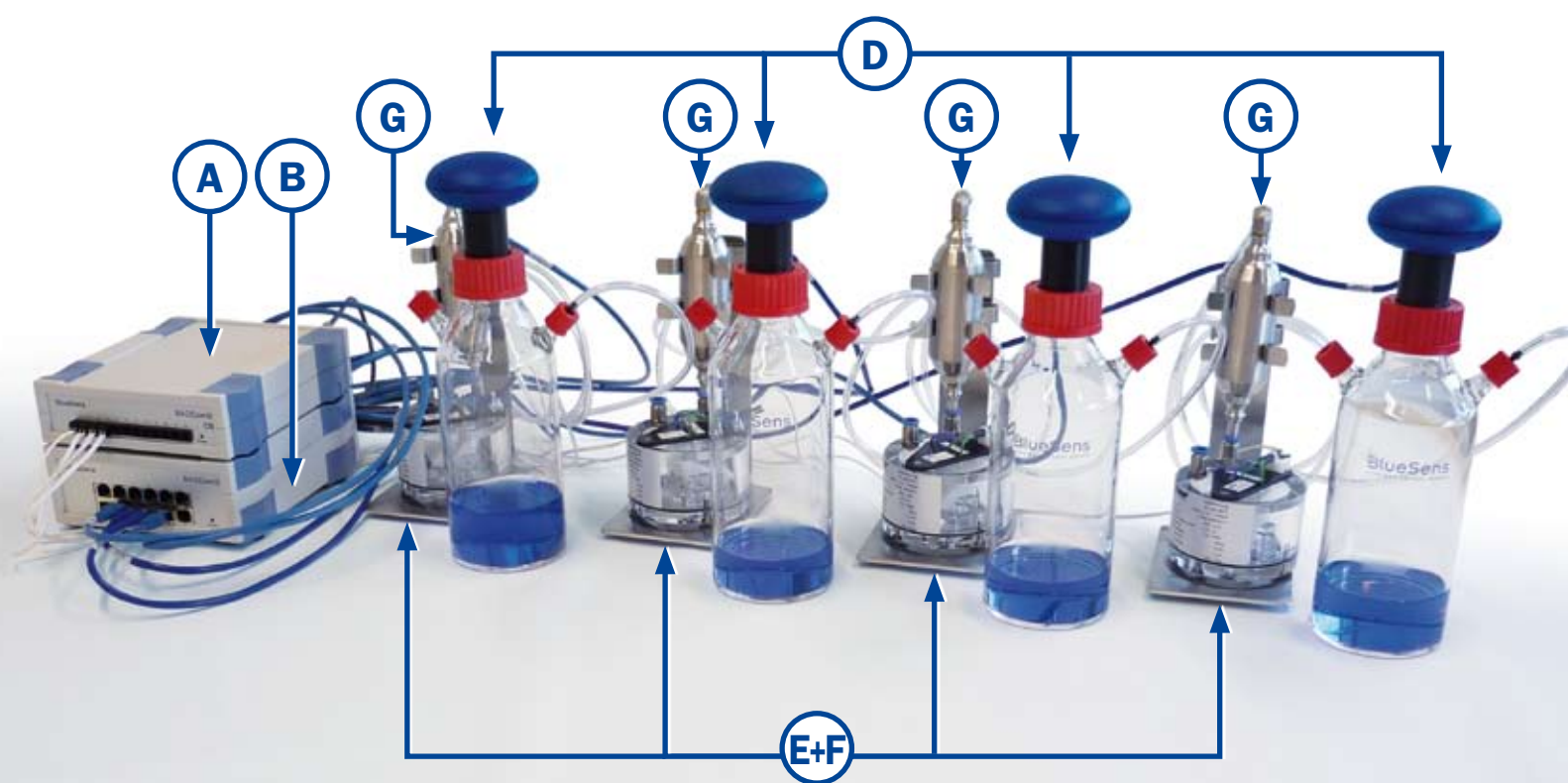
On demand the MilliGascounters® * can also be ordered with individual displays and/or for larger gas flows up to 4l per hour.

* Registered trademark. The MilliGascounter was developed at the University of Applied Science Hamburg under the leadership of Prof. Dr. Paul Scherer.



Purchased parts package

All components at a glance



	Description	Included in delivery	optional equipment
A	Counter box BACCOM12 CB with integrated temperature sensor	X	
B	Multiplexer BACCom12 with integrated pressure sensor	X	
C	Software system BACVis for automatically data recordings **	X	
D	Up to 12 CH ₄ -sensors	X	
E	Up to 12 MilliGascounter®*	X	
F	All needed accessories (hoses and cables) for installation	X	
G	compensating reservoir device **	X	
H	MilliGascounter®* (optional with display**)		X
I	MilliGascounter®* for larger gas flows up to 4l (0.14ft ³) per hour **		X
J	incubators/ incubators with cooling **		X
K	Fermentation vessels of every size **		X
L	Water bath **		X
M	Additional screw caps, gaskets, filters, hoses etc. **		X

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** not shown on image

Software

BacVis for a reliable data recording

BacVis

The Software BACVis is used to monitor the data of the methane concentrations and standard gas formations. Due to its easy handling, BACVis is self-explanatory. For every single application the results are recorded continuously and separately on your PC*. As the obtained data are recorded in the ASCII-format, you can process them without any problems.

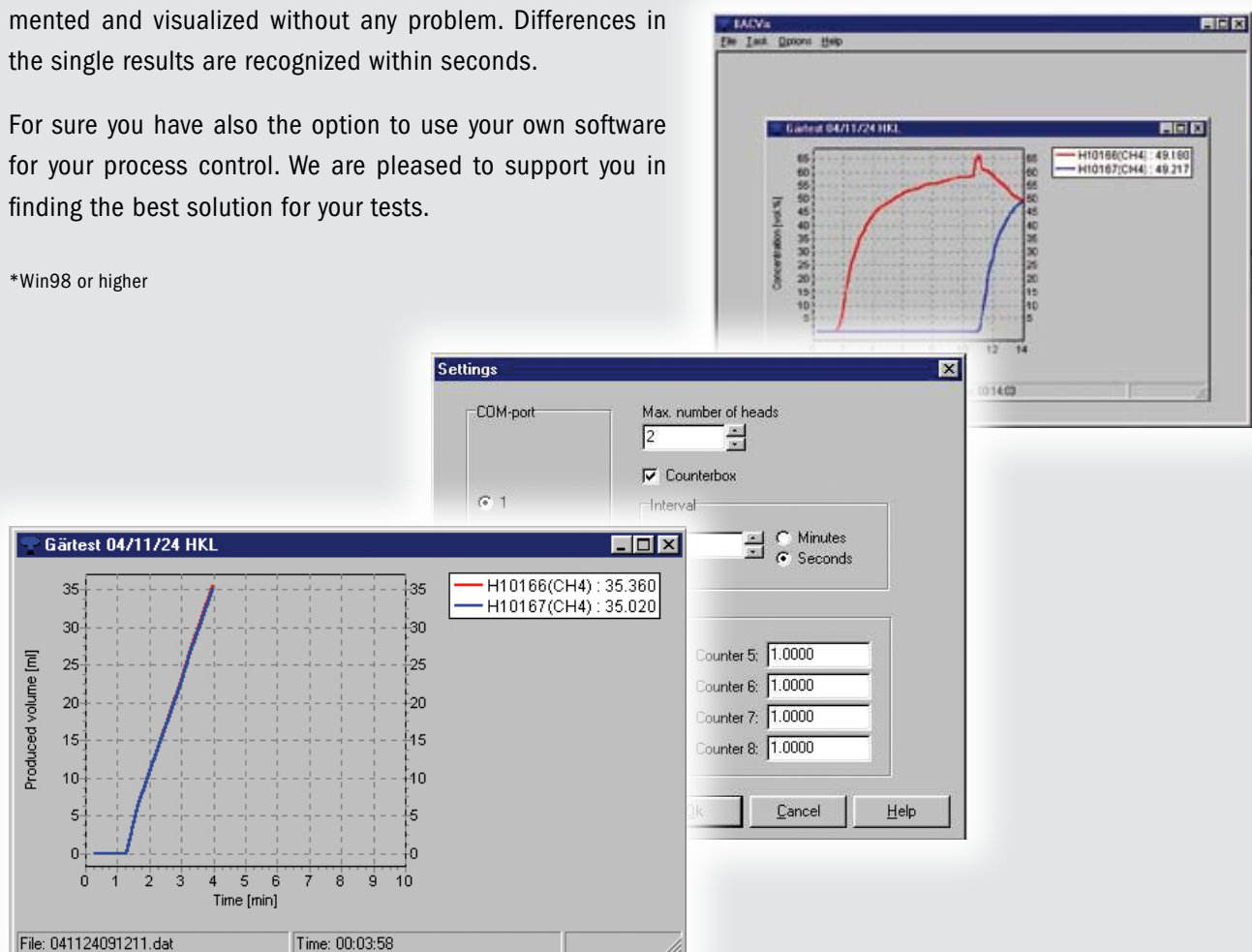
The sensors are recognized automatically by means of their identification number.

BACVis is able to monitor of up to 12 fermentation vessels. To run a variety of applications simultaneously you just have to start the software system for several times. Via the Ethernet interface a large number of multiplexer boxes can be integrated in your local LAN.

With this software the measurement results can be documented and visualized without any problem. Differences in the single results are recognized within seconds.

For sure you have also the option to use your own software for your process control. We are pleased to support you in finding the best solution for your tests.

*Win98 or higher



Sensor	
Principle	CH ₄ : Infrared, Dual wavelength
Measuring range	CH ₄ : 0 - 100 Vol. %
Drift/ Long-term stability	< ± 2% reading / year
Accuracy	< 0,2% FS*** ± 3% reading
Housing	PA
Dimension/Weight	80 x 160mm (3.15" x 6.3") D x H / approx. 260 g (0.57 lb)
Materials used for gas contact	Steel 1.4571, Viton, Sapphire, PTFE
Connection	GL 45

General	
Operating temperature	Temperature difference max. 25 °C (45 °F) e.g. 15 - 40 °C (59 - 104 °F)
Operating humidity	0-100% RF
Pressure range	Compensated : < ± 3% reading (range)
Storage temperature	0 °C to 60 °C (32 - 140 °F)
	< 75% RF not condensing

MilliGascounter®*	
Maximum flow	1 ltr./h **
Min. flow (resolution)	3 ml **
Accuracy	± 3%
Min./max. gas inlet pressure	5 mbar/100 mbar (0.07 psi/1.45 psi)

BACCom incl. integrated pressure measurement 0.8 to 1.3 bar (11.6 to 18.85 psi)	
Input	RJ 45 for up to 12 sensors
Output	RS 232, Ethernet
Power supply	12 VDC, 4 A
Dimension/ weight	205 x 160 x 45 mm (8.07" x 6.3" x 1.77") L x W x H / 600 g (1.32 lb)

BACCom CB incl. integrated temperature measurement	
Input	Plug connections for up to 12 MilliGascounter®*
Output	Internal bus to BACCom
Dimension/weight	205 x 160 x 45 mm (8.07" x 6.3" x 1.77") L x W x H / 600 g (1.32 lb)

BACVis	
Display mode	Graph for concentration (CH ₄ , CO ₂ etc.) and standard volume
System requirements	Win98 or higher

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** other on request

*** full scale

