



Dear Max Mustermann

You work with microorganisms and you would like to measure biomass online - besides O₂, pH and the oxygen uptake rate (OUR)? And all this without sampling and at the same time?

The recently launched SFR vario is the sole system on the market for simultaneous online measurement of biomass, O₂, pH & the oxygen uptake rate. Up until now, our customers already tested many [different organisms](#) with great success.

You will have the chance to see a live demo of the system at the smartLAB in Hanover, which is part of this year's Biotechnica. There you will have the chance to talk to our experts and to take part in our [lecture](#). The SFR vario allows to measure 4 vital parameters in up to 4 shake flasks in parallel. The fact that O₂, OUR, pH and biomass functionality can be purchased separately minimizes the investment to your actual need. It is the combination of functionalities which makes the SFR vario very interesting for media evaluation as well as process development and optimization. Any questions? Please feel free to [contact us](#) at any time.

Enjoy reading and we are keen on your feedback!

Your PreSens-Team

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Product News

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SFR vario v1

- Real-time measurement of O₂, pH and biomass through the wall of the cultivation vessel
- Automatic OUR calculation
- Used in media evaluation, bioprocess development & optimization
- Pre-calibrated cultivation vessels are ready-to-use
- Sampling-free and time saving
- Glass & plastic flasks in different sizes available
- Wireless data transfer enables easy integration

>> Read the brochure on the SFR vario v1.

>> Ask for your [SFR vario quote](#).

Biomass Measurement

Already Tested Microorganisms

The table below gives an overview of some microorganisms that have already been tested with the SFR vario. (Please note, that the upper dynamic range value is not the detection limit, it is just how far we ran the cultivations. So you might be able to measure values above this range. The lower dynamic range value represents the detection limit.)

All cultivations listed below were carried out in 500 mL shake flasks with baffles, at 20 % filling volume and a shaking diameter of 25 mm.

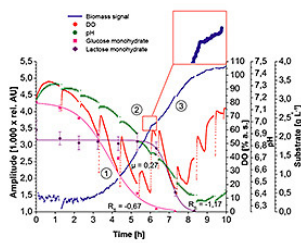
Species	Rep.*	Medium	Shaking Frequency [min ⁻¹]	Measured Dynamic Range cell dry weight [g L ⁻¹]**
<i>S. cerevisiae</i> NCYC1024	8	YPD	150	0.1 - 34
	8	YFPD	170	
<i>K. pastoris</i> DSM 70382	5	YPD	170	0.4 - 30
	4	HDGM	170	
<i>E. coli</i> K12	7	TB	150	0.2 - 12
	4	ZYP-31	170	
<i>C. glutamicum</i> DSM20163	4	M535 DSMZ	170	0.15 - 5
<i>L. zeae</i> DSM 20178	4	MRS	100 (NB)	0.3 - 10.7
<i>K. marxianus</i> DSM 5422	1	YM	150	0.4 - 5.1
<i>A. niger</i> D15 Xyn2	3	FM	150 (250 mL)	0.6 - 6.3
<i>B. megaterium</i> pMM1525	1	LB	150	0.4 - 3.7
<i>M. luteus</i>	4	LB	150	0.2 - 2.5

*used number of experiments

**partially achieved by concentration of isolated cells

Application Note

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New Device for Biomass Monitoring in Shake Flask Culture

Development of an analytical unit based on the SFR Shake Flask Reader

PreSens - together with its partners - developed a novel system for online biomass measurement in shake flasks based on near 360° scattered light detection. The optosensory components were combined with the established PreSens Shake Flask Reader technology, so biomass, pO₂ and pH can be monitored non-invasively through the flask bottom. First application of the prototype SFR vario on *Escherichia coli K12* and *Kluyveromyces marxianus* culture resulted in highly reproducible online biomass data, with relative errors matching those of standard offline OD measurements.

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smartLAB: Visit the intelligent lab of the future!
6 – 8 October 2015 • Hannover • Germany

Hall 9/
E67



LABVOLUTION 2015 - smartLAB

PreSens participates in the realization of the smartLAB presented at the LABVOLUTION 2015 Hanover

The new exhibition LABVOLUTION takes place at this year's Biotechnica in Hanover, and represents a new platform for the world of lab technology. From October 6th - 8th, 2015 PreSens is one out of 12 partners from science and industry presenting their vision of the future lab environment at the special exhibition smartLAB.

The smartLAB will give visitors a glance at the future of lab technology. The project has the aim to realize an intelligent, networked, and automated lab environment that will enhance not only work flows but also data analysis. PreSens participates with the integration of the new SFR vario.

>> [click here to read more ...](#)

Meet Us at One of Our Upcoming Exhibitions:

October 6th - 8th, 2015

Biotechnica & LABVOLUTION

Europe's No. 1 Event for Biotechnology, Life Science and Lab Technology

Hanover, Germany, Deutsche Messe Hannover, Hall 9, Booth E77

Lecture:

"Measurement of oxygen, pH and biomass through the wall of plastic and glass vessels"

Dr. Gernot T. John

Date & Time:

- Tuesday, October 6th, 2015, 11:20 a.m. (CET)
- Thursday, October 8th, 2015, 11:00 a.m. (CET)

You are interested in visiting our booth at the **Biotechnica & LABVOLUTION** but you do not have a day-ticket yet? In this case, you are very welcome to get in touch with us. We will be happy to arrange an appointment with you and send you a **day-ticket for free**.

October 8th - 10th, 2015

bone-tec 2015

International Bone-Tissue-Engineering Congress

Stuttgart, Germany, Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB

PreSens on YouTube

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Watch on YouTube:

You missed our last webinar on

"Metabolic Activity Inside Microfluidics - Oxygen Measured & Visualized with VisiSens A1"?

We uploaded a video of the [webinar](#) and you are most welcome to watch it at any given time. In addition, you will find a lot more of our product presentations on YouTube.

You would like to learn even more about PreSens Precision Sensing? Please visit our homepage www.presens.de and don't hesitate to contact us. Any feedback will be appreciated.

With kind regards

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