Advantages of the MFB

- Unfiltered raw water can be used, no addition of artificial food
- Endobenthic and soil species can be used, as the recording principle works in **soil** and **sediment**, too.
- High ecological relevance, e.g. 3 different indicator species used simultaneously in high numbers of replication
- Different behaviours (e.g. ventilation, locomotion) with different times and thresholds of response to chemical stress.
- Separate alarms for each type of behaviour and test species allow for an environmentally relevant alarm gradient.
- Four mathematical alarm algorithms calculate safe alarms.
- Email alert in alarm case to your home-PC.
- Flexible, handy, mobile system for all aquatic/ terrestric species
- Wide field of applications in waste water purification plants, drinking water works, water authorities and industries.
- The MFB has the most scientific backup (ca. 25 articles)

The MFB® replaces the use of several existing single-species biomonitors:

- effectively
- sensitively
- and cheaply

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The MFB® has already been applied in the following countries in Europe:

Netherlands, Germany, United Kingdom, France, Portugal, Poland, Belgium, Sweden

Also worldwide:

in Bolivia, China, South-Africa

EQUIPMENT

- The Multispecies Freshwater Biomonitor® (MFB) is available in different sizes, depending on the number of measurement channels: MFB-8, MFB-16, MFB-24, MFB-32 up to MFB-96. Each measurement channel is connected to one sensor.
- Sensors can be built in different sizes for different test species.
- We configure the MFB® according to your specific needs.
- We offer installation and training on site.
- On demand we offer also: Laptop, mobile energy supply solutions

More information and contact:

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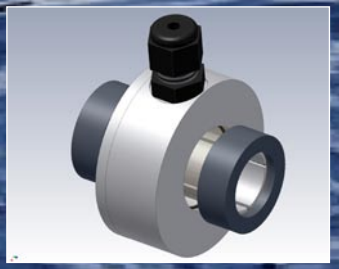
REAL-TIME monitoring of the quality

Multispecies Freshwater Biomonitor® MFB



Water, soil and sediment with only one monitoring unit!

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Multispecies Freshwater Biomonitor® (MFB)

The MFB is a modern„all-in-one" Biological Early Warning System (BEWS)/alert system for automated continuous, real-time monitoring of the quality of **water** (freshwater, marine), **soil and sediment**.

Components

The MFB consists of an automated measuring unit, the sensor test chambers for the test organisms and the software-application for windows.

Measuring unit (e.g. 8 channels) and sensor test chamber, different sizes

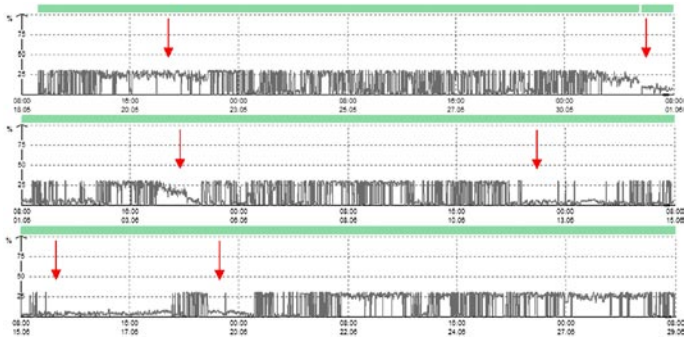
Measurement principle

Basic recording principle: Quadropole impedance conversion in a flow-through test chamber of different sizes, forms and arrangements in rows (horizontal, vertical)

Recorded signals:

Stress behaviour and death: Typical behavioural patterns can be distinguished, e.g. locomotion and ventilation for many animals:

WATER / SEDIMENT SOIL AIR



Monitoring with *G. pulex:*
Arrows: warnings correlate with chemical irregularities (EU-SWIFT, 2006)

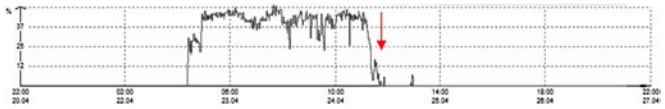
Applications

- Monitoring of rivers and small streams in remote areas of point pollution sources according to European laws (WFD, polluter pay principle, etc.): spills, floods, terrorism
- Whole-Effluent monitoring and toxicity testing **WET**
- Monitoring of purification steps in WWTPs
- Harbour control
- Remediation control
- Rapid Toxicity Testing of chemicals (Screening) **REACH**
- Eco/toxicological and ecological research
- (Neuro)Behavioural studies in laboratory and mesocosms e.g. diurnal rythms, vertical migration, etc.

Federal Environment Agency, Germany:
MFB in mesocosms with different test chambers

in situ:
cages with chambers, battery-operated MFB and laptop

Monitoring with *G. pulex:* Alarm situation



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- downlowd full list of bibliographical references on www.limco-int.com

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