



Innovative and modular control centre for the efficient operation of biogas plants.



Environment. Nature. Responsibility. **KÖHL**

Demand for biogas is constantly growing. Biogas consists mainly of methane and is produced in a process involving bacteria that decompose organic materials in the absence of oxygen. Biogas plants are used to produce biogas from biomass within a few weeks with the help of micro-organisms.

All in all, biogas is clean business. Its combustion releases only as much CO₂ as was consumed during the growth of the raw materials, and even the “waste” of the plant matter can be re-used as valuable fertiliser. In contrast to other renewable energy sources, such as wind and solar power, biogas plants can be run continuously, making a significant contribution toward covering the base load of our energy demand.



Compact high-tech centre for the systematic operation of biogas plants

With decades of experience in wind, water, solar and geothermal energy, KÖHL is your expert for renewable energy. Relying on its technological know-how, KÖHL has designed a system solution for the operation of biogas plants that exceeds by far the typical market requirements. Thanks to its modular construction, the compact high-tech centre takes up very little space and is guaranteed to be highly adaptive to fit the most different biogas plant concepts.

The standard 40' container includes all the important functions, which moreover satisfy with their easy handling.

Thus biogas plant operators are now provided with innovative technology to control biogas plants safely, efficiently and intelligently.

Modular design. Efficient. Integration-friendly.

Modular design

The modular design with standardised and trusted components makes for a prompt start up of the installation. The modules are adapted individually according to project requirements. Transport of the standardised container is easy thanks to its compact build.

Flexible, redundant substrate distribution

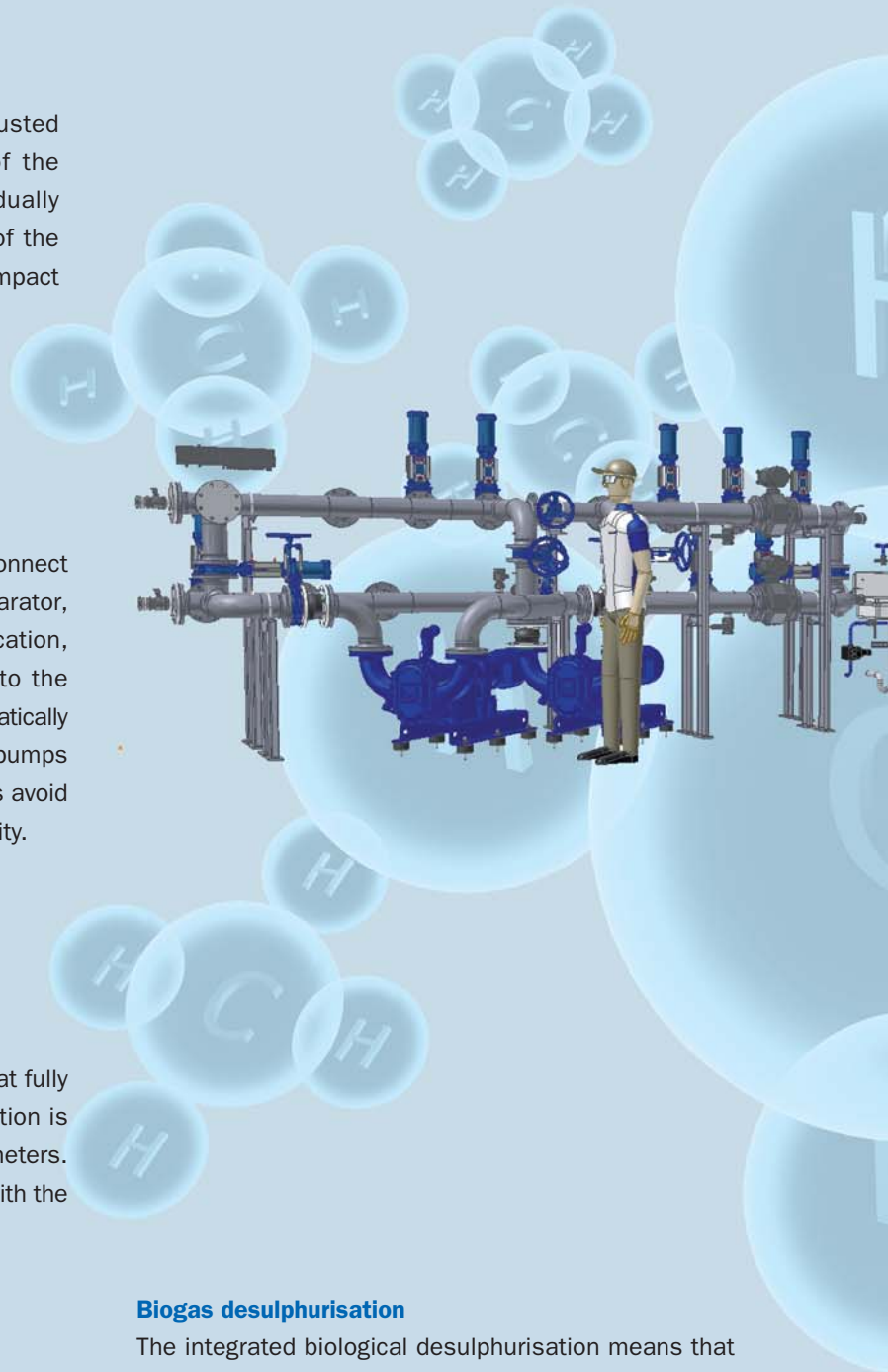
The redundant substrate distribution allows to connect all relevant containers (fermenter, storage, separator, process water container, etc.) in one central location, complete with feed and return lines. Thanks to the redundancy, the operation can continue fully automatically during service works or pump downtimes. The pumps are actuated by a frequency converter. This helps avoid premature wear and ensures operational reliability.

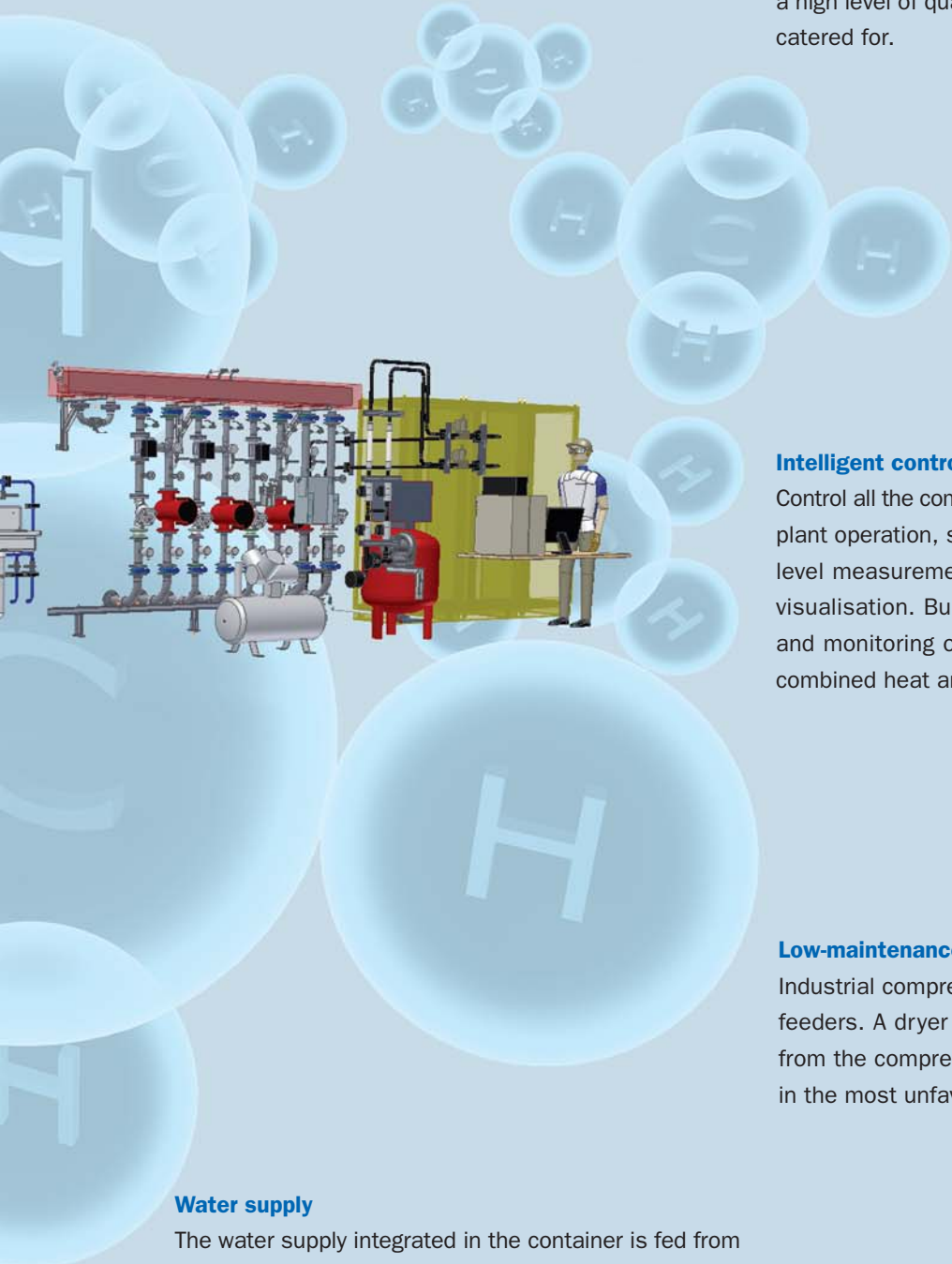
Integrated heat distribution

The heat distribution conducts the generated heat fully automatically to all consumers. The heat utilisation is documented by temperature sensors and heat meters. This documentation can be used for accounting with the public utility.

Biogas desulphurisation

The integrated biological desulphurisation means that air is blown safely into the gas tank. Provided the dosage is correct and the area to populate for the bacteria is sufficient, this is the most fully developed desulphurisation technique for biogas plants with combined heat and power stations.





Digital plant design

All projects are designed digitally in 3D and tailored individually to the client's requirements. This ensures a high level of quality. Special requirements can also be catered for.

Intelligent control of the biogas plant

Control all the components required for the overall biogas plant operation, such as agitators, temperature and fill level measurements, via the most advanced PLC and visualisation. Bus interfaces allow for the connection and monitoring of further plant components, such as combined heat and power stations, drying plants, etc.

Low-maintenance compressed air technology

Industrial compressed-air technology drives valves and feeders. A dryer prepares the compressed air coming from the compressor so that it is perfect for use even in the most unfavourable climatic conditions.

Water supply

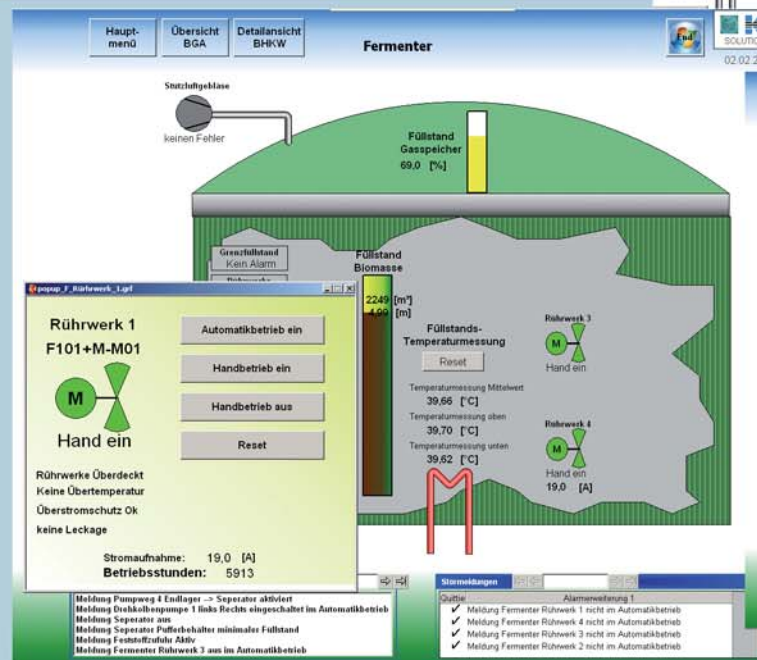
The water supply integrated in the container is fed from the existing water network. As an alternative for rural locations, a well pump with pressure increase can also be used to prepare the water.

Intelligent control. Secure data. Documentation.



The basic control package

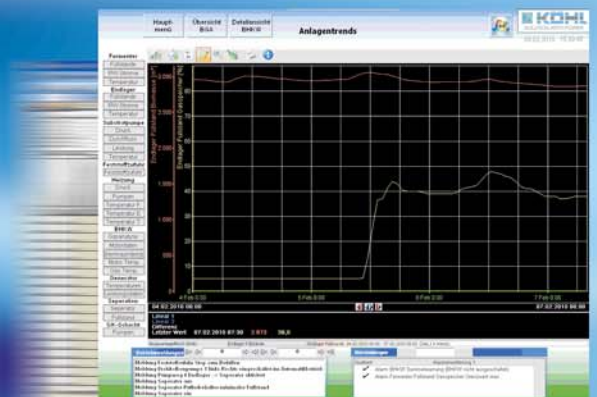
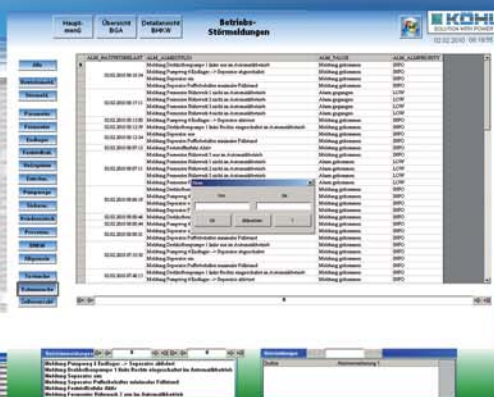
The PLC and visualisation control all plant parts fully automatically according to the operator settings. Furthermore, it is also possible to control all aggregates individually and manually. The user interface of the visualisation is very intuitive to use.

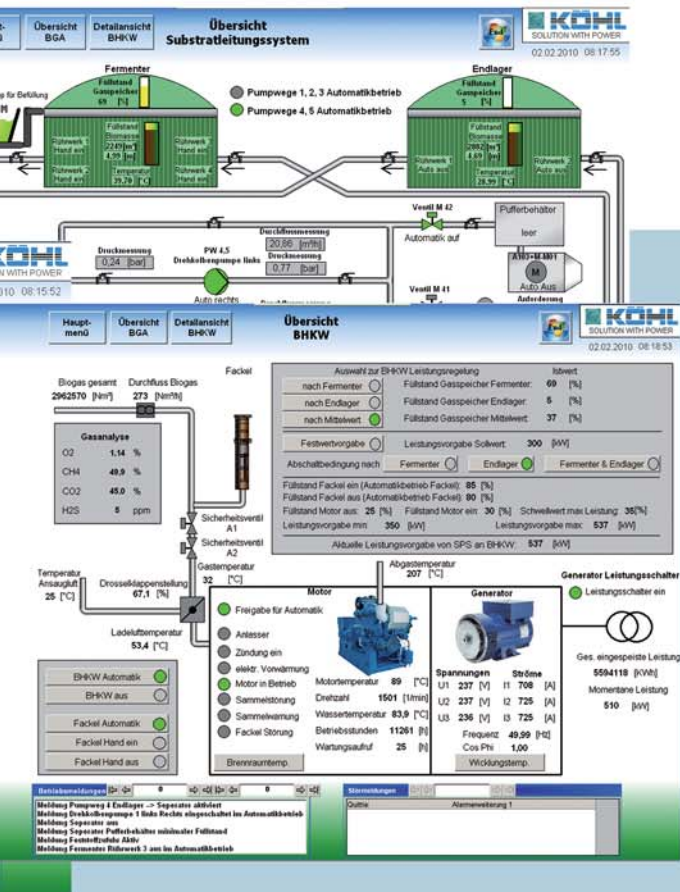


Bio-Diagnostic saves the data of all operating and alarm messages, as well as user entries, for swift error analysis. Furthermore this function allows to analyse the database according to the frequency of errors. This reduces plant downtimes and makes for higher operational availability.



Bio-Report is used for data recording and visualisation of all relevant process parameters, as well as measured values, and forms the basis for reporting without gaps. The software is pre-configured by us according to the client's needs. Daily, monthly and annual reports are generated automatically as PDF or Excel files.





BIO Alarm

Bio-Alarm provides the plant operator with help in the event of unforeseen disruptions. The communication channel – SMS or e-mail – can be selected freely. Out-of-office functions allow to alert several persons at once.



BIO Service

Bio-Service allows to plan and document service operations on site. The plant service manager receives automatic reminders of upcoming service works and checks. All important remarks of the operator are recorded in a digital operation log.

BIO World

Bio-World monitors several plants worldwide. It allows for the best possible coordination of service works, as well as of spare parts management and supply. Remote access enables the plant operator to control and operate the plant remotely via the Internet.



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Additional information