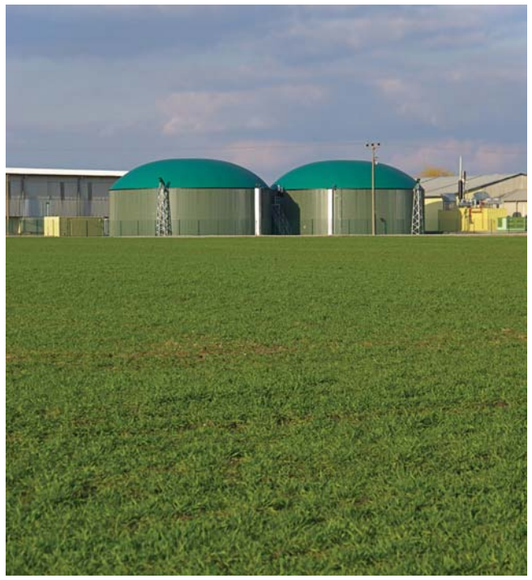
Fresenius
Umwelttechnik



Reference

Customer compendium from biogas / digester gas / landfill gas measurements

GFA Lüneburg	Composting	Lüneburg
Schwarting-Umwelt	Composting	Linkenbach
Stadt Vaihingen	Composting	Strudelbach
Stadt Erlangen	Composting	Erlangen
Schwarting Umwelt	Biogas	Deißlingen
RMB Biokompost GmbH	Biogas	Frankfurt
Bekkami	Biogas	Japan
Kitami	Biogas	Japan
Ecoparc de Barcelona	Biogas	Barcelona ES
Vauche BioWaste	Composting	F / PL
EWG AG	Biogas	Germany
Biffa	Biogas	Leicester UK
Diefenthal Biogas GmbH	Biogas	Diefenthal
Biowerk HH GmbH	Biogas	Hamburg
BioEn Nord GmbH	Biogas	Lüneburg
Biokraft GmbH & Co. KG	Biogas	Brensbach
Agrikomp GmbH	Biogas plant engineering	GER / F / UK
AAT GmbH	Biogas plant engineering	AT / IT / RU
Farmatic Anlagenbau GmbH	Biogas plant engineering	GER / DK / S
ORmatiC GmbH	Biogas plant engineering	GER / USA
Hermos System GmbH	Biogas plant engineering	GER / CA
BioConstruct GmbH	Biogas plant engineering	GER
Ibeus GmbH	Biogas plant engineering	GER
Biogaspark AlpeAdria GmbH	Biogas	Germany
Biogas Rheinland GmbH	Biogas	Essen
Stadwerke Pirmasens	Digester gas	Pirmasens
ABW Landkreis Alzey-Worms	Biogas	Alzey-Worms
BVR Bio-Verwertungs-GmbH	Biogas	Radeberg
Abwasser Zweckverband	Biogas	Eching Ammersee
Schönmackers Umweltd. GmbH	Biogas	Goch
Preussag-Noell	Biogas	Lüneburg
BioEnergie GmbH	Biogas	Herten
Reterra Service GmbH	Composting	Viersen
KDM GmbH	Composting	Düsseldorf
EVA GmbH	Composting	Erbenschwang
GeoTec	Composting	Lüneburg
Thyssen Still Otto	Composting	Kamp-Lintfort
Horstmann	Composting	Erftstadt
Kessler + Luch	Composting	Köln-Niehl
Stadtwerke Hildesheim	Digester gas	Hildesheim
Schraden Biogas GmbH	Biogas plant engineering	GER
Swedish Biogas AB	Biogas plant engineering	S
AWR BioEnergie GmbH	Biogas production	Borgstedt
AC Biogasanlagen GmbH	Biogas	Germany
Züblin	Biogas / Digester gas	Germany
SEBIGAS Spa	Biogas production	IT
Universität Essen	Biogas development	Germany NRW
Universität Hohenheim	Biogas development	Stuttgart
UNIECO	Composting	Reggio Emilia IT
AWM	Biogas	München
Gemes GmbH	Biogas	Saalfeld
Landgas Göhren	Biogas	Göhren
Naturgas Melzingen GmbH	Biogas	Melzingen
Deponie Schwerborn-Erfurt	Biogas	Erfurt
Abfallwirtschaft Rendsburg	Biogas	Borgstedt
AWV Vechta	Biogas	Vechta
Ekowep GmbH & Co. KG	Biogas	Ostrhauderfehn
Stadtverwaltung Erfurt	Digester gas	Erfurt
Stadt Erlangen (EBE)	Digester gas	Erlangen
PNE Pure Nature Energie GmbH	Biogas plant engineering	Germany
R&R Technik GmbH	Composting	GER / PL
AGR Abfalentsges. Ruhr mbH	Biogas	Herten

Competence

The complex gas analysis area within the biogas topic requires a ***comprehensive know-how***. Already before the outsourcing from the Fresenius group in 1992 the topics ***biogas, sewage gas and landfill gas*** were part of the ***daily business*** of Fresenius Umwelttechnik.

We could obtain our know-how within the last ***20 years*** by the cooperation in most varied projects of ***biological and chemical analysis*** (Institut Fresenius), the development of new ***biogas process- and systems engineering*** (IMK Anlage) or for example by attending diverse relevant ***research projects*** of different universities (Essen, Bochum, Hohenheim). .
Thus our ***products*** are the result of ***intensive research and development work*** on all application layers!
Our products are not only measuring instruments but application solving.

Please test our know-how and assure yourself of our capability!

Made in Germany

Fresenius Umwelttechnik GmbH
http//www.fresenius-ut.com

Telefon: +49 (0) 23 66 / 93 96 1-0
Telefax: +49 (0) 23 66 / 93 96 1-16

Doncaster-Platz 5
D - 45699 Herten

Fresenius
Umwelttechnik

Bio Basic

Biogas measurement technique ...
... simple, safe, profitable

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- to measure CH_4 and H_2S
- CO_2 & O_2 upgrade optional possible
- easy control via Touch panel
- faults / troubles via rext indicator
- flexible data communication
- up to 4 measuring points
- automatic fresh air purge
- high long-term stabilitys
- low service costs

Who we are

For immissions and emissions measurement technology, we are your competent partner for every project in the bio-gas analysis sector, based on ***15 years*** of ***biogas experience***!

Fresenius Umwelttechnik GmbH originated from the Fresenius Chemical Laboratory, which was founded by Carl Remigius Fresenius in 1848. Over more than ***150 years of the company's history***, Fresenius has developed into one of the leading business groups dealing with chemical, biological, and physics-analysis and a leading provider of consulting services.

Already in 1989, increasing demand in the area of the environment led to the development of new technical solutions in ***testing*** and ***on-the-spot gas measurement*** with regard to the environment and contamination**.**

Thanks to the increasingly complex demands of the market, the company's environmental department became its own freestanding business in ***1992*** called ***Fresenius Umwelt-technik GmbH***.

We are currently engaged process orientated in multitude areas of process measurement technology, environmental area or also personal security from the development via the production to the distribution of gas measurement systems for the immissions and emissions areas.

Advantages

Measurement of CH_4 and CO_2 via patented and long-run stable ***infrared measurement procedures***.
The measurement of O_2 and H_2S is effected with electrochemical sensors. An intelligent control provides here the longevity of the sensors.
Further the system includes an ***internal measuring data recording*** for the later analysis of the measuring data.
The BioBasic may be operated manually as well as automatically.

The individual adaptability of the interfaces allows for example an easy implementation of the ***measuring data to an external process control.***

Profitableness

In the entire consideration of price, operating and service costs as well as durability ***BioBasic*** is ***„guaranteed" lower priced than every other comparable product*** which is currently available on the market!

We are pleased to provide you with a non-binding offer.

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Technology

Display / handling:	in %, ppm via touch panel 128 x 64 Pixel, white / blue
Menu control:	via touch panel
Measurement output:	after 20 seconds **Measurement interval:** 15 - 999 minutes
Measuring precision:	approx. < 1,5 - 3 % from value as well as < 1 % from upper range value / long-term drift < 1 %
Electronic inputs:	4 digital inputs 24 V AC / DC
Electronic outputs:	2x digital (ok/fault), 4x digital (programmable), 4x analog (programmable & galvanic disconnected)
Interfaces:	RS 232 (standard); ProfibusDP, DeviceNet , CANopen; Industrial Ethernet (optional)
Pump capacity:	approx. 3,5 l min.
Pressure compatibility:	compensated, standard 0,7 to 1,1 bar
Energy consuntion:	230 V AC / 50 Hz, 0,9 A / 207 VA
Climatic requirements:	Ambient temperature 5° - 45° C / relative atmospheric humidity ~ 90 %, free of condensation
Housing:	Wall cabinet IP 55 400 x 400 x 220 mm
Tube connections:	8 mm off-site / 6 mm in-site
Gas conditioning:	Condensat trap incl. level guard, autom. drain optional; deflagration flame arrestor (ATEX)
Measuring points:	1 (standard) / update up to max. 4 measuring/sampling points optional possible
Measuring components:	CH_4 (IR) & H_2S (EC) (basic unit), update up to CO_2 (IR) and/or O_2 (EC) possible
Range:	CH_4 = 0-100 Vol % / H_2S = 0-2000 ppm / CO_2 = 0-65/-100 Vol % / O_2 = 0-25 Vol %
Cuvette:	heated to 60°C

Basic system

to measure CH_4 and H_2S composed of:
wall cabinet incl. menue control and controled housing fan,
one measuring point covered,
deflagration flame arrestor, fresh air purge, internal CH_4 monitoring,
internal gas pump, condensate trap incl. level guard,
machine interface, RS 232

Options

upgrades and accessories:
upgrade up to CO_2 , H_2, NH_3 and or O_2,
up to 4 measuring points expandable,
autom. calibration tool,
autom. condensate drain, gas cooler,
pre suction pump, different types of sampling points,
ProfibusDP, DeviceNet , CANopen; Industrial Ethernet