



## Anaerobic Digestion

### Accurate Gas Monitoring for Biogas Applications

The Biogas Check is the ideal field instrument for anaerobic digester gas analysis. Easy to use and portable, it measures gas composition with repeatable accuracy on farm digesters, food processing plants and waste water treatment facilities.

#### Benefits

- Enables consistent collection of data for improved analysis and accurate reporting
- Validates flow and gas composition for carbon credit trading
- Field proven technology
- Easy to use
- User configurable operation
- Helps check digester process is running efficiently

#### Features

- Measures % CH<sub>4</sub>, CO<sub>2</sub>, O<sub>2</sub>
- Measures differential and barometric pressures
- Optional Internal H<sub>2</sub>S (0-10,000ppm)
- Reads gas temperature with optional temperature probe
- Calculate balance gas and flow ( m<sup>3</sup>/hr)
- Optional anemometer
- ATEX certified
- New analysers calibrated to UKAS ISO17025
- Easy field calibration by user
- Stores and downloads readings
- User interchangeable filters



#### Applications

- Farm Digesters
- Food Processing
- Waste Water
- Methane Recovery

## Technical Specifications

BIOGAS CHECK				
POWER SUPPLY				
Battery type	Rechargeable Nickel Metal Hydride battery pack containing six 4AH cells (not user replaceable)			
Battery life	Typical use 10 hours from fully charged			
Battery lifetime	Up to 1000 charge/ discharge cycles			
Battery Charger	Seperate intelligent 2A battery charger powered from mains supply (100-240V 47-63 Hz)			
Charge time	Approximately 2 hours from complete discharge			
Alternative power	Can be powered externally for fixed in place applications. Contact Geotechnical Instruments (UK) Ltd for further information			
Memory backup battery	Lithium Manganese for data retention			
GAS RANGES				
Gases measured	CO <sub>2</sub> and CH <sub>4</sub>	By dual wavelength infrared cell with reference channel		
	O <sub>2</sub>	By internal electrochemical cell		
	H <sub>2</sub> S (optional)	By internal electrochemical cell		
Oxygen cell lifetime	Approximately 3 years in air			
H <sub>2</sub> S cell lifetime	Suitable for sampling applications - not for continuous use			
Range	CH <sub>4</sub>	0 - 70% to specification, 0 - 100% reading		
	CO <sub>2</sub>	0 - 60% to specification, 0 - 100% reading		
	O <sub>2</sub>	0 - 25%		
	H <sub>2</sub> S	0 - 10,000 ppm		
Typical accuracy	Gas	0 - 5% vol	5 - 15% vol	15% - FS
	CH <sub>4</sub>	± 0.5%	± 1.0%	± 3.0%
	CO <sub>2</sub>	± 0.5%	± 1.0%	± 3.0%
	O <sub>2</sub>	± 1.0%	± 1.0%	± 1.0%
	H <sub>2</sub> S	±100 ppm or ±5% of reading (if greater)		
Response time, T <sup>90</sup>	CH <sub>4</sub>	≤ 20 seconds		
	CO <sub>2</sub>	≤ 20 seconds		
	O <sub>2</sub>	≤ 20 seconds		
	H <sub>2</sub> S	≤ 60 seconds		
PUMP				
Flow	550 ml/min typically			
Flow fail point	-200mbar vacuum - user settable*			
Maximum vacuum restart	-375mbar approximately with flow rate of approx. 80ml/min			
ENVIRONMENTAL CONDITIONS				
Operating temperature range	0°C - 40°C			
Relative humidity	0 - 95% non condensing			
Case seal	IP65			
Barometric pressure	± 200 mbar from calibration pressure			
Barometric pressure accuracy	± 5 mbar typically			

## Technical Specifications

### BIOGAS CHECK, cont'd.

#### FACILITIES

Temperature measurement	With optional probe -10°C to +75°C
Temperature accuracy	± 1.0°C (± probe accuracy)
Visual and audible alarm	User selectable CO <sub>2</sub> , CH <sub>4</sub> , and O <sub>2</sub> alarm levels
Communications	RS232 protocol with variable baud rate
Relative pressure	± 500 mbar from calibration pressure
Relative pressure accuracy	• ± 4 mbar typically (should be zeroed before reading) • ± 15 mbar max
Static pressure measurement	± 500 mbar
Static pressure accuracy	± 4 mbar typically (should be zeroed before reading)
Differential pressure measurement	± 125 mbar
Differential pressure accuracy	± 0.5 mbar typically (should be zeroed before reading)
Available memory	250 complete readings

#### PHYSICAL

Weight	2 Kilograms
Size	L 63mm, W 190mm, D 252mm
Case material	ABS
Keys	Membrane panel
Display	• Liquid crystal display, 40 x 16 characters • Fibre optic woven back-light for low light conditions
Gas sample filters	User replaceable integral fibre filter at inlet port and an external PTFE water trap filter

#### CERTIFICATION RATING

ATEX	Certified to Ex ib d IIA T1 Gb (Ta = 0°C to +40°C)
ISO17025	Optional calibration to UKAS certificate number 4533

\* Gas Analyser Manager software required

#### Important Note

This specification is for Biogas Check units Serial Numbers 10000 and above marked with modification D. The information in this document is correct at time of generation, we do however, reserve the right to change the specification without prior notice as a result of continuing development.