

BIOGAS 3000



FIXED BIOGAS AND LANDFILL GAS ANALYSER | ANAEROBIC DIGESTION

The ATEX and IECEx certified BIOGAS 3000 builds on field proven, robust gas analysis technology to offer cost effective online monitoring with local data outputs.



FEATURES

- CH₄ CO₂ & O₂ - standard measurements
- H₂S, H₂ and CO - choice of up to two optional measurements
- Modular design enabling hot-swap for serviceability and onsite maintenance
- User calibration function to maintain accuracy & ensure data reliability in extreme temperatures
- ATEX and IECEx certified for use in potentially explosive gas atmospheres - zone 2
- ISO / IEC 17025 calibration for optimal accuracy
- Ability to monitor the gas control process before and after desulphurisation
- Continuous monitoring option
- Up to 4 sample points to monitor the complete gas control process
- IP65 rated for weather proofing
- Built in liquid level monitoring with a dedicated alarm to inform the user that the contents of the catchpot requires emptying or an optional automated moisture removal drain
- Gas alarms & fault notifications
- 6 x 4-20mA outputs
- Modbus RTU communication
- Optional Profibus and Profinet communication
- Clear, visual and informative colour display
- Optional heater to extend operating temperature range to -20°C
- Extended Warranty & Service pack options through approved global service centres

SECTOR

- Biogas
- Landfill gas

APPLICATIONS

- Agricultural waste
- Biogas upgrading
- Landfill gas monitoring
- Farm waste AD (small scale)
- Gas flaring
- Mixed food waste AD
- Sewage/waste water treatment AD



BENEFITS

- Customisable to site requirements
- Zero operational downtime for servicing
- Product reliability and longevity
- Protect expensive capital equipment from damaging gases
- Maximise operational efficiency through optimising the AD process
- Operational within hazardous areas
- Ease of operation, integration and installation
- Minimal through-life costs
- Local support for peace of mind

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TECHNICAL SPECIFICATIONS

GENERAL SPECIFICATION				
Number of sampling points	1-4			
Gases to be monitored	CH ₄ , CO ₂ and O ₂ with optional H ₂ S, H ₂ and CO (choice of up to 5)			
Reading intervals	User definable, with a continuous ¹ CH ₄ , CO ₂ and O ₂ option available			
Operating temperature range	0°C to +50°C without heater, -20°C to +50°C with heater			
POWER				
Mains options	110-230 VAC 50/60 Hz			
Consumption	155W max.			
Backup memory	Lithium manganese dioxide backup battery for memory retention			
GAS RANGES				
Gases measured	CH ₄ and CO ₂	By dual wavelength infrared cell with reference channel		
	O ₂	By internal electrochemical cell		
	H ₂ S / H ₂ / CO	By internal / external electrochemical cell		
	Cell	Range	Typical accuracy (range : accuracy)*	
			Internal accuracy	External accuracy
Standard gas cells	CH ₄	0-100%	0-70% : ±0.5% (vol)	70-100% : ±1.5% (vol)
	CO ₂	0-100%	0-60% : ±0.5% (vol)	60-100% : ±1.5% (vol)
	O ₂	0-25%	0-25% : ±1.0% (vol)	
Optional gas cells	H ₂ S	0-50ppm	±1.5% FS	±1.5% FS
	H ₂ S	0-200ppm	±2.0% FS	±1.5% FS
	H ₂ S	0-500ppm	±2.0% FS	±2.0% FS
	H ₂ S	0-1,000ppm	±2.0% FS	±2.0%
	H ₂ S	0-5,000ppm	±2.0% FS	±100ppm or 5% of reading (if greater)
	H ₂ S	0-10,000ppm	±5.0% FS	±200ppm or 5% of reading (if greater)
	CO	0-1,000ppm	±2.0% FS	±3.0% FS
	H ₂	0-1,000ppm	±2.5% FS	±1.5%
Response time, T90**	CH ₄	≤10 seconds	H ₂ S (0-50ppm)	≤30 seconds
	CO ₂	≤10 seconds	H ₂ S (0-200ppm)	≤35 seconds
	O ₂	≤20 seconds	H ₂ S (0-500ppm)	≤35 seconds
			H ₂ S (0-1,000ppm)	≤35 seconds
	H ₂	<90 seconds	H ₂ S (0-5,000ppm)	≤40 seconds
		H ₂ S (0-10,000ppm)	≤40 seconds	
Cell lifetime	O ₂ cell is 3 years in air, all other cells 2 years in air			

** Times are taken from the point gas enters the BIOGAS 3000 module. Sample times will vary depending on length of sample pipe

*Plus accuracy of calibration gas used

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TECHNICAL SPECIFICATIONS CONTINUED

PUMP	
Flow	300ml / min typically
Flow-fail point	Flow rate less than 75ml/min or vacuum greater than 350mbar
Maximum vacuum restart	-375 mbar
COMMUNICATIONS	
Output channels	Up to six analogue 4-20mA output channels that are user configurable for current sink or source inputs plus Modbus RTU digital output. Optional Profibus module Optional Profinet module
Alarm notifications	1 x fault relay 7 x user-configurable alarms that can trigger a relay when above or below a set value. In addition, one can be used to indicate to the operator when the catchpot is full and requires emptying.
Relay outputs	Single pole changeover 6A 24Vdc relay volt free
ENVIRONMENT CONDITIONS	
Operating pressures	-350 mbar to +350 mbar
IP rating	IP65
Humidity	0-95% non-condensing humidity
PHYSICAL	
Weight	36.5kg
Size	650 x 600 x 210mm (with supplied wall mounting brackets)
Enclosure	Stainless steel, 600 x 600 x 210mm, IP65 rated
Operation keys	Alpha-numeric keypad with 'tactile' membrane
Display	Ultra-clear high resolution 4.3" full colour TFT
Moisture removal filters	User replaceable microfibre filter and 2.0µm ptfе water traps
Heater option	Optional 100W mains powered ATEX certified heater for 110V or 230V mains supply
CERTIFICATION RATING	
ISO17025	Calibrated under UKAS accreditation (certificate number 4533)
ATEX / IECEx marking	II 3G Ex nA nC IIA T1 Gc (-20°C ≤ Ta ≤ +50°C)
BS EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use
BS EN 50270:2006	Electromagnetic compatibility- electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen

¹ Continuous option will include a minimum 3 minute daily air purge



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