

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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BIOGAS 3000

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)* | |
| 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) | |
| | Cell | Range | Typical accuracy (range : accuracy)* | |
| Optional gas cells | | | Internal accuracy | External accuracy |
| | 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% FS |
| | 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% FS |
| | | | Range | Response time |
| 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 |
| | CO | <30 seconds | H ₂ S (0-10,000ppm) | ≤40 seconds |
| ** Times are taken from the point gas enters the BIOGAS 3000 module. Sample times will vary depending on length of sample pipe | | | | |
| Cell lifetime | O ₂ cell is 3 years in air, all other cells 2 years in air | | | |

*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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