

GAS EXTRACTION MONITOR | GAS EXTRACTION SITES

The GEM5000 landfill gas extraction monitor for measuring CH_4 , CO_2 and O_2 . It's an easy to use analyser designed to aid balancing the gas field, maximise power output and ultimately maximise revenue from CH_4 extraction.



SECTOR

🌚 Landfill

APPLICATIONS

- Landfill gas field optimisation
- Landfill gas energy calculation
- Flare / engine output estimation







FEATURES

- Certified: ATEX, IECEx, CSA, MCERTS and UKAS calibration (ISO17025)
- Measures % CH₄, CO₂, O₂
- Records static and differential pressure
- Choice of user settings and simple gas reading function
- Calculates gas flow (m3 / h) and calorific value (KW or BTU) (external flow device and Gas Analyser Manager software required)
- CH_4 and CO_2 accuracy $\pm 0.5\%$ after calibration
- Modular and upgradeable
- 3 year warranty
- Robust design for market leading reliability
- Datalogging and profiling function
- Up to 6 gases monitored

BENEFITS

- Aids balancing of gas field
- Real time adjustments can be made
- Maximise power output from site
- Easy to read
- No need for self-certification of anemometer
- Maximise revenue from CH₄

OPTIONS (AVAILABLE AT PURCHASE OR LATER)

- H₂ compensated CO
- Choice of additional gases including H₂S to 10,000ppm
- GPS / field navigator

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- Gas Analyser Manager software for data download
- External gas flow devices: anemometer (ATEX) / Pitot tubes
- Bluetooth communications
 for data download

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TECHNICAL SPECIFICATIONS

POWER SUPPLY					
Battery type	Rechargeable nickel me	Rechargeable nickel metal hydride battery pack (not user replaceable)			
Battery life	Typical use 8 hours from fully charged				
Battery charger	Separate intelligent 3A battery charger powered from mains supply (100-240V)				
Charge time	Approximately 4 hours f	Approximately 4 hours from complete discharge			
GAS RANGES					
Gases measured	CO_2 and CH_4	By dual wavelength infrared sensor with reference channel			
	02	By internal electrochemical sensor			
	CO (H_2 compensated), H_2 S, NH ₃ and H_2 (optional)	By internal electrochemical sensor			
	A full range of internal gas cells can be specified at the time of manufacture				
Standard gas cells	Cell	Range	Typical accuracy* (range : accuracy)	Typical accuracy* (range : accuracy)	
	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)	
	0 ₂	0-25%	0-25% : ±1.0% (vol)		
Optional gas cells	Cell	Range	Typical accuracy*	Typical accuracy*	
	СО	0-500ppm	±2.0% FS	±2.0% FS	
	СО	0-1,000ppm	±2.0% FS	±2.0% FS	
	СО	0-2,000ppm	±2.0% FS	±2.0% FS	
	CO (H ₂)**	0-2,000ppm	±1.0% FS	±1.0% FS	
	H ₂ S	0-50ppm	±1.5% FS	±1.5% FS	
	H ₂ S	0-200ppm	±2.0% FS	±2.0% 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	±2.0% FS	
	H ₂ S	0-10,000ppm	±5.0% FS	±5.0% FS	
	NH ₃	0-1,000ppm	±10.0% FS	±10.0% FS	
	H ₂	0-1,000ppm	±2.5% FS		
*Typical accuracies	All typical accuracies qu	ioted are after calibrati	on plus accuracy of calibratior	i gas used.	
**Hydrogen compensated carbon monoxide	Hydrogen cross gas effect on carbon monoxide approximately 1%. Do not use where hydrogen is in excess of 10,000ppm				
Response time, T90	Range Response time				
	CH ₄	≤10 seconds			
	CO ₂	≤10 seconds			
	0 ₂	≤20 seconds			
	СО	≤30 seconds			
	H ₂ S	≤30 seconds			
	NH ₃	≤90 seconds			
	H ₂	≤90 seconds			
PUMP					
Flow	550 ml / min typically				
Flow fail point	-200 mbar vacuum- user settable				
Maximum vacuum restart	-375 mbar approximately with flow rate of approx 80ml / min				

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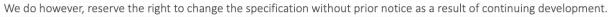
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TECHNICAL SPECIFICATIONS CONTINUED

FACILITIES		
Temperature measurement	-10°C to +75°C with optional probe	
Temperature accuracy	±0.5°C with optional probe	
Flow measurement	Via Pitot tube, orifice plate, or anemometer	
Energy measurement	Calculated using gas concentrations, flow, and temperature readings	
Alarm	User selectable alarms	
Communications	Via USB lead or wireless Bluetooth*	
Relative pressure measurement	±500 mbar	
Relative pressure accuracy	±4 mbar typically (should be zeroed before reading) to ±15 mbar max	
Barometric pressure measurement	500 to 1500 mbar, ±5 mbar accuracy	
GPS sensor	Location and positioning	
Available memory	2,000 IDs *, 4000 readings, 2,000 events *	
ENVIRONMENTAL CONDIT	IONS	
Operating temperature range	-10°C to +50°C	
Atmospheric pressure range	700 to 1200 mbar	
Relative humidity	0-95% non condensing	
Case seal	IP65	
PHYSICAL		
Weight	1.6kg	
Size	L 220mm, W 155mm, D 60mm	
Case material	High impact ABS composite with rubber over-moulding.	
Keys	Alpha-numeric keypad with "tactile" membrane	
Display	Ultra-clear high resolution 4.3" full colour TFT	
Connections	Colour coded gas inlet, outlet and pressure ports. Waterproof USB port, anemometer and charger / temperature probe connections.	
Gas sample filters	External user changeable 2.0µm ptfe water traps	
CERTIFICATION RATING		
ATEX / IECEx	II 2G Ex ib IIA T1 Gb (Ta =-10°C to +50°C)	
MCERTS	MC / 130239	
ISO17025	Calibration to UKAS certificate number 4533	
CSA	Ex ib IIA T1 (Ta=-10°C to +50°C) (Canada), AEx ib IIA T1 (Ta=-10°C to +50°C) (USA)	
* Gas Analyser Manager software	required. Bluetooth is an optional extra.	
	in this document is correct at the time of generation.	





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