



Gas extraction sites

Applications

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

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

Features

- Certified: ATEX, IECEx, MCERTS (applied for), CSA and UKAS calibration (ISO17025)
- Measures % CH4, CO2, O2
- Peak (CH4 and CO2) and minimum (O2) gases recorded
- Records static and differential pressure
- Calculates gas flow (m³/h) and calorific value (KW or BTU) (external flow device and Gas Analyser Manager software required)
- CH4 and CO2 accuracy $\pm 0.5\%$ after calibration
- Modular and upgradeable
- 3 year warranty

Options (available at purchase or later)

- H2 compensated CO
- Choice of additional gases including H2S to 10,000ppm
- GPS
- Gas Analyser Manager software for data download
- External gas flow devices: anemometer (ATEX) / Pitot tubes



Technical specifications

GEM5000

POWER SUPPLY

Battery type	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 3 hours from complete discharge

GAS RANGES

Gases measured	CO ₂ and CH ₄	By dual wavelength infrared sensor with reference channel	
	O ₂ , CO (hydrogen compensated), H ₂ S, NH ₃ and H ₂	By internal electrochemical sensor	
A full range of internal gas cells can be specified at the time of manufacture.			
Range	CH ₄	0-100%	
	CO ₂	0-100%	
	O ₂	0-25%	
	CO	0-2000ppm	
	H ₂ S	0-500ppm, 0-5000ppm or 0-10,000ppm	
Typical accuracy after calibration	CH ₄	0-70%	±0.5% (vol)
	CO ₂	0-60%	±0.5% (vol)
	O ₂	0-25%	±1.0% (vol)
	CO	0-500ppm	± 2.0% FS
	CO/H ₂	0-2000ppm	± 1.0% FS
Response time, T90	CH ₄	≤10 seconds	
	CO ₂	≤10 seconds	
	O ₂	≤30 seconds	
CO measurement	CO	≤30 seconds	
	H ₂ S	≤30 seconds	
	Compensated for interference from hydrogen up to 2,000ppm hydrogen. Cross sensitivity approximately 1%		

PUMP

Flow	550 ml/min typically
Flow fail point	-200 mbar vacuum - user settable
Maximum vacuum restart	-375 mbar approximately with flow rate of approximately 80ml/ min

Technical specifications

GEM5000 cont'd.

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 and flow readings
Visual and audible alarm	User selectable alarms
Communications	Via USB lead or wireless Bluetooth *
Relative pressure	±500 mbar from calibration pressure
Relative pressure accuracy	±4 mbar typically (should be zeroed before reading) to ±15 mbar max
GPS sensor	Location and positioning
Available Memory	10,000 IDs*, 10,000 readings, 10,000 events*

ENVIRONMENT CONDITIONS

Operating temperature range	-10°C to +50°C
Relative humidity	0-95% non condensing
Case seal	IP65
Barometric pressure	±500 mbar from calibration pressure, ±5 mbar accuracy

PHYSICAL

Weight	1.5 kilograms
Size	L 220mm, W 155mm, D 60mm
Case material	ABS/ polypropylene with rubber over-moulding
Keys	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 ptfе water traps

CERTIFICATION RATING

ATEX	II 2G Ex ib d IIA T1 Gb (Ta = -10°C to +50°C)
MCERTS	Applied for
ISO17025	Optional calibration to UKAS certificate number 4533

* Gas Analyser Manager software required

Important Note: The information in this document is correct at the time of generation. We do, however, reserve the right to change the specification without prior notice as a result of continuing development.

