

SWG 100 Biogas

Fixed gas analyser



Fixed Gas Analyser for continuous monitoring of O₂, CH₄, CO₂, H₂S within biogas applications

The SWG 100 BIOGAS is a purpose made fix gas monitor system, primarily designed for use in Large & medium scale AD plants and Biomethane upgrade.

This self contained and self installed gas analyser is designed and built for continuous monitoring and it is a vital tool for protecting CHP's engine from sudden gas level changes and to monitor and control the process.

Benefits and key features:

- Continuous monitoring system
- NO dilution of gas sample required
- Dual H₂S sensor in the same unit for low and high concentration
- Monitor pre- and post- H₂S treatment
- Integrated Peltier cooler and pump for automatic moisture removal
- Multiple 4-20 mA and alarm relay output (user configurable)
- "Plug and Play" pre calibrated sensors field user replaceable
- Zero service downtime
- Self installed, no training required
- Simple user calibration and service

Applications



Biogas (AD plants)



Waste food



Agriculture



CHP engine

Features

	Standard	Optional
Wall rack mounting, IP 54 aluminium cabinet	●	
Monitored ventilated cabinet, with display and system alarm, including flow restrictor orifice.	●	
Internal % LEL gas detector (alarm threshold on CH ₄)		●
Flow controlled Strong Sample gas pump with internal flow monitoring and alarm overcome pressure changes	●	
Auto-zero solenoid valve for Auto-Zero in air	●	
Automatic span calibration	●	
Universal Power Supply 90-240 Vac	●	
3.5" TFT color display with password protected menu	●	
RS 485 and Modbus communications	●	
CH ₄ % and CO ₂ % NDIR measurements	●	
O ₂ measurement with long life sensor	●	
High H ₂ S continuous measurement		●
Low H ₂ S measurement with cutoff valve and clean air purge pump for sensor protection		●
CO measurements with EC cell		●
H ₂ measurement with EC cell		●
H ₂ measurement cell (0-100%) using TCD sensor		●
Integrated Peltier Gas cooler with automatic moisture removal pump		●
Multi sampling point up to 10 sites		●
Multiple 4 x 4-20 mA output/inputs modules with 2 x "fail/safe" alarm relay		●
Profibus, Ethernet, Profinet communication		●
Web enabled remote access and data logging		●
External control of the analyser via 4 x relay contacts		●
Cabinet heater		●

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Specifications

Measurement components					
Gas	Range	Sensor Type	Accuracy*	Resolution	Method
CH4	0-10 %	NDIR	± 0,3 % Vol	0.01 %	Continuos
CH4	10-65 %	NDIR	± 0,5% Vol	0.01 %	Continuous
CH4	65-100 %	NDIR	± 1.5 % Vol	0.01%	Continuos
CO2	0-100 %	NDIR	± 0.3 % Vol	0.01%	Continuos
CO2	10-65 %	NDIR	± 0,5 % Vol	0.01 %	Continuos
CO2	65-100 %	NDIR	± 1.5 % Vol	0.01 %	Continuos
O2	0-25 %	EC	± 0,2% Vol	0.1%	Continuos
H2S low	0-50 ppm/250 ppm	EC	± 5 ppm	1 ppm	Continuos & Discontinuous
H2S medium	0-2000 ppm/4000 ppm	EC	± 5 ppm	1 ppm	Continuos & Discontinuous
H2S high	0-5000 ppm/10000 ppm	EC	± 50 ppm	1 ppm	Continuos
H2	0-1 %	EC	± 20 ppm	0.01%	Continuos
H2	0-100%	TCD	± 2%	0.01%	Continuos
CO (H2 comp)	0-10000 ppm	EC	± 20 ppm	1 ppm	Continuos
Barometric pressure	850 to 1150 mbar	Piezo	n/a	1 mbar	Continuos
Calculated vale	Calorific value: 0-50 MJ/m3; MJ/Kg				
General					
Sampling points	1-10				
Display	3.5" TFT color graphical display, back light, window protected				
Keyboard	Tactile keypad password protected menu				
Industrial Interfaces/alarms/communications/Data logging					
Analogue	Up to 40 x 4-20 mA output/input analogue channels (self powered), individually configurable for each gases, with hold last reading function and delay resume function (user selectable)				
Alarms	Up to 20 user configurable alarm which trig a relay output (free contact 24VDC/5A) on above/below condition				
System Alarm	1 system alarm				
Digital	Modbus RTU as standard, optional ethernet, profinet, profibus dp and web enabled remote access				
Data logging	Internal extensive data logging function with user define logging interval- Data export to SD card				
Event logging	System monitoring with extensive event logging of faulty conditions to SD card for trouble shooting				
Sample					
Gas inlet	Stainless steel gas fittings with 1/8" ID thread				
Cooler	Integrated Peltier cooler with continuos condensate draining pump				
Filter	Teflon particulate filter, Internal Viton hosing				
Flow	Monitored and regulated flow 40...60 l/h				
Pressure	Sample Inlet Pressure -100 mbar trough 300 mbar, auto regulated				
Safety					
Norms	Comply to EN650079-15 and RL 94/9/EG				
Case Sniffing	Optional Internal gas leak detector with alarm and gas supply shut off				
Flow	Stainless steel flow orifice flow restrictor				
Ventilation	Ventilated cabinet with monitored fan				
Physical					
Dimension/Weight	700 x 600 x 210 mm (H x W x D) wall mounting, 25 KG				
IP RATE	IP 54 Aluminium				
Notes	* Accuracy of the calibration gas not included. When calibrated with-in its recommended service interval				