



Emissions & calibration instruments

Fixed and portable gas analysers

for biogas, landfill, sewage and coal mine gas



SWG 100 BIOGAS

Fixed gas analyser for O₂, CO₂%, CH₄% and H₂S



RASI 700

Portable biogas analyser and emissions tester



RASI 800 MCERTS

Engine exhaust emissions analyser

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, designed for use in landfill gas site, biogas plants (AD plants), coal mine sites and water treatments plants.

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.

Benefits and Key features

- Suitable for installation in Zone 2 Areas (compliant to Ex II 3G Ex nA IIA T1 Gc)
- Continuous or discontinuous monitoring mode
- 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" sensors user replaceable
- Zero service downtime
- Self installed, no training required
- Simple user calibration and service



Applications



Biogas (AD plants)



Landfill gas



Sewage gas



CHP engine protection

Features

	Standard	Optional
Wall rack mounting, IP 54 suitable for installation in zone 2 areas (Ex II 3G Ex nA, IIA T1, Gc)	●	
Version suitable for installation in zone 2 areas (Ex II 3G Ex nA, IIA T1, Gc) with manufacturing certificate of compliance		●
Monitored ventilated cabinet, with display and system alarm, including flow restrictor orifice.	●	
Internal % LEL gas detector (alarm threshold on CH ₄)		●
Strong Sample gas pump with internal flow monitoring and alarm	●	
Auto-zero solenoid valve for Auto-Zero in air	●	
Automatic calibration using permanent attached Gas Cylinder		●
Universal Power Supply 90-240 Vac	●	
3.5" TFT color display with password protected menu	●	
Universal Power Supply 90-240 Vac	●	
RS 485 and Modbus communications	●	
CH ₄ % and CO ₂ % NDIR measurement		●
O ₂ measurement with long life sensor		●
High H ₂ S continuous measurement		●
Low H ₂ S measurement with protected EC cell using cutoff valve and clean air purge pump		●
CO measurements with EC cell		●
H ₂ measurement with EC cell		●
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 communication		●
External control of the analyser via 4 x relay contacts		●
Cabinet heater		●

SWG 100 Biogas

Fixed gas analyser

Specifications

Measurement components

Gas	Range	Type	Method
CH4	0-100 %	NDIR	Continuous
CO2	0-100 %	NDIR	Continuous
O2	0-25 %	Electrochemical	Continuous
H2S low	0-1000 ppm	Electrochemical	Dis-continuous
H2S high	0-10000 ppm	Electrochemical	Continuous
H2	0-1 %	Electrochemical	Continuous
Calculated Value	Calorific value: 0-50 MJ/m ³ ; MJ/Kg		
Number of sites	Up to 10 sites		
Display	3.5" TFT color display, back light		
Keyboard	Tactile keypad password protected menu		

Output communication

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	Multiple (2 x 10) alarm relay output free contact 24VDC/5A
Digital	RS485 Interface, Modbus and Optional Profibus

Sample preparation

Gas inlet	Stainless steel gas fittings with 1/8" ID thread
Cooler	Integrated Peltier cooler with continuous 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

Safety

Rating	II 3G Ex nA IIA T1 GC compliance for use in Zone 2 areas
Norms	Comply to EN650079-15 and RL 94/9/EG
	LEL (CH4) internal detector
	Continuously monitored cabinet ventilation fan
	Sample gas shut-off solenoid valve
	Stainless steel flow orifice flow restrictor

Physical

Dimension	600 x 600 x 210 mm (H x W x D) wall or rack mounting
Weight/protection	25 Kg, IP 54
Operating Temperature	+5 to 45 °C (-20 to 45 C with optional heater)
Installation	Suitable for Zone 2 (indoor or outdoor) areas
Heater	Cabinet heater 300 W
Mains/power	Universal 90-240 VAC/ 47...63 Hz, 90W

RASI 800 Engine Test KIT

MCERTS approved emissions analyser



MCERTS certified exhaust analyser for emissions testing on gas engines

The RASI 800 MCERTS Engine Test Kit is designed to provide accurate NOx readings on Gas engines employed in power generation.

It accurately measure O₂, CO, NO, NO₂, SO₂ and CO₂%(NDIR)

The RASI 800 MCERTS measure true NO_x (NO+NO₂) and display values in ppm or/and mg/m³ with automatic O₂ corrections.

Suited for long-term measurements

The advanced integrated gas preparation system (built-in cooler, condensate pump and fresh-air valve) allow for prolonged measurement cycles and provide highly accurate NO_x readings

MCERTS approved

The RASI 800 is MCERTS approved for Portable Emissions Monitoring Systems



Measurement menu Flue gas measurements Pressure measurement Diff. temp. measurement Last measured values Start zeroing Interval auto-zero	Selection meas.program Engine Emissions Flare Noxing Program 4 Test program	Engine Emissions, Nat gas O ₂ [%] 6.7 CO ₂ [%] 8.3 CO [mg/rel5%O ₂] 1700 NO _x [mg/rel5%O ₂] 567 Air ratio 1.47 NO [ppm] 212	Auto-measurement semi-continuously no Duration [hr:min] 24:00 Interval [min:sec] 0:10 Mean values no Required memory (%) 47.9 Available memory (%) 85.4
start storage extras	CO-Limit prog.name	overview	start export CSV

TASK oriented and easy to navigate menu.

Application-guided menu with instruments pre-setting ensures that the correct parameters are used.

All the exhaust measurements are displayed on the large 3.5" TFT colour display of the RCU unit.

Automatic data logging with up to 24 h engine test and direct export of measured data to SD card as CSV file.

Base unit features

	Standard	Optional
O ₂ , CO, NO, NO ₂ measurement cell	●	
SO ₂ and CO ₂ (NDIR)		●
Stack and air temperature, pressure, draught and differential	●	
Peltier cooler with peristaltic pump for moisture removal and condensate monitor alarms	●	
Internal gas flow sample monitoring	●	
Purge valve for CO protection	●	
Auto zero (programmable) valve for long term measurements	●	
Li-Ion rechargeable battery and charger	●	
Aluminium framed case	●	
Built-in fast infrared printer	●	

RCU features

	Standard	Optional
Control analyser functions	●	
3.5" TFT display	●	
Data storage for transfer to PC	●	
2 GB SD card	●	
Automatic data logging	●	
Inductive charging	●	
MINI USB port	●	
Li-ION battery (30 hrs operation)	●	
Gas velocity and mass flow calculation		●
True NO _x , emissions display with O ₂ reference value.	●	
Socket for environmental measurements sensors	●	

RASI 800 Engine Test KIT

MCERTS approved emissions analyser

Specifications

	Range	Resolution	Sensor Life (typical)	Sensor type
Oxygen (O2)	0-25 %	0.1%	2-3 years	Electrochemical
Carbon Monoxide (CO-H2)	0 to 1000 ppm	1 ppm	3-5 years	Electrochemical
Nitric Oxide (NO)	0-5000 ppm	1 ppm	3-5 years	Electrochemical
Nitric Oxide (NO2)	0-1000 ppm	1 ppm	3-5 years	Electrochemical
Sulfur Dioxide (SO2)	0-5000 ppm	1 ppm	3-5 years	Electrochemical
Carbon Dioxide (CO2%)	0-40%	0.01%	>7 years	NDIR
Exhaust Temperature	0-1200 C	0.1 C	n/a	T/C
Pressure, Back pressure, differential pressure	-300 to 300 mbar	0.01 mbar	n/a	Piezoresistive
O2 reference 0-21 %				
NOx and CO automatically displayed in mg/m3 and or ppm with 5 % O2 reference				
Air Ratio (lambda)				
Display Unit : 3.5" TFT colour display with zoom function				
Data logging: Manual or automatic with data export in CSV format to SD card				
Battery (base unit & RCU unit) : internal Li-Ion rechargeable battery				
Communications: Blue tooth and mini USB port				
Printer: IRDA fast infrared printer				
Probe: Special engine probe, 380 mm length with 2.7 mt Viton line with heat shield and heated head				
Case: Robust protective case and vinyl transport case				
Certification: MCERTS SIRA MC130233/01				

Some on-site application pictures



The wireless remote control unit is probably one of the most existing feature of the RASI 800 analyser.

It remotely controls all the functions of the analyser and display the measurements value on its large color display.

It promotes health and safety on site and reduce engine commissioning time.



The RASI 800 base unit shown measuring in the engine room while the operator comfortably adjust the engine parameters and test the emissions level by wearilessly reading the measured values on the RCU (wireless remote control unit).



The RASI 800 supplied ready to go with a special engine test probe, integrated protective case, and heat disk for probe protection.

RASI 700 Series

Combined biogas analyser and emissions tester



The combined analyser for service, commissioning Engineers and biogas plants operators

The RASI 700 combines a Biogas analyser and an emissions testers in one truly compact hand held unit.

Available in 4 different configuration, the RASI 700 is the ideal analyser for engine service engineers, engine commissioning engineers and Biogas plants operator

Key Features:

- Use as gas analyser for O2, CH4, CO2 and H2S
- Use as emission tester for O2, CO, NO, NO2 (NOx) readings from engine exhaust
- Specially designed engine probe
- Dedicated Task Menu
- Data logging and site management memory
- Bluetooth communication
- Measure pressure, differential pressure and "back pressure"

Measurement menu	Selection meas. program	Engine exhaust	Gas analyser
Gas measurements	Engine exhaust	O2 [rel] 6.8	O2 [%] 0.4
Pressure measurement	Gas analyser	CO [mg/rel5%O2] 1200	H2S [ppm] 123
Diff. temp. measurement	User definable	NOx [mg/rel5%O2] 525	CO2 [%] 34.37
Last measured values	User definable	T-gas [°C] 650.7	CH4 [%] 47.02
Start zeroing	Test program	Air ratio 1.43	
		CO2 [%] 11.7	
start storage extras	CO-Limit O2 ref prg.name	stop store >> keyboard	stop store >> keyboard

TASK oriented and easy to navigate menu.

Select your application. Up to 4 tasks can be configured with instruments pre-settings.

Use as engine emissions tester.

Use as biogas analyser.

KIT selection

	Rasi 700 BIO	Rasi 700 KIT-00	Rasi 700 KIT-01	Rasi 700 KIT-02
Use as gas analyser	•			•
Use as emissions tester		•	•	•
Measure O2, CO2%, CH4%, H2S from fuel gas	•			•
Measure O2, CO, NO, NO2 (NOx) from exhaust		•	•	•
Display value in mg/m3 and ppm with O2 ref value as prescribed by the EA		•	•	•
Provide Lamba value, exhaust temperature, exhaust pressure and other engine parameters		•	•	•
Measure differential pressure	•	•	•	•
Data logging, data management, site management	•	•	•	•
Internal Rechargeable battery and USB charger	•	•	•	•
Real Time data transfer via blue tooth link	•	•	•	•
IRDA infrared printer	Optional	•	•	•
Integrated Water Trap with filter	•	•	•	•
Supplied with 500 mm special engine probe, printer, carrying case		•	•	•

RASI 700 Series

Combined biogas analyser and emissions tester

Specifications

	Range	Resolution	Sensor life (typical)	Sensor type
Oxygen (O2)	0-25 %	0.1%	2 years	Electrochemical
Carbon Monoxide (CO-H2)	0 to 1000 ppm	1 ppm	3-5 years	Electrochemical
Nitric Oxide (NO)	0-5000 ppm	1 ppm	3-5 years	Electrochemical
Nitric Oxide (NO2)	0-1000 ppm	1 ppm	3-5 years	Electrochemical
Hydrogen Sulfide (H2S)	0-2500 ppm	1 ppm	3-5 years	Electrochemical
Methane (CH4)	0-100 %	0.01 %	>7 years	NDIR
Carbon Dioxide (CO2%)	0-100 %	0.01%	>7 years	NDIR
Exhaust Temperature	0-1200 C	0.1 C	n/a	T/C
Pressure, Back pressure, differential pressure	-300 to 300 mbar	0.01 mbar	n/a	Piezoresistive
O2 reference 0-21 %				
NOx and CO automatically displayed in mg/m3 and or ppm with 5 % O2 reference				
Air Ratio (lambda)				
Display: 3.5" TFT colour display				
Data logging: Manual or automatic with data export in CSV format to SD card				
Battery: internal Ni-MH rechargeable battery with USB charger				
Communications: Blue tooth and mini USB port				
Printer: IRDA fast infrared printer				
Probe: Special Engine Probe, 500 mm length with 2.7 mt Viton line with heat shield				
Case: Double wall case, with custom made closed foam for unit, probe and accessories				

Data transfer and data capture



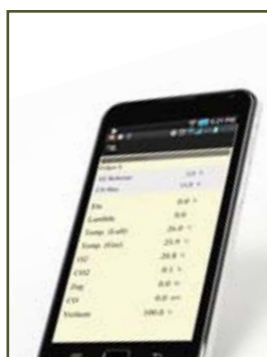
Printing

ON-site printing via fast IRDA printer. Print from live data or saved data. Print out includes sites details, date, calibration due date, and company details which you can fully customise.



Data to a PC

Blue Tooth link for real time remote data transfer to a lap top.



EiUK smart phone app

Real time measured values directly displayed on your mobile phone thanks to our newly developed "app"



"Data Capture"

Our new concept includes:

- Site Administration
- Data Administration
- Data Export on SD card
- Automatic data logging

Service and Support

We are proud of our level of services that we are providing to our customers. We can state with confidence that our service turnaround for portable emission testers is no longer than 2 days.

Service & Repair are 100% handle in our ISO 9001:2008 accredited lab in Daventry.

For fixed installation with offer various level of service contracts which are discussed on a case-by-case basis to match our customers expectations.

Related Product

Portable Gas Detector

We are an authorised service centre and distributor for BW Technology. We offer stock items and 1 day service turnaround

Test Equipment

EiUK is also a leader manufacturer:

- Temperature and Pressure Calibrators for engine maintenance
- Pressure sensors
- Hand held Pressure Indicator for gas measurements





Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.