

# SWG 100 compact BIOGAS

**BIOGAS ANALYZER** 



## MRU Instruments, Inc.

7902 Horseshoe Circle Humble, Texas 77396 Phone: (832) 230-0155 / Fax: (832) 230-1553 www.mru-instruments.com





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## **SWG 100** - BIO GAS ANALYZER compact

The gas analyzer SWG100-BIOcompact is dedicated for discontinuous sampling and measuring biogas mainly from:

- cogeneration heat and power engines (CHP)
- · CHP of municipal or industrial waste water treatment sites
- small scale AD plant with dry fermentation
- CHP of landfill gas cogeneration site



Due to technical improvements or changes, picture of analyzer might be changed without notice!

#### **Instrument main features are:**

- accurate measurements, incl. plug & play, pre-calibrated sensors, easy field replaceable
- sampling from low suction -100mbar up to high pressure +300mbar gas pipe
- no dilution of sample gas is required
- discontinuous measurement of up to 24 samples per day, with pressure and temperature compensation
- · flow restrictor orifice gas inlet for high pressure sampling, with sample gas cut-off in case of alarm
- optional use of internal combustible gas detector (%LEL CH4) for safety reasons
- optional second sampling point measurement
- industry compatible rugged design IP54, easy and fastest service design
- ready to run delivery, minimum installation work

## **BASIC ANALYZER CONFIGURATION**

- IP54 steel cabinet with anti-corrosive grey structural lacquer
- strong sample gas pump
- integrated condensate trap with condensate draining pump
- solenoid valve for auto-zero with clean ambient air and for manual calibration
- sample gas supply cut-off in case of system alarm, using "fail-safe" solenoid valve (normally closed)
- all stainless steel gas connectors 1/8"ID female threads, suitable for 6mm bulkhead compression fittings (also replaceable by user)
- stainless steel adapter 1/8" female 1/8" male, with flow restrictor orifice, to be mounted at sample gas inlet in case of high pressure sampling
- · human machine interface with color TFT display, keyboard and RS485 interface (Modbus RTU)
- all password protected, intuitive software guided menu, with diagnosis software
- universal power supply 90-240Vac / 47-63Hz / 42W



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SWG BIO compact		Page: <i>3 of</i>	3		Price list	valid till:	12/31/2	025
SWC 400 Biomes analyzes Bo				QTY	Doub No.	Date and a	Discount.	Tatal Briss
SWG 100 Biogas analyzer Ready to run after power up					Part No.	Unit price	Discount	Total Price
SWG 100 BIO compact with - IP54 steel cabinet with anti-corrosive grey structural lacquer					951010	\$8,007.00	0%	\$8,007.0
strong sample gas pump						0.0	11	
integrated condensate trap with condens	0				1			
solenoid valve for auto-zero with clean at								
sample gas supply cut-off in case of syste		enoid valve (normally clos	sed),					
all stainless steel gas connectors 1/8"ID for						****		
for 6mm bulkhead compression fittings (a	, , ,	•				0		
• stainless steel adapter 1/8" female - 1/8" male, with flow restrictor orifice,						1		
to be mounted at sample gas inlet in case of high pressure sampling  • human machine interface with color TFT display, keyboard and RS485 interface (Modbus RTU)						SWG 100 accumust	ESSA	
all password protected, intuitive software		s software			,			
• universal power supply 90-240Vac / 47-6	3Hz / 42W			l				
NDIR for biogas at AD plants, la				QTY	Part No.	Unit price	Discount	Total Price
NDIR for biogas at AD plants, landfill site	CH4 / CO2	0 - 100%	5 / 0 - 100%	1	65128	\$2,207.00	0%	\$2,207.0
SENSORS - electro chemical - a	nd sensor OPTIONS			QTY	Part No.	Unit price	Discount	Total Price
Sensor OPTION - O2	Long Life	0 - 25 %		1	65419	\$966.00	0%	\$966.0
Sensor OPTION - H2S (*2)	H2 immune	0 - 50 ppr	m overload 250 ppm (*1)	1	12260	\$1,049.00	0%	\$1,049.0
Sensor OPTION - H2S (*2)		0 - 2,000 ppr	m overload 4,000 ppm (*1)	1	10479	\$1,169.00	0%	\$1,169.0
Sensor OPTION - H2S (*2)	H2 immune	0 - 5,000 ppr	n overload 10,000 ppm (*1)	1	14584	\$1,251.00	0%	\$1,251.0
Sensor OPTION - H2		0 - 1,000 ppr	m overload 2,000 ppm (*1)	1	12513	\$1,721.00	0%	\$1,721.0
Sensor OPTION - H2		0 - 1% ppr	n overload 2% (*1)	1	12243	\$1,493.00	0%	\$1,493.0
(*1) NOTE: is maximum overload ran	nge, suitable only for short m	easuring time	(*2) NOTE: CH	IOOSE OI	NE H2S sensor	only!!		
OPTIONS & ACCESSORIES				QTY	Part No.	Unit price	Discount	Total Price
Second sampling point switching and mor	nitoring (time sharing)	Note: order maximum	2 additional ports	1	13911	\$596.00	0%	\$596.0
Cabinet heater, temperature regulated, fo	or freeze protection at low ar	mbient air temperatures	from -20°C to +5°C		1		ı	
Cabinet heater 230 Vac - 200 W - for use in safe area only					65771	\$683.00		\$683.0
Cabinet heater 115 Vac - 200 W - for use in safe area only					66009	\$683.00	0%	\$683.0
Teflon (PTFE) gas sampling line - 0.16"/0.24" 3.28' (DN4/6mm, 1m length)					50624-01	\$11.00	0%	\$11.0
Filtered condensate catch pot with automatic draining, (complete with fittings and canister)					11247A	\$858.00	0%	\$858.0
NOTE: for mounting at the sampling point of very wet digestor or wet / dirty biogas sampling (client scope)					1			
Aluminum Frame awning to protect SWG from harsh and direct weather elements such as sun, rain, hail, and snow.					59979	\$916.00	0%	\$916.0
H 12 in, W 48 in, D 42 in, Assembly Require	d, Hardware Included, Rust R	esistant, Water Resistant		ļ				
SAFETY				QTY	Part No.	Unit price	Discount	Total Price
Flame arrestor with 1/4"ID thread, to be r	mounted directly on biogas p	ipe at the sampling point	t or at sample gas inlet	1	65427	\$827.00	0%	\$827.0
(client scope)					-11		I.	,1
Gas detector (%LEL CH4) to monitor air in:	side analyzer cabinet			1	65435	\$755.00	0%	\$755.0
Calibration adapter for test and calibrate the gas detector 65435					12397	\$35.00	0%	\$35.0
SOFTWARE / COMMUNICATION				QTY	Part No.	Unit price	Discount	Total Price
I/O Module with 4chanel 4-20mA analog o	output and 2 alarm relays (fa	il-safe NO contacts)		1	65430	\$590.00	0%	\$590.0
incl. external control via 4x contacts and 4c					1	-	I	
Module with 4chanel 4-20mA analog outp		ontacts "fail safe")		1	65179	\$439.00	0%	\$439.0
Note: recommended is using one module f		•			+	1		-
RS485 to Profi-Bus converter				1	66029	\$1,061.00	0%	\$1,061.0
RS485 to Ethernet converter					66030	\$736.00	0%	\$736.0
RS485 to Profi-NET converter (2 or 3 connecting cable is users scope)					14122	\$2,362.00	0%	\$2,362.0
RS485 to USB converter					62543-A	\$306.00	0%	\$306.0
MRU4win - "full" version software, for real time data acquisition and handling on PC with Windows10					10539	\$298.00	0%	\$298.0
CONSTIMABLES				QTY	Doub No.	Half males	Discount	Total Dai
Consumable parts set for one year operation					Part No.	Unit price	Discount	Total Price
Consumable parts set for one year operat	ion			1	66114	\$352.00	0%	\$352.0



NOTE: set of all filters and required spare parts

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#### B. Payment Terms

MRU Instrumentsqpayment terms are net 30 days unless special written arrangements have been made. MRU Instruments, Inc. may, at any time, suspend performance of any order or require payment in cash, security or other adequate assurance satisfactory to MRU Instruments, Inc. when, in MRU Instrumentsoppinion, the financial condition of Buyer or other grounds for insecurity warrant such action. MRU Instruments, Inc. reserves the right to assess late charges on accounts due past 30 days at the rate of 18% per annum. All goods are shipped Ex Works and are the property of the Buyer upon shipment.

#### C. Cancellation/Termination

Upon written notice of cancellation or termination for the Buyer's convenience of standard catalog items, for standard product only, the Buyer is subject to a minimum 15% charge on the remaining balance and a charge reflecting a reversion to the quantity pricing of items actually delivered. In the event that the goods are special, non-standard or custom the Buyer may terminate this order in whole or in part for its convenience upon written notice to MRU Instruments, Inc. in which event MRU Instruments, Inc. shall be entitled to termination charges consisting of a percentage of the order price reflecting the percentage of the work performed prior to termination plus actual direct costs resulting from termination.

#### D. Remedies in the Event of Cancellation or Default

In the event the Buyer cancels this order, or becomes overdue on its account payable to MRU Instruments, Inc. by failing to pay for this order when due in accordance with the terms hereof, in addition to the charges assessed to the Buyer pursuant to Paragraphs B and C of this Agreement, the buyer shall be required to pay all costs of collection, including, whether suit be brought or not, attorney fees, court costs, collection expenses and other expenses which MRU Instruments, Inc. may incur or pay in the prosecution of defense of its rights hereunder whether in judicial proceedings at law or in equity, including bankruptcy court and appellate proceedings, or whether out of court. In addition, MRU Instruments, Inc. shall retain the right to terminate this Agreement and Buyer's right to use the Software (as term is defined below) upon any material breach of this Agreement by Buyer. Buyer agrees to return to MRU Instruments, Inc. or to destroy all copies of the Software upon termination of this Agreement.

#### E. Delivery

The promised delivery date is the best estimate possible, based upon current and anticipated manufacturing capabilities, of when the product will be shipped. MRU Instruments, Inc. assumes no liability for loss, damages or consequential damages due to delay.

In any event, MRU Instruments, Inc. shall not be in default for any failure to deliver Products to Buyer by the promised delivery date. In the event that MRU Instruments, Inc. so defaults, Buyer's sole remedy for such default shall be cancellation of the applicable order. MRU Instruments, Inc. shall have no other liability to Buyer as a consequence of any such default.

#### F. Force Majeure

Fulfillment of this order is contingent upon the availability of materials. MRU Instruments, Inc. shall not be liable for any delay in delivery or for non-delivery in whole or in part caused by the occurrence of any contingency beyond the control of either MRU Instruments, Inc. or suppliers to MRU Instruments, Inc. including but not limited to delay in transportation, labor disruption, earthquake, fire, acts of God, or any other act outside of MRU Instruments, Inc.'s reasonable control.

## G. Warranty

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Failure of the Buyer to object in writing to any merchandise shipped to it by MRU Instruments, Inc. within 30 days after receipt thereof will constitute complete acceptance by Buyer of such merchandise. Rejected material must be returned to MRU Instruments, Inc. within 45 days after receipt and with prior authorization from MRU Instruments, Inc. MRU Instruments, Inc. may (at its option) recondition or replace the rejected material to meet Buyer's specifications within a reasonable time period after receipt. Claims for shipping damage must be made with the carrier.

All products must be returned in the same packing conditions in which it left MRU Instruments, Inc.' manufacturing location(s) (anti-static rails and boxes, adequately protected, etc.). Buyer must pay return shipping.

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This Agreement will be governed by and construed in accordance with the laws of the State of Texas. Any suit hereunder will be brought solely in the federal or state courts of Harris County, Texas, and Buyer hereby submits to the personal jurisdiction thereof. This agreement, as amended by any posted notices, constitutes the entire terms and conditions on products offered for sale by MRU Instruments, Inc.

MRU Instruments, Inc. may amend this Agreement at any time by posting the amended terms on its web site. Except as stated below, all amended terms shall automatically be effective after they are posted on the web site. This Agreement may not be otherwise amended except in a writing signed by Buyer and MRU Instruments, Inc.

This agreement was last revised on January 30, 2007.

