



CO | CO<sub>2</sub> | CH<sub>4</sub> | O<sub>2</sub> | H<sub>2</sub>S | H<sub>2</sub>

## SWG 100 SYNGAS-Ex

The stationary system for continuous Syngas applications in Ex-zone 2, also for H<sub>2</sub> measurements up to 100%



 II 3G Ex db ec nC IICT3 Gc

# SWG 100 SYNGAS-Ex

## Stationary Analyzer for Syngas-Applications

**The MRU analyzer, SWG 100 Syngas-Ex has been developed for use in Ex zone 2, as well as for safe areas, e.g. laboratories.**

The analyzer can be installed in outdoor or indoor locations, it can sample dry or wet syngas, pressurized or low pressurized or low pressure gas and can be used from 6 sampling points.

### We offer you these special advantages

- Completely stainless steel piping
- Process gas recirculation
- IP 65 stainless steel housing
- High-precision infrared measurement technology for CO, CO<sub>2</sub>, CH<sub>4</sub>
- Thermal conductivity technology for H<sub>2</sub>
- Paramagnetic O<sub>2</sub> measurement
- Gas sampling in the pressure range from -100 mbar up to +200 mbar
- Integrated gas cooler with maintenance-free condensate drainage
- Measurement of up to 6 gas sampling points

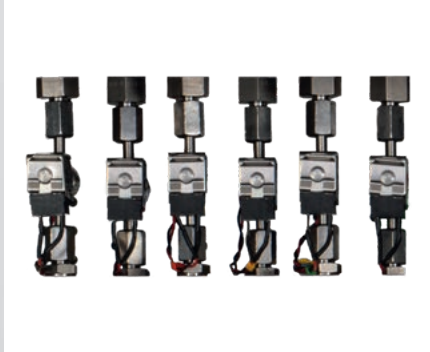
### Applications

- Biomass and waste gasification
- Coal gasification, coal liquefaction, synthetic fuel
- Pyrolysis applications and steam reforming
- Syngas analysis in laboratories and research



# The device in detail

## An overview of the special features



### Sample gas inlets

Up to 6 pieces – completely piped



### Sensor protection

Condensate-stop/-filter



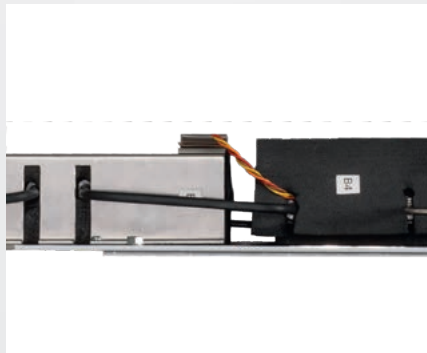
### Sample gas pump

and main filter, completely piped



### Device heating

For functional safety – even at low ambient temperatures



### Measuring modules

With NDIR for CO/CH<sub>4</sub>/CO<sub>2</sub> and TCD for H<sub>2</sub>



### Paramagnetic Sensor

for O<sub>2</sub>



### Solid piping

All sample gas ducts completely piped to provide „technical safety“.



### Flame arrestor

at sample gas inlet



### H<sub>2</sub>S

Elektrochemical sensor with H<sub>2</sub>-immunity

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## Technical Specifications

Measured components	Method	Range	Resolution	Accuracy
<b>Carbon monoxide CO</b>	NDIR	0 ... 100%	0,01 Vol.-%	0,2 Vol.-% or 2% of reading** or 0,1% of reading after calibration**
<b>Carbon dioxide CO<sub>2</sub></b>	NDIR	0 ... 100%	0,01 Vol.-%	0,2 Vol.-% or 1% of reading** or 0,1% of reading after calibration**
<b>Methane CH<sub>4</sub></b>	NDIR	0 ... 100%	0,01 Vol.-%	0,2 Vol.-% or 1% of reading** or 0,1% of reading after calibration**
<b>Oxygen O<sub>2</sub></b>	paramagnetic	0 ... 25%	0,01 Vol.-%	0,1% abs.
<b>Sulfur dioxide H<sub>2</sub>S</b>	EC, discontinuously	0 ... 2.000 /5.000 ppm*	1 ppm	± 10 ppm / 5% (0...500 ppm) 10% (>500 ppm)
<b>Hydrogen H<sub>2</sub></b>	TCD	0 ... 1,00 / 100,00%	0,01 % Vol.-%	± 0,5% or 2% of reading**

Calculated values	
<b>Nitrogen N<sub>2</sub></b>	Difference to 100%
<b>Calorific value</b>	0 ... 50 MJ/m <sup>3</sup> or MJ/kg
<b>HMI (human machine interface)</b>	3,5" TFT color display Keyboard, password protected operation 4x analog output 4–20 mA, floating, max. load 500 R 4x analog input 4–20 mA, passive inputs 2 alarm relays, potential free contacts 24 Vdc/5 A RS485 digital interface (Modbus RTU)
<b>System safety components</b>	<ul style="list-style-type: none"> <li>■ Multiply monitored cabinet atmosphere</li> <li>■ Stainless steel flow restrictor orifice</li> <li>■ Sample gas shut-down solenoid valve</li> <li>■ Power supply cut-off in case of system alarm</li> </ul>
<b>Sample conditioning</b>	<ul style="list-style-type: none"> <li>■ Stainless steel gas fittings with 1/8" ID threads</li> <li>■ Electric gas cooler (Peltier) with constant dew point +5° C</li> <li>■ Teflon particulate filter</li> <li>■ Syngas condensate pompe with ejektor</li> <li>■ Monitored and regulated sample gas flow 60 l/h sample gas</li> <li>■ inlet pressure: –100 mbar to +200 mbar</li> <li>■ Sample gas venting: atmospheric pressure</li> </ul>
<b>Cabinet dimensions</b>	700 x 600 x 210 mm (H x W x D) for wall or rack mounting
<b>Weight / Protection class</b>	65 kg / IP65, stainless steel
<b>Ambient temperature</b>	+5° C ... +45° C
<b>Cabinet conditioning</b>	heating 300 W
<b>Installation site</b>	Indoor or outdoor (with sun/rain protection cover, provided by customer)
<b>Power supply</b>	Universal 90 ... 240 Vac / 47 ... 63 Hz / 200 W (500 W with heating)

Technical data to change without notice | N-9513EN-SYNGAS-00-0823 | \*overload measuring range | \*\*the higher value applies | EC = Electrochemical sensor, NDIR = Non dispersive infrared spectroscopy

**MRU – Competence in gas analysis. Since 1984.**



### MRU · Messgeraete fuer Rauchgase und Umweltschutz GmbH

Fuchshalde 4 + 8 + 12  
74172 Neckarsulm-Obereisesheim  
Phone +49 7132 99620 · Fax +49 7132 996220  
info@mru.de · www.mru.eu

MRU representative: