



CO | CO₂ | CH₄ | O₂ | H₂S | H₂

SWG 100 Syngas

Syngas-Analyzer for
continuous measurements



SWG 100 Syngas

The stationary analyzer for continuous Syngas measurements

The MRU analyzer, SWG100 Syngas has been developed for use in save, industrial areas and 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 multiple sampling points.

We offer you these special advantages

- IP54 stainless steel cabinet, also for use in outdoor condition with sun and rain cover
- accurate measurements, using electrochemical, infrared and thermal conductivity technology
- sampling from low suction -100 mbar up to high pressure +200 mbar of gas pipe
- no dilution of sample gas is required
- integrated gas cooler with condensate draining pump
- direct and continuous measurement, with pressure and temperature compensation
- multiple sampling point monitoring (up to 8 sites monitoring) with one analyzer
- flow restrictor orifice gas inlet for high pressure site
- with sample gas cut-off and power supply shut-off in case of alarm
- industry compatible rugged design, easy and fastest service design
- ready to run delivery, minimum installation work

Applications

- biomass, coal and waste gasification plants
- cogeneration heat and power engines (CHP) using syngas
- small scale syngas analysis for research institutes and labs

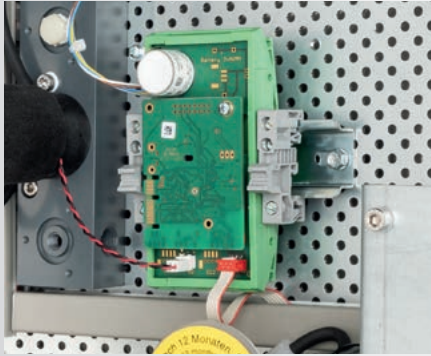
Options

- NDIR bench for CO-CO₂-CH₄ analysis (using selective CH₄ measurement)
- O₂ long life electrochemical or paramagnetic cell measurement
- H₂S electrochemical cell measurement, H₂ immune
- H₂ thermal conductivity detector measurement with cross interference correction
- RS485 to USB or Profibus or Ethernet converter
- I/O modules with 4 chanel 4-20 mA analog output and 2 alarm relays
- Sample gas washing device, for cleaning sample gas of tar
- Different lengths of heated and temperature regulated sampling lines



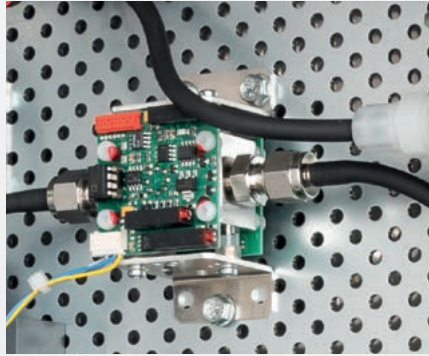
The device in detail

An overview of the special features



Gasdetector (% LEL CH₄)

for continuous monitoring of atmosphere in cabinet



H₂ Thermal conductivity detector

with cross interference correction



I/O-Module

with 4-channel 4...20 mA analog output and 2 alarm relays



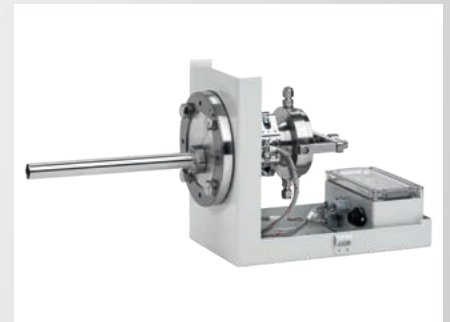
Flame arrester

placement at gas sampling point or at gas inlet of analyzer



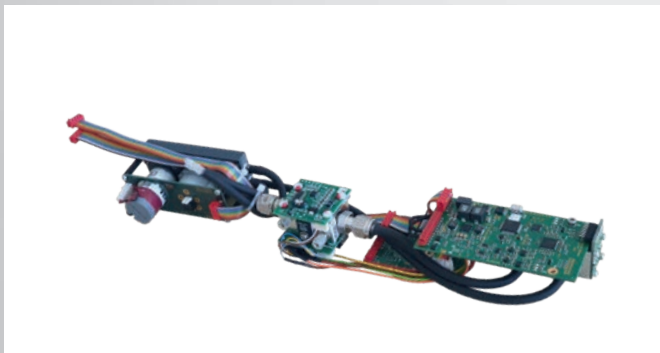
Sample gas washing device

for removing tar in sample gas by means of Diesel filled glass bottles, incl. integrated temperature regulation for heated sampling line



Gas sampling probe

for syngas with tar or acid mist and heavy hydrocarbons. With quartz wool filter, DN65 stainless steel flange and regulated heating



Sensormodule

High-quality, sophisticated sensor technology ensures permanently precise measurement results



Modbus/Ethernet LAN-Converter

SWG 100 Syngas

Technical Specifications

Measured components	Method	Range	Resolution	Accuracy
Carbon monoxide CO	NDIR	0 ... 100%	0,01 Vol.-%	0,3 Vol.-% or 2% reading** or 0,1% of reading after calibration**
Carbon dioxide CO ₂	NDIR	0 ... 100%	0,01 Vol.-%	0,3 Vol.-% or 2% reading** or 0,1% of reading after calibration**
Methane CH ₄	NDIR	0 ... 100%	0,01 Vol.-%	0,3 Vol.-% or 2% reading** or 0,1% of reading after calibration**
Oxygen O ₂	EC, continuously	0 ... 25%	0,01 Vol.-%	0,2% absolute
Oxygen O ₂	paramagnetic	0 ... 25%	0,01 Vol.-%	0,1% absolute
Hydrogen sulfide H ₂ S	EC, discont.	0 ... 2.000 / 5.000 ppm*	1 ppm	10 ppm or 10% reading**
Hydrogen H ₂	TCD	0 ... 1,00 / 50,00%	0,01%	0,2% or 2% reading**

Calculated values	
Nitrogen N ₂	Difference to 100%
Calorific value	0 ... 50 MJ/m ³ or MJ/kg
HMI (human machine interface)	3,5" TFT color display Keyboard, password protected operation 4 x analog output 4–20 mA, floating, max. load 500 R 4 x analog input 4–20 mA, passive inputs 2 alarm relays, potential free contacts 24 Vdc/5 A RS485 digital interface (Modbus RTU)
System safety components	Monitored cabinet atmosphere using Pellistor sensor for LEL detection Stainless steel flow restrictor orifice Sample gas shut-down solenoid valve Power supply cut-off in case of system alarm
Sample conditioning	Stainless steel gas fittings with 1/8" ID threads Electric gas cooler (Peltier) with constant dew point +5° C Teflon particulate filter, internal Viton hosing Sampling syngas with condensate of max. 14 ml/min Monitored and regulated sample gas flow 60 l/h Sample gas inlet pressure: –100 mbar to + 200 mbar Sample gas venting: atmospheric pressure
Cabinet dimensions	700 x 600 x 210 mm (H x W x D) for wall or rack mounting
Weight / Protection class	45 kg / IP54, stainless steel
Ambient temperature	+5° C ... +45° C or –10° C ... +45° C with cabinet heater
Cabinet conditioning	Cabinet heater 300 W
Installation site	Indoor or outdoor (with sun/rain protection cover)
Power supply	Universal 90–240 Vac / 47–63 Hz / 200 W, 500 W with heater

MRU – Competence in gas analysis. Since 1984.



MRU · Messgeraete fuer Rauchgase und Umweltschutz GmbH

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