

SWG 300-1

INNOVATIVE GAS ANALYSIS TECHNOLOGY



Customized compact analysis systems

EMISSIONS MONITORING
PROCESS GAS OPTIMIZATION
PRECISE POWERFUL EFFICIENT





SWG 300-1

Complete, compact analysis system

Emission monitoring
Process gas optimisation



The multi-component gas analyzer **SWG 300-1** is based on extractive, cold-dry method and uses NDIR modules, which measure continuously, selectively and highly exactly within the ppm range.

NO₂ is catalytically converted into NO for true NO_x measurements.

Oxygen analysis is based on zirconium cell, paramagnetic cell or „long-life“ electrochemical cell.

SWG 300-1 for mounting in the analysis room

Control unit with display and keyboard

Gas flow meter

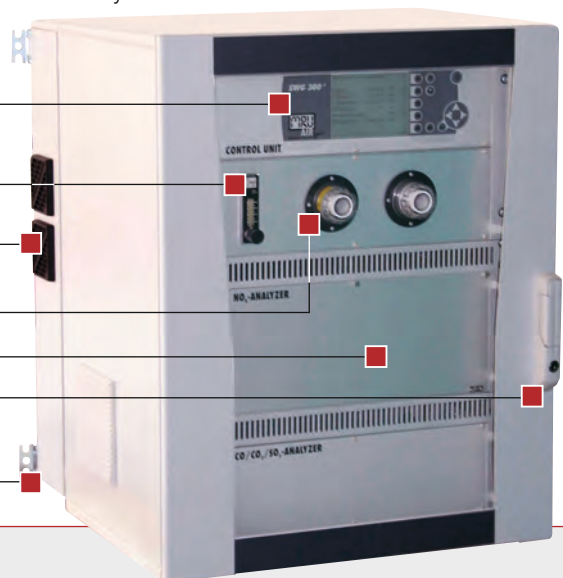
Ventilation filter

Sample gas filter

19" analyzer

Lockable door

Mounting eyelets



Standard hardware

Standardised 19" racks are mounted in a steel metal enclosure with mounting eyelets for wall mounting. The enclosure is equipped with lockable, transparent door, a main control unit with backlit graphic LCD and keyboard.

The complete flue gas conditioning system is processor-controlled and continuously monitored. It uses an electric gas cooler with automatic condensate draining pump; sample gas filtration with sample flow monitoring and alarm; auto-zero calibration, RS 485 for data communication and 8 channel analog outputs 4... 20 mA.

SWG 300-1 analyzer... easy to service!

The SWG 300-1 is easy to swing-open. All important parts are readily accessible and easily serviced.



Individual applications

- Ex-zone2 (special model)
- Up to simultaneous 7 gas components
- Up to 5 automatic sampling point switching
- Weather proof enclosure IP 65
- Complete / partial air conditioning
- Automatic calibration with test gases
- Sample gas conditioning, also directly after the sampling point
- Easy to service and maintain
- Customized solutions on request

Example: Gas sampling probe for low dust flue gas



Stainless steel probe up to 900 °C with flange DN 65 PN 6 with sintered metal filter 3 μ

Gas sampling probes and -lines

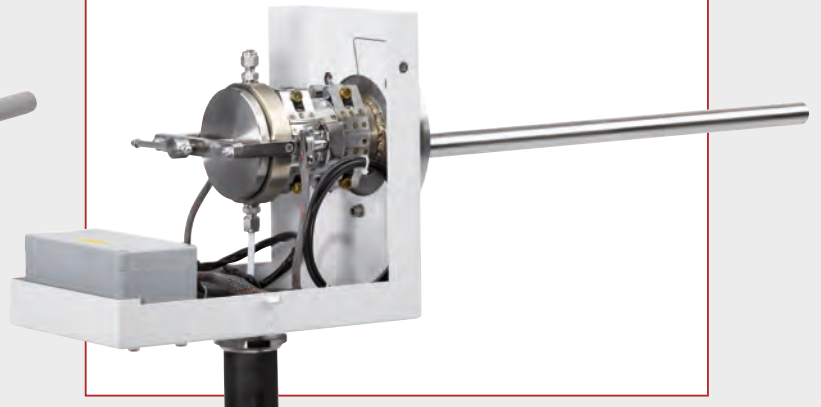
MRU offers industrial probes for high and low dust content, for gas temperatures up to 650 °C (stainless steel), up to 1.100 °C (Inconel steel) and up to 1.700 °C (ceramic).

Probes with and without heated filter element and probe tubes in several lengths.

- see separate probe brochure

Probe HD-GW (high dust)

- For flue gases with sticky, oily, tar like dirt
- With electrical heated and +150 °C temperature regulated, external, not back-purgeable quartz glass wool filter
- With stainless steel protection cover
- With stainless steel flange DN65PN6



Application: **Boiler monitoring,**
3 sampling point switching
Measured flue gas components:
NO_x · CO · CO₂ · O₂



Application:
Petro-Chemie
Measured flue gas components:
CH₄ · SO₂ · NO_x · CO · CO₂ · O₂



Application:
Incineration
Measured flue gas components:
SO₂ · NO_x · CO · CO₂ · O₂

Technical specifications

Measured components	measuring range	accuracy	measuring cell
Oxygen O ₂	0... 25 %	0,2 Vol.-% ± abs.	paramagnetic
Oxygen O ₂	0... 25 %	0,2 Vol.-% ± abs.	zirconium
Oxygen O ₂	0... 25 %	0,2 Vol.-% ± abs.	electrochemical
Nitric dioxide NO ₂	catalytic conversion in NO min. 90% conversion efficiency (option)		
1-gas infrared bench	<i>min. measuring range</i>	<i>max. measuring range</i>	<i>linearity error</i>
Carbon monoxide CO	0... 100 ppm	0... 500 ppm	2 % of full scale
Nitric monoxide NO	0... 200 ppm	0... 1.000 ppm	2 % of full scale
Sulfur dioxide SO ₂	0... 100 ppm	0... 500 ppm	2 % of full scale
2-gas infrared bench	<i>min. measuring range</i>	<i>max. measuring range</i>	<i>linearity error</i>
Nitric monoxide NO	0... 2.500 ppm	0... 5.000 ppm	3 % of full scale
Nitric dioxide NO ₂	0... 500 ppm	0... 1.000 ppm	3 % of full scale
3-gas infrared bench	<i>min. measuring range</i>	<i>max. measuring range</i>	<i>linearity error</i>
Carbon monoxide CO	0... 1.000 ppm	0... 30.000 ppm	3 % of full scale
Carbon dioxide CO ₂	0... 3 %	0... 30 %	3 % of full scale
Sulfur dioxide SO ₂	0... 1.000 ppm	0... 5.000 ppm	3 % of full scale
4-gas infrared bench	<i>min. measuring range</i>	<i>max. measuring range</i>	<i>linearity error</i>
Carbon monoxide CO	0... 200 ppm	0... 1.000 ppm	2 % of full scale
Carbon dioxide CO ₂	0... 4 %	0... 20 %	2 % of full scale
Nitric monoxide NO	0... 200 ppm	0... 1.000 ppm	2 % of full scale
Sulfur dioxide SO ₂	0... 200 ppm	0... 1.000 ppm	2 % of full scale
or Methane CH ₄ (instead of SO ₂)	0... 200 ppm	0... 1.000 ppm	2 % of full scale
Calculated values	mg/Nm ³ , reference to O ₂ , NOx als mg/m ³ NO ₂		
Repeatability	1 % of smallest measuring range		
Response time T90	approx. 30 seconds of the analyzer sample gas inlet port		
Detection limit	1% of current measuring range		
Zero drift	with AUTOZERO: neglectable		
Span drift	without AUTOCAL(option): <2% of measuring range / 2 weeks		
Temperature influence	max 2% of measuring range per 10°K		
Measured value stability	The aforementioned data are valid provided that ambient conditions (e.g. sample flow, air temperature and pressure) are constant.		
General specification			
Warm-up time	1h minimum		
Sample gas conditioning	integrated gas cooler with dew point = +3 °C		
Sample gas filtration	filtering particle size < 1µ		
Sample gas monitoring	flow regulation and supervision, 30 ... 50 l/h		
Calibration	By software, calibration gases for every gas required, instrument air or clean ambient air for auto-zero		
Operating temperature	+5 °C ... +40 °C, max. 90 % rh, not condensing		
Storage temperature	-20 °C ... +50 °C		
Ambient conditions	use in aggressive, corrosive or very high dust atmosphere (on request) hazardous area use only with special equipment (on request).		
Display	full graphic, backlit LCD display		
Resolution	depends on range selection, ppm or %		
Data transfer	8 channel analog output 4 ... 20 mA, RS 485 digital (modbus RTU)		
Alarm relays	3x potential free NO contacts		
Power supply	110 ... 230 Vac / 50 ... 60 Hz / 500 ... 750 W, with heated hose control (option) add 100 W/ meter		
Internal main fuse	10 ... 32 A (dependent upon length of the heated gas sampling line)		
Protection class	IP 52 (IP 65 for outdoor mounting cabinet)		
Weight	approx. 40 ... 120 kg, depending on system configuration and construction		
Dimensions	(H x W x D) 1.012 x 600 x 575 mm = steel enclosure for indoor mounting (H x W x D) 1.300 x 800 x 600 mm = fiber glass enclosure for outdoor mounting		

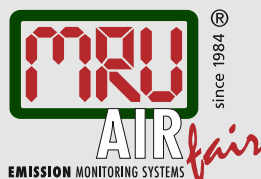
Data subject to change without notice.

MRU – sustainable analysing technology for more than 30 years!

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