

SWG-300
CEMS



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COMPLETE CEMS CONTINUOUS EMISSIONS MONITORING SYSTEM



Innovative gas analysis technology



since 1984®

AIR fair

EMISSION MONITORING SYSTEMS

O₂

CO₂

CO

NO

NO₂

NO_x

SO₂

CH₄

SWG-300 CEMS

COMPLETE CEM SYSTEM EMISSIONS MONITORING

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 accurately within the ppm range. NO₂ is catalytically converted into NO for true NO_x measurements. Oxygen analysis is based on zirconium oxide cell, paramagnetic cell or "long-life" electrochemical cell.

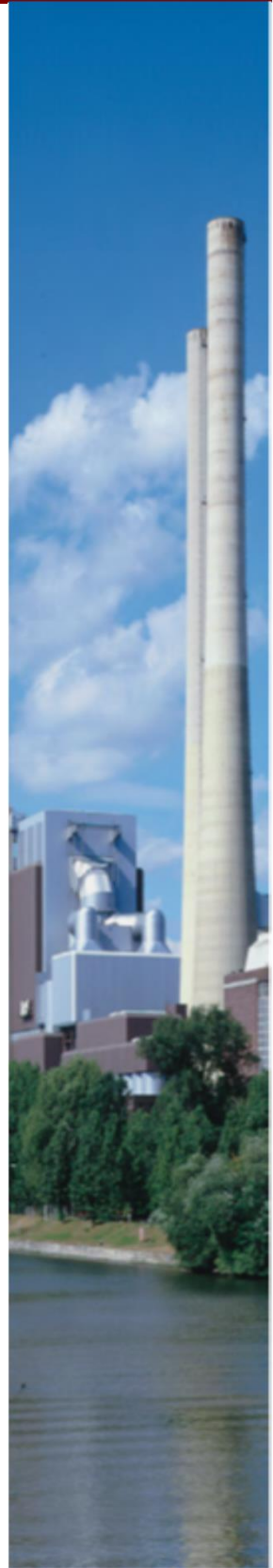
Standard hardware

Standardized 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 a Peltier electric gas cooler with an 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.

- 1 Mounting eyelets
- 2 Ventilation filter
- 3 Gas flow indicator
- 4 Control unit with keypad and display
- 5 19" analyzer
- 6 Sample gas filter
- 7 Lockable door



Easy service!
The SWG 300-1 is easy to swing-open. All important parts are easily accessible and therefore ideal to service.



SWG-300 GEMS

INNOVATIVE GAS ANALYSIS TECHNOLOGY



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

Boiler monitoring application



Petro-Chem application

Gas sampling probes and lines

MRU offers industrial probes for high and low dust content, for gas temperatures for up to 1200°F (stainless steel), for up to 2000°F (Inconel steel) and for up to 3000°F (ceramic). Probes with and without heated filter element and probe tubes in several lengths.

See separate brochure for probes.



SWG-300 GEMS

TECHNICAL SPECIFICATIONS

DATA SUBJECT TO CHANGE WITHOUT NOTICE

Measurement components		Measuring range	Accuracy	Measuring cell
O2	Oxygen	0 ... 25.0 Vol-%	± 0.2 Vol-% abs.	paramagnetic
O2	Oxygen	0 ... 25.0 Vol-%	± 0.2 Vol-% abs.	zirconium
O2	Oxygen	0 ... 21.0 Vol-%	± 0.2 Vol-% abs.	electrochemical
NO2	Nitrogen dioxide	catalytic conversion in NO min. 90% conversion efficiency (option)		
1-gas infrared bench		min. measuring range	max. measuring range	linearity error
CO	Carbon monoxide	0...100ppm	0.....500ppm	2 % of full scale
NO	Nitric oxide	0...200ppm	0....2,000ppm	2 % of full scale
SO2	Sulfur dioxide	0...100ppm	0....1,000ppm	2 % of full scale
2-gas infrared bench		min. measuring range	max. measuring range	linearity error
NO	Nitric oxide	0...2,500ppm	0...5,000ppm	3 % of full scale
NO2	Nitrogen dioxide	0.....500ppm	0....1,000ppm	3 % of full scale
3-gas infrared bench		min. measuring range	max. measuring range	linearity error
CO	Carbon monoxide	0...1,000ppm	0...30,000ppm	3 % of full scale
CO2	Carbon dioxide	0 ... 3 %	0 ... 30 %	3 % of full scale
SO2	Sulfur dioxide	0...1,000ppm	0.....5,000ppm	3 % of full scale
4-gas infrared bench		min. measuring range	max. measuring range	linearity error
CO	Carbon monoxide	0...200ppm	0....1,000ppm	2 % of full scale
CO2	Carbon dioxide	0 ... 4 %	0 ... 20 %	2 % of full scale
NO	Nitric oxide	0...200ppm	0....1,000ppm	2 % of full scale
SO2	Sulfur dioxide	0...200ppm	0....1,000ppm	2 % of full scale
CH4	Methane instead of SO2	0...200ppm	0....1,000ppm	2 % of full scale
Calculated values		mg/Nm3, reference to O2, NOx as mg/m3NO2		
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: negligible		
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 on condition 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		41 °F ... +104 °F, max. 90 % rh, non condensing		
Storage temperature		-4 °F ... +120 °F		
Ambient conditions		no use in aggressive, corrosive or very high dust environments 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/3.28' (meter)		
Internal main fuse		10 ... 32 A 10 ... 32 A (dependent upon length of the heated gas sampling line)		
Protection class		IP 52 (IP 65 for outdoor mounting cabinet)		
Weight		approx. 88 lbs. ... 264 lbs. (40 ... 120 kg), depending on system configuration and construction		
Dimensions		(H x W x D) 39.83" x 23.61" x 22.63" (1012 x 600 x 575 mm) = steel enclosure for indoor mounting (H x W x D) 51.16" x 31.48" x 23.61" (1300 x 800 x 600 mm) = fiber glass enclosure for outdoor mounting		

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