



NO_x | NO | NO₂ | CO | CO₂ | SO₂ | N₂O | CH₄ | HC as C₃H₈ | O₂

SWG 200 CEM

Stationary
gas analysis system.



For continuous flue gas
and emission monitoring.



SWG 200 CEM

Optimal gas analysis around the clock

With SWG 200 CEM (Continuous Emission Monitoring) we offer you a cost-effective, reliable system for emission and combustion monitoring.

Suitable for various industrial sectors:

Diesel engines, methane/natural gas boilers, landfill gas/biogas CHPs, bagasse and biomass boilers and others

With **SWG 200 CEM**, simultaneous infrared analysis of up to 8 flue gas components is possible:

Gas measurement (NDIR)	Measuring range min./max.	Resolution	Repeatability
Nitric monoxide (NO)	0 ... 200/4,000 ppm	0.1 ppm	2 ppm or 1 % reading
Nitric dioxide (NO ₂)	0 ... 150/500 ppm	0.1 ppm	1 ppm or 1 % reading
Sulphur dioxide (SO ₂)	0 ... 200/4,000 ppm	0.1 ppm	2 ppm or 1 % reading
Carbon dioxide (CO ₂)	0 ... 40 %	0.01 Vol%	0.2% or 1 % reading
Carbon monoxide (CO)	0 ... 200/10,000 ppm	0.1 ppm	2 ppm or 1 % reading
Nitrous oxide (N ₂ O)	0 ... 100/500 ppm	0.1 ppm	2 ppm or 1 % reading
Methane (CH ₄)	0 ... 500/10,000 ppm	0.1 ppm	10 ppm or 1 % reading
Propane (C ₃ H ₈)	0 ... 200/5,000 ppm	0.1 ppm	2 ppm or 1 % reading

We offer you these special advantages:

- Use of optimized NDIR technology with improved accuracy and without zero offset
- O₂ measurement with an electrochemical or a paramagnetic sensor
- Automatic zero point using clean ambient air
- Automatic calibration for up to 4 gas cylinders
- Double stage Peltier gas cooler with 2 automatic condensate pumps
- Cold/dry gas sampling with low sample flow volume of only 1 l/min.



The device in detail

An overview of the special features



Cabinet

- Aluminum housing with corrosion-resistant, red structural laqueur
- 3.5" TFT color display, incl. keypad and standard RS 485 interface (Modbus RTU)
- Indoor installation, preferably air-conditioned
- Outdoor installation with sun and rain protection and low dust site



Gas conditioning

- Different probes, depending on the condition the gases to be analyzed (lowdust, highdust and compact probe with heating hose)
- Heated and unheated gas sampling lines up to 80 m length for up to 3 measuring points
- Efficient gas filtration by sintered PTFE particle filters
- Int. flow monitoring with alarm indication on the display
- Filtering of the gas to protect the internal flow sensor



Measurement technology

- Choice of 4-gas, 6-gas or 8-gas infrared (NDIR) measurement modules
- Electrochemical or paramagnetic O₂ sensor
- Direct and continuous measurement with pressure and temperature compensation
- Electrochemical H₂ and H₂S measurement
- Controlled dosage and injection of 10% phosphoric acid for reliable, precise measurement of SO₂ and NO₂



Data communication

- I/O module with 4-channel analog output 4 ... 20 mA and 2 relays (NO contacts) incl. external control via 4 contacts and 4-channel analog input 4 ... 20 mA
- Profibus, Ethernet, USB, SD card
- PC software "MRU4Win": visualize measurement data, manage, export and print

SWG 200 CEM

Technical data

Gas measurement (NDIR)	Measuring range min./max.	Resolution	Repeatability*	8h-Drift*	Linearity
Nitric monoxide (NO)	0 ... 200/4,000 ppm	0.1 ppm	2 ppm or 1% reading	2 ppm or 1% reading	1% m. r.
Nitric dioxide (NO ₂)	0 ... 150/500 ppm	0.1 ppm	1 ppm or 1% reading	2 ppm or 1% reading	1% m. r.
Sulphur dioxide (SO ₂)	0 ... 200/4,000 ppm	0.1 ppm	2 ppm or 1% reading	2 ppm or 1% reading	1% m. r.
Carbon dioxide (CO ₂)	0 ... 40%	0.01 Vol%	0.2% or 1% reading	0.2% or 1% reading	1% m. r.
Carbon monoxide (CO)	0 ... 200/10,000 ppm	0.1 ppm	2 ppm or 1% reading	2 ppm or 1% reading	1% m. r.
Nitrous oxide (N ₂ O)	0 ... 100/500 ppm	0.1 ppm	2 ppm or 1% reading	2 ppm or 1% reading	1% m. r.
Methane (CH ₄)	0 ... 500/10,000 ppm	0.1 ppm	10 ppm or 1% reading	2 ppm or 1% reading	1% m. r.
Propane (C ₃ H ₈)	0 ... 200/5,000 ppm	0.1 ppm	2 ppm or 1% reading	2 ppm or 1% reading	1% m. r.
Gas measurement (EC/PM)	Method ¹	Measuring range min./max.	Resolution	Accuracy*	
Oxygen (O ₂) (long life)	EC	0 ... 25%	0.01%	0.2%	
Oxygen (O ₂)	PM	0 ... 25%	0.01%	0.1%	
Hydrogen sulphide (H ₂ S)	EC	0 ... 2,000/5,000 ppm	1 ppm	± 5 ppm or 5% reading	
Hydrogen (H ₂)	EC	0 ... 1,000 2,000 ppm	1 ppm	± 5 ppm or 5% reading	
General technical data					
Zero offset	negligible due to automatic zeroing				
Span offset	less than 0.2% of the measuring range per month				
Calculated components	NO _x : NO + NO ₂ , calculated ppm or mg/m ³ , user-selectable O ₂ reference combustion calculations (efficiency, heat loss) on special request				
Operation/interfaces	<ul style="list-style-type: none"> ■ Backlit 3.5" TFT color display ■ Backlit keyboard, password-protected operation ■ 4 analog outputs 4 ... 20 mA, galvanically isolated, max. load: 500 R ■ 2 alarm relays, potential-free contacts: 24 Vdc, 5 A ■ Data storage and data logger on SD card ■ RS 485 digital interface (Modbus RTU) ■ DIN rail RS 485, to ProfiBus converter or to Ethernet converter 				
Gas conditioning	<ul style="list-style-type: none"> ■ HD gas sampling probe, heated ceramic filter with backpurge, or gas sampling probe HD-GW, heated glass wool filter, or LD gas sampling probe, unheated with in-situ sintered metal filter, heated or unheated gas sampling line, PTFE DN 4/6 mm ■ Thermoelectric gas cooler (Peltier) with constant +4 °C dew point ■ Teflon particle filter, internal Viton tubing ■ Monitored and regulated gas sampling pump ■ Constant gas flow of 50 l/h ■ Gas inlet pressure: -200 ... +20 mbar (hPa) ■ Sample gas outlet: atmospheric pressure 				
Housing	Aluminum housing with red textured paint, continuously monitored cabinet ventilation with alarm, Antifreeze heater 200 W (option)				
Operating conditions	+5 ... +45 °C or -10 ... +45 °C with cabinet heating				
Power supply	Universal: 90 ... 240 Vac, 47 ... 63 Hz, 90 W (300 W with heating)				
Protection class	IP54				
Dimensions (W x H x D)	700 x 800 x 280 mm, suitable for wall mounting				
Weight	25 kg				

Data subject to change without notice. | ¹EC = electrochemical sensor, PM = paramagnetic sensor, NDIR = non-dispersive infrared spectroscopy | * which ever is larger | N-12746-K0-10-620-5DE

MRU – Competence in gas analysis. For over 35 years.



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