MRU AIR fair since 1984 ®
EMISSION MONITORING SYSTEMS

NO_x | NO | NO_2 | CO | CO_2 | SO_2 | CH_4 | C_3H_8 | O_2

SWG 100 *CEM*

Stationary gas analysis system.

For continuous flue gas and emission monitoring.

SWG 100 *CEM*

Optimal gas analysis around the clock

With SWG 100 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 100 CEM,** simultaneous **infrared analysis** of up to 3 flue gas components is possible. Further more it is possible to measure 3 more components **simultaneously** electrochemicaly. Alternatively up to 5 components may be measured simultaneously on electrochemical basis. The electrochemical sensors are O_2 – CO – NO – NO_2 – SO_2.

We offer you these special advantages:

- Single heat exchanger and Peltier- gas cooler with automatic condensate-pump
- no dilution of sample gas needed, simulatenous measurement of all gas parameters
- direct and continuous measurement, with pressure- and temperature compensation
- Automatic zero point using clean ambient air
- internal flow monitoring with alarm indication in the display, e.g. In case of clogged probe or internal filter
- Gas sampling from –150 mbar low pressure up to +50 mbar flue gas pressure

The device in detail

An overview of the special features

Cabinet

- Stainless steel cabinet for industrial environment
- 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 75 m length
- 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

- 3-gas-NDIR-measuring module
- Paramagnetic O_2-sensor
- Elektrochemical O_2-sensor
- Direct and continuous measurement with pressure and temperature compensation

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 100 *CEM*

Technical data

Gas measurement (NDIR)	Measuring range min./max.	Resolution	Repeatability*
Carbon monoxide (CO)	0 ... 1,000/100,000 ppm	1 ppm	± 10 ppm or 3 % reading
Carbon dioxide (CO_2)	0 ... 50 %	0.01 Vol %	± 0.1% oder 3 % reading
Sulphur dioxide (SO_2)	0 ... 1,000/10,000 ppm	1 ppm	± 10 ppm or 3 % reading
Methane (CH_4)	0 ... 1,000/40,000 ppm	1 ppm	± 10 ppm or 3 % reading
Propane (C_3H_8)	0 ... 1,000/20,000 ppm	1 ppm	± 10 ppm or 3 % reading

Gas measurement (EC/PM)	Method	Measuring range min./max.	Resolution	Accuracy*
Oxygen (O_2) (long life)	EC	0 ... 25 %	0.01 %	± 0.25 % abs.
Oxygen (O_2)	PM	0 ... 25 %	0.01 %	± 0.1 % abs.
Carbon monoxide (CO)	EC	0 ... 10,000/20,000 ppm	1 ppm	± 10 ppm or 5 % reading
Nitric monoxide (NO)	EC	0 ... 1,000/5,000 ppm	1 ppm	± 5 % or 5 % reading
Nitric dioxide (NO_2)	EC	0 ... 200/1,000 ppm	1 ppm	± 5 % or 5 % reading
Sulphur dioxide (SO_2)	EC	0 ... 2,000/5,000 ppm	1 ppm	± 10 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/m³, user-selectable O_2 reference combustion calculations (efficiency, heat loss) on special request
Operation/interfaces	■ 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	■ 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: – 150 ... + 50 mbar (hPa) ■ Sample gas outlet: atmospheric pressure
Housing	Stainless steel cabinet
Operating conditions	+ 5 ... + 45 °C or – 10 ... + 45 °C with cabinet heating
Power supply	Universal: 100 ... 240 Vac, 47 ... 63 Hz, 120 W (420 W with cabinet heating)
Protection class	IP54
Dimensions (W x H x D)	600 x 700 x 210 mm, suitable for wall mounting
Weight	50 kg

MRU – Competence in gas analysis. Since 1984.

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