

FLUE / PROCESS GAS ANALYSER SWG 200¹



Continuous emission monitoring systems are designed to control and monitor the emission level of combustion sources or industrial processes. The standard following components can be measured and indicated:

O₂ Oxygen	0 – 25,0 % electrochemical cell
CO Carbon monoxide	0 – 4.000 ppm NDIR bench
CO₂ Carbon dioxide	0 – 20,0 % NDIR bench
CH₄ Methane	0 – 10.000 ppm NDIR bench

SHORT DESCRIPTION

- The continuous emission analysis is based on infrared bench (NDIR) and long life electrochemical cell.
- The **SWG 200-1** will be installed nearby to the gas sampling points, so that there is only a short distance between the analyzer and the gas sampling point. This will decrease the response time of analyzer. The standard length of the non-heated PTFE gas sample line is 10 m.
- The **SWG 200-1** is equipped with a complete sample conditioning system.
- The **SWG 200-1** is equipped with a standardised digital data interface and analogue outputs as 0/4-20mA current loop. The measured data will be provided at these outputs.
- Display for analysis data and service data indication are direct in front of the **SWG 200-1**.
- The **SWG 200-1** is designed for continuous measurement. The automatically zero calibration is occurring at least once a day according to the free user software settings.
- By means of inlets at the bottom of the enclosure, the installation of the power supply 230V / 50Hz, (115V / 50-60Hz on request) the gas sampling line, the condense outlet and the data lines are carried out.
- The place of installation **SWG 200-1** is in a dry, weatherproof ambient with temperature between +5°C and +40°C.

HARDWARE

The complete hardware is mounted into a steel cabinet (weight approx. 30kg, protection IP 43, with 4 fastening loops for wall mounting).

- ✓ **Lockable glass door**
- ✓ **Local operation keyboard and back lighted LCD display for indication of measured data.**
- ✓ **Complete flue gas conditioning system with:**
 - Gas sampling pump
 - Sample gas cooler
 - Automatic condensate draining
 - Filter elements for flue gas and ambient air
 - Flow meter with needle valve
 - Solenoid valve for auto-zero

- ✓ μ -processor electronic board
- ✓ Sensors and amplifier electronics, infrared bench
- ✓ RS485 interface for long distance data transfer
- ✓ 8x analog outputs as 4-20mA current loop

SOFTWARE

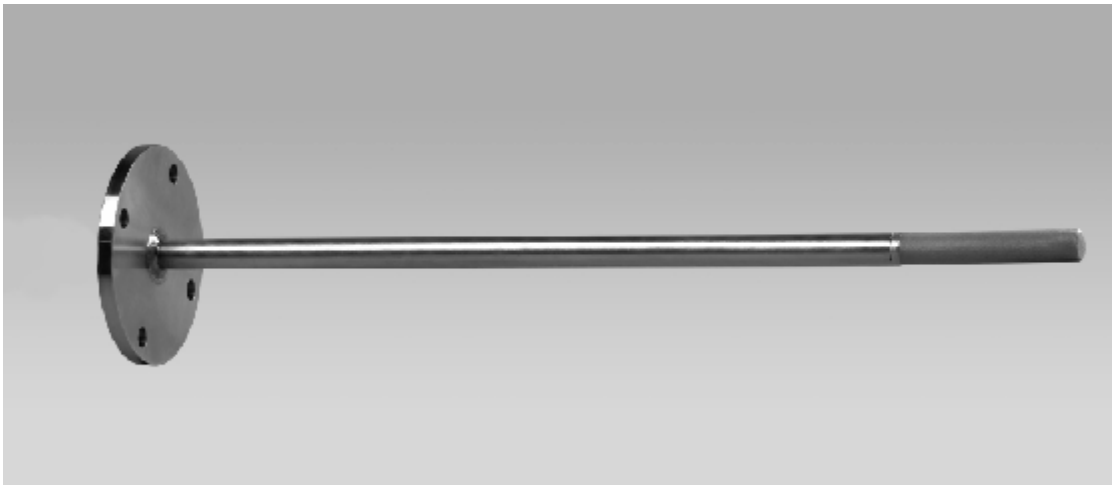
Standard software for all aforementioned functions with self-check of all internal functions:

- System diagnosis
- Peltier cooler automatic control
- Sensor functions
- Condensate monitoring
- Automatic and standby operation
- Digital data transmission, including PC visualization software

Analyzer specifications

Measuring principle:	non dispersive infrared, single light source with electronic modulation, single beam system, multigas detector for CO, CO ₂ and CH ₄ , and/or long life electrochemical cells for O ₂ , CO, NO and NO ₂
Measurable components and measuring ranges :	CO: 0 – 4.000 ppm CO ₂ : 0 – 20 / 40 % CH ₄ : 0 – 10.000 ppm O ₂ : 0 – 25,0 % Other measuring ranges on request
Resolution:	1 ppm respectively 0,1%
Detection limit:	20 ppm respectively 0,1%
Repeatability:	+/- 3% FS
Linearity:	+/- 3% FS
Long time zero drift:	none, with automatic auto-zero
Span drift:	less than +/- 5% FS over 1 week
Temperature effect on zero	none, with automatic auto-zero
Temperature effect on span:	none, internal temperature compensation
Response time:	less than 30 seconds for 90% FS response, from analyzer inlet port
Warm-up time:	minimum 1/2 hour
Gas sample conditioner:	flow rate: 0,5 l/min amb. temp.: 0 - 40°C moisture: less than +5°C dew point dust: less than 1µm inlet pressure: 700 mbar....1200mbar absolute inlet/outlet ports: 6 mm fitting
Calibration:	by software, calibration gases for every gas required clean and dry ambient air for auto-zero purging
Sample gas flow:	flow meter with needle valve, stainless steel, flow monitoring and alarm
Power supply:	230 Vac / 50 Hz, 100 W (other on request)
Electronics:	microprocessor, graphic display with backlight, membrane keypad
Analog output:	up to 8 channel 4 - 20 mA
Digital output:	RS485 for long distance data transfer
Digital input:	3x potential free voltage, 12V to 24V ac or dc
Electrical connections:	rear panel 19" rack feed-through terminal blocks
Ambient temperature:	+5°C ... +40°C
Ambient humidity:	up to 95% RH , non condensing
Enclosure:	Steel, high protection finish for IP43
Dimensions & weight:	600 x 220 x 4200 mm (W x H x D), 24 kg

Gas sampling probe LD, with in-situ filter



Gas sampling probe for applications with low dust rate, with:

- Stainless steel probe tube length \varnothing 22 mm x 250/500/750/1000 mm, or longer up to max. 2000 mm, for flue gas temperatures up to 500°C
- Inconel steel probe tube length \varnothing 22 mm x 500/750/1000 mm, or longer up to max. 2000 mm, for flue gas temperatures up to 900°C
- Stainless steel 1.4571 (SS316Ti) flange DN65 PN6
- In-situ sintered metal filter 3 μ m, screwable, pipe connection for Teflon gas sample line DN6/4 with Teflon gas sample line DN6/4, 10 m

Option:

• Heated gas sample line with:

- exchangeable Teflon hose (PTFE), DN6/4
- 230Vac, 100 W/m
- length 5 m (for other length see price/meter)

Gas sampling probe HD, with heated filter



Gas sampling probe for applications with high dust rate, with:

- Stainless steel probe tube Ø 22 mm x length 250/500/750/1000 mm, or longer up to max. 2000 mm, for flue gas temperature up to 600°C
- Inconel steel probe tube Ø 22 mm x length 500/750/1000 mm, or longer up to max. 2000 mm, for flue gas temperature up to 1100°C
- Ceramic probe tube Ø 22 mm x length 750/1000 mm, or longer up to max. 2000 mm, for flue gas temperature up to 1700°C
- Stainless steel flange DN65 PN6
- Heated ceramic filter to approx. 150 °C, easy access for maintenance
- Automatic back purging with oil and water free compressed air, connection 6...10 bar,
- Pipe connection for heated sample line
- Protection cover against the hot surface of the filter

Option:

- **Heated gas sample line with:**
 - exchangeable Teflon hose (PTFE), DN6/4
 - 230Vac, 100 W/m
 - length 5 m (for other length see price/meter)