MRU AIR fair since 1984 ®
EMISSION MONITORING SYSTEMS

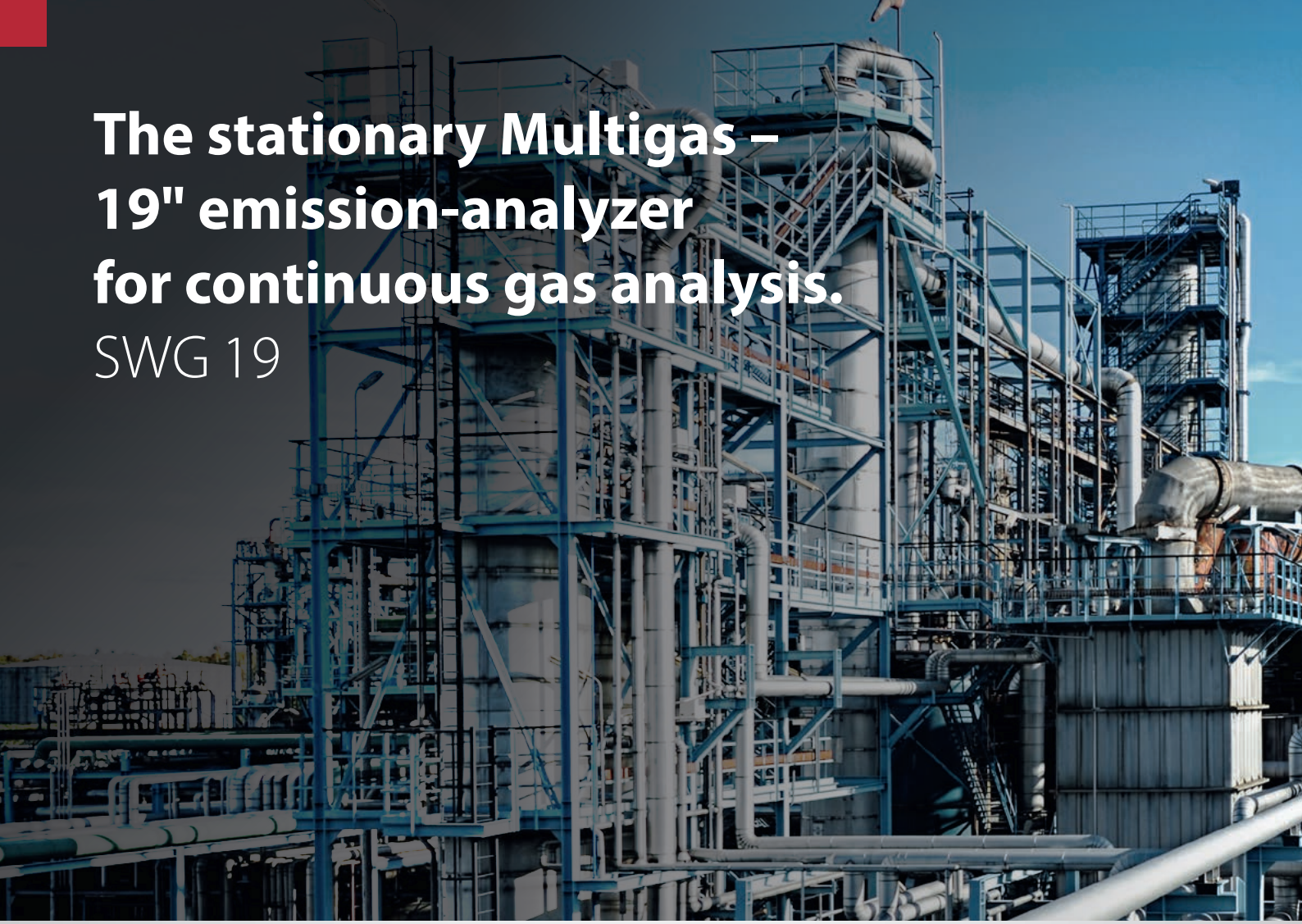
CH_4 | CO_2 | CO | O_2 | NO | NO_2 | N_2O | H_2S | SO_2 | H_2 | C_3H_8

Multigas Analyzer
SWG 19

Continuous measurements for combustion-, emission- and syngas analysis

The stationary Multigas – 19" emission-analyzer for continuous gas analysis.

SWG 19



The gas analysing system SWG 19 is suitabel for continuous measurements of gas components like CO / CO_2 / NO / NO_2 / N_2O / SO_2 / CH_4 / C_3H_8 / H_2. **All of those nine components** as well as O_2 can be measured simultaneously. For oxygen analysis the SWG 19 can be equipped with either an electro-chemical or paramagnetic sensor. This gas analysis system may be used in emission monitoring systems or for the purpose of process- and combustion analysis. For use in non-explosive environment.

Oustanding advantages:

- Use of optimized NDIR-Technology with improved accuracy without zero point-drifts for up to 8 gases
- O_2-measurement with an electrochemical or paramagnetical sensor
- Bypass operation by means of integrated sample gas pump
- Application adapted infrared measuring technique for
  – emissions of flue gases
  – combustion optimization
  – analaysis of syngases

Scope of supply

- IP21 aluminum enclosure 19" / 4U,
- integrated sample gas pump, for low, regulated 50 lpm sample flow
- with internal sample flow monitoring, value and alarm on-display
- safety water stop filter and condensate alarm device
- all measurements displayed as volumetric ppm or % and mg/Nm^3 as well
- 5 off open collector pull-down contacts for optional use of external solenoid valves
- sample gas conditioner "Ext. ready" signal for start internal gas pump (bypass mode)
- stainless -steel gas connectors 1/8" ID female threads, suitable for users own bulkhead compression fittings
- human machine interface with colour TFT display and keyboard
- RS485-USER interface with user free Modbus RTU protocol for digital data transfer
- RS485-INT interface for the optional external I/O modules with 4 ... 20mA analog outputs

Fields of application

Version CEM (emission analysis)

- power plants
- cement plants
- gas turbines

Version COA (combustion analysis)

- industriall furnace- and boiler making
- CHP
- steel industry

Version SYNGAS (syngas analysis)

- biomass- und waste gasification
- cole gasification
- pyrolisis applications

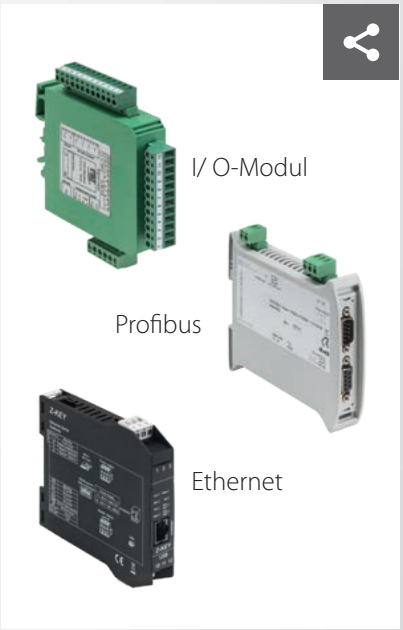
The device in detail

An overview of the special features

Oxygen measurement via electrochemical or paramagnetical sensor

NDIR-measuring technique

for all other gas components



I/O-modules

with 4-canal, 4 ... 20 mA analogue outputs and 2 alarm relais (NO contacts)

Condensate monitoring

Water stopp filter

Gas conditioning with activated carbon and PTFE -filter

Technical Data

SWG 19

Version CEM (emission analysis)

Gas measurements	Sensor technique	Range	Resolution	Accuracy
Oxygen O_2	EC	0 ... 21 %	0,01 Vol.-%	±0,2 % abs.
Oxygen O_2	PM	0 ... 25 %	0,01 Vol.-%	±0,1 % abs.
Measuring module CO / CO_2 / SO_2				
Carbon monoxide CO	NDIR	0 ... 1.000/100.000 ppm*	1 ppm	± 10 ppm oder 3 % of reading**
Carbon dioxide CO_2	NDIR	0 ... 50 %*	0,01 %	± 0,1 % or 3 % of reading **
Sulphur dioxide SO_2	NDIR	0 ... 1.000/10.000 ppm*	1 ppm	± 2 ppm or 3 % of reading**
Measuring module CO / CO_2 / C_3H_8				
Carbon monoxide CO	NDIR	0 ... 3.000/30.000 ppm*	1 ppm	± 2 ppm or 3 % of reading**
Carbon dioxide CO_2	NDIR	0 ... 50 %*	0,01 %	± 0,1 % or 3 % of reading**
Propane C_3H_8	NDIR	0 ... 1.000/20.000ppm*	1 ppm	± 10 ppm or 3 % of reading**
Measuring module CO / CO_2 / NO / NO_2 / SO_2 / CH_4				
Carbon monoxide CO	NDIR	0 ... 175 / 10.000 ppm*	1 ppm	± 10 ppm or 3 % of reading**
Carbon dioxide CO_2	NDIR	0 ... 50 %*	0,01 %	± 0,1 % or 3 % of reading**
Nitric monoxide NO	NDIR	0 ... 200 / 4.000 ppm*	0,1 ppm	± 2 ppm or 3 % of reading**
Nitric dioxide NO_2	NDIR	0 ... 150 / 1.000 ppm*	0,1 ppm	± 1 ppm or 1 % of reading**
Sulphur dioxide SO_2	NDIR	0 ... 150 / 4.000 ppm*	0,1 ppm	± 2 ppm or 3 % of reading**
Methane CH_4	NDIR	0 ... 500 / 10.000ppm*	1 ppm	± 10 ppm or 3 % of reading**
Measuring module CO / CO_2 / NO / NO_2 / SO_2 / C_3H_8				
Carbon monoxide CO	NDIR	0 ... 175 / 10.000 ppm*	1 ppm	± 2 ppm or 3 % of reading**
Carbon dioxide CO_2	NDIR	0 ... 50 %*	0,01 %	± 0,1 % or 3 % of reading**
Nitric monoxide NO	NDIR	0 ... 200 / 4.000 ppm*	0,1 ppm	± 2 ppm or 3 % of reading**
Nitric dioxide NO_2	NDIR	0 ... 150 / 1.000 ppm*	0,1 ppm	± 2 ppm or 3 % of reading**
Sulphur dioxide SO_2	NDIR	0 ... 150 / 4.000 ppm*	0,1 ppm	± 2 ppm or 3 % of reading**
Propane C_3H_8	NDIR	0 ... 200 / 5.000ppm*	1 ppm	± 2 ppm or 3 % of reading**
Measuring module CO / CO_2 / NO / NO_2 / N_2O / SO_2 / CH_4 / C_3H_8				
Carbon monoxide CO	NDIR	0 ... 175 / 10.000 ppm*	1 ppm	± 10 ppm or 3 % of reading**
Carbon dioxide CO_2	NDIR	0 ... 50 %*	0,01 %	± 0,1 % or 3 % of reading**
Nitric monoxide NO	NDIR	0 ... 200 / 4.000 ppm*	0,1 ppm	± 2 ppm or 3 % of reading**
Nitric dioxide NO_2	NDIR	0 ... 150 / 1.000 ppm*	0,1 ppm	± 1 ppm or 1 % of reading**
Stickstoffdioxid N_2O	NDIR	0 ... 100 / 500 ppm*	0,1 ppm	± 2 ppm or 1 % of reading**
Sulphur dioxide SO_2	NDIR	0 ... 150 / 4.000 ppm*	0,1 ppm	± 2 ppm or 3 % of reading**
Methane CH_4	NDIR	0 ... 500 / 10.000ppm*	1 ppm	± 10 ppm or 3 % of reading**
Propane C_3H_8	NDIR	0 ... 200 / 5.000ppm*	1 ppm	± 2 ppm or 3 % of reading**

Technical Data

SWG 19

Version COA (combustion analysis)

Gas measurements	Sensor technique	Range	Resolution	Accuracy
Oxygen O_2	EC	0 ... 25 %	0,01 Vol.-%	±0,2 % abs.
Oxygen O_2	PM	0 ... 25 %	0,01 Vol.-%	±0,1 % abs.
Measuring module CO / CO_2 / CH_4				
Carbon monoxide CO	NDIR	0 ... 1.000 / 100.000 ppm*	1 ppm	± 10 ppm or 3 % of reading**
Carbon dioxide CO_2	NDIR	0 ... 5 %*	0,01 %	± 0,1 % or 3 % of reading**
Methane CH_4	NDIR	0 ... 1.000 / 40.000 ppm*	1 ppm	± 10 ppm or 3 % of reading**
Measuring module CO / CO_2 / C_3H_8				
Carbon monoxide CO	NDIR	0 ... 3.000 / 30.000 ppm*	1 ppm	± 2 ppm or 3 % of reading**
Carbon dioxide CO_2	NDIR	0 ... 5 %*	0,01 %	± 0,1% or 3 % of reading**
Propane C_3H_8	NDIR	0 ... 1.000 / 20.000 ppm*	1 ppm	± 10 ppm or 3 % of reading**

Version Syngas (Syngas analysis)

Gas measurements	Sensor technique	Range	Resolution	Accuracy
Oxygen O_2	EC	0 ... 25 %	0,01 Vol.-%	±0,2 % abs.
Oxygen O_2	PM	0 ... 25 %	0,01 Vol.-%	±0,1 % abs.
Hydrogen H_2	TCD	0 ... 5 %	0,01 Vol.-%	±0,5 % abs. or 2 % of reading
Hydrogen sulphide H_2S	EC	0 ... 1.000 ppm	1 ppm	±5 ppm abs. or 5 % of reading (0 ... 500 ppm) ±15% of reading (≥ 500 ppm)
Measuring module CO / CO_2 / CH_4				
Carbon monoxide CO	NDIR	0 ... 10 %	0,01 %	± 0,3 % or 2 % of reading**
Carbon dioxide CO_2	NDIR	0 ... 10 %	0,01 %	± 0,3 % or 2 % of reading**
Methane CH_4	NDIR	0 ... 10 %	0,01 %	± 0,3 % or 2 % of reading**

General technical data	
Operation/interfaces	Backlit 3.5" TFT color display keyboard, password-protected calibration 4 x analog outputs 4 ... 20 mA, galvanically isolated, max. load: 500 R 2x alarm relays, potential-free contacts: 24 Vdc, 5 A RS 485 digital interface (Modbus RTU) RS485 to USB-, Ethernet-, ProfiBus-converter
Gas conditioning	stainless steel fittings with 1/8" ID thread Teflon-particle filter sample gas pump 50 l/h Gas inlet pressure: 0 mbar up to + 30 mbar Sample gas outlet: atmospheric pressure
Dimensions (H x W x D)	172 x 482 x 362 mm without handles and connectors
Weight / Protection class	10 kg / IP20
Location	Inside in analyser cabinet
Ambient temperature	+5° C ... +45° C
Housing	Aluminium cabinet
Power supply	Universal 100 ... 240 Vac /47 ... 63 Hz / 60W

*overload range of ECS is usable only for short duration | ** which ever is larger | N-9514EN-K0-0M-0326 | Data subject to change without notice | EC = elektrochemical sensor, NDIR = non-dispersive infrared spectroscopy

MRU – Competence in gas analysis. Since 1984.

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