

**Technical data**

Analyser:	robust housing with compact 19" insertion 3U; 483 mm x 133 mm x 350 mm (w x h x d), weight approx. 4.6 kg
Infrared photometer:	thermostatted
Analyser cabinet:	800 mm x 2100 mm x 600 mm (w x h x d), weight approx. 170 kg
Ambient temperature:	5...30 °C (with air conditioner 5...45°C)
Measuring methods:	- electrochemical cell (O ₂ , H ₂ S ^[1]) - infrared photometer (CO, CO ₂ , SO ₂ , NO, NO ₂ ^[1] , CH ₄ ^[1] , H ₂ O ^[1]) - paramagnetic measuring method ^[1] (O ₂)
Display/operating:	graphic display (LCD), 240 x 128 Pixel, background-lighted; menu-driven operating; display possibility in mg/m ³ , ppm and vol. %; languages: German, English; membrane keyboard
Accuracy:	< 2% of the respective measuring range
Zero point correction:	automatic
Sensitivity correction:	manual, with test gas; optional: automatic
Air pressure correction:	internal
Response time:	T ₉₀ < 180 s (depending on plant and chosen component)
Digital inputs:	8 inputs (optocoupler)
Digital outputs:	16 outputs, potential-free, 24 V DC with max. 0.4 A (max. 10 W); amongst others: - output signals for failure, maintenance, maintenance request, limit values, measuring range change-over, Autocal - control of automatic probe back purging - internal condensate annunciator for function "pump off" - dosing control of phosphoric acid (H ₃ PO ₄)
Analogue outputs:	5 active analogue outputs, 4...20 mA, potential-free, burden max. 500 Ohm
Service interface RS232:	for remote software, compatible for all Windows operating systems (XP or higher version): - visualisation of all data by intuitive user surface - data storage on PC in TXT format - loading/saving of all relevant configuration data
Power supply:	110 V AC, 230 V AC / 50-60 Hz, 40 W
Suitability test:	DIN EN 15267, QAL1, ID: 0000039321; DIN EN 15267-3, TA Luft, 13 th and 27 th BImSchV (as system part)
Optional:	- two separated gas paths - analyser-specific PC user software for visualisation, (remote) control and recording of data via RS232 interface

^[1] not part of the suitability test

Special models are possible on request.

**MGA 12**
Product Information

The multi gas analyser MGA 12 serves the continuous measurement of pollutants in flue gas (e.g. CO, CO₂, SO₂, NO) and the measurement of O₂ as well as the continuous process control.

The analyser device is suitability tested according to DIN EN 15267-3 and certified in compliance with QAL1. As a part of the analyser system MGA 12 it is suitability tested and certified for systems after "TA Luft", 13th and 27th BImSchV according to DIN EN 15267-3.

Application

The MGA 12 is applicable all-purpose for measurement of emissions, raw gases or processes. As system in regulatory emission measurement systems, amongst others, it serves the exhaust concentration control in combustion plants with different types of fuel, the combustion optimisation and the process and safety management control.

Application examples:

- power plants
- refineries
- cement industry
- industrial exhaust air
- coal bunkers

**Function**

In the MGA 12 three independent, selectively working measuring methods apply: infrared absorption, electrochemical cell and paramagnetic measuring method.

By the functional principle of infrared absorption up to five infrared gas components (e.g. CO, NO, SO₂, CO₂, NO₂^[1], CH₄^[1]) can be detected simultaneously. This spectroscopic method is based on the absorption of non-dispersive infrared radiation (NDIR photometry).

The measurement of O₂ can be made via paramagnetic^[1] or electrochemical method. Also the measurement of H₂S^[1] is carried out via one of two available electrochemical cells.

^[1] not part of the suitability test

Measuring ranges

Component	Measuring range 1	Measuring range 2
CO:	0...125 mg/m ³ (0...100 ppm)	0...1000 mg/m ³ (0...800 ppm)
CO ₂ :	0...20 vol. %	-
SO ₂ :	0...200 mg/m ³ (0...70 ppm)	0...1000 mg/m ³ (0...350 ppm)
NO:	0...300 mg/m ³ (0...225 ppm)	0...1000 mg/m ³ (0...750 ppm)
NO ₂ ^[1] :	0...200 mg/m ³ (0...95 ppm)	0...1000 mg/m ³ (0...485 ppm)
CH ₄ ^[1] :	0...300 mg/m ³ (0...420 ppm)	0...1000 mg/m ³ (0...1400 ppm)
H ₂ S ^{[1] [2]} :	0...75 mg/m ³ (0...50 ppm)	-
H ₂ O ^[1] :	0...3 vol. % ^[4]	-
O ₂ ^{[2] [3]} :	0...25 vol. %	-

^[1] not part of the suitability test

^[2] measurement via electrochemical cell

^[3] measurement via paramagnet^[1]

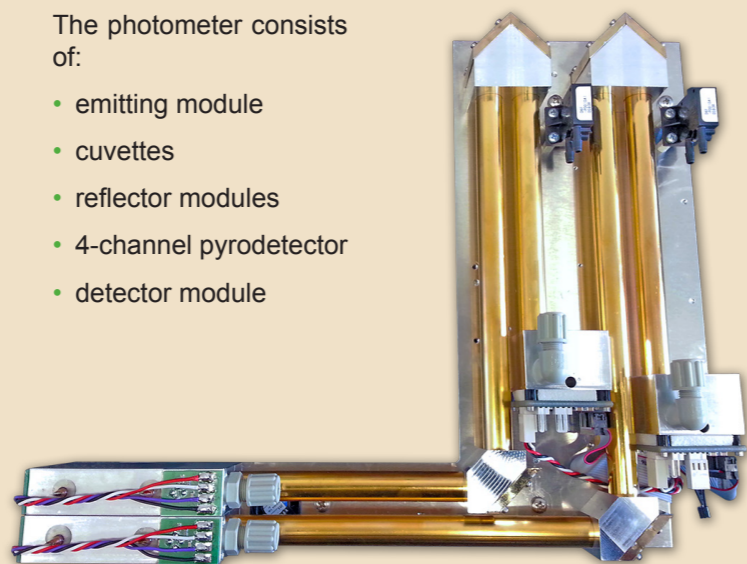
^[4] residual moisture after cooling unit

Photometer

- simultaneous measurement of four infrared gases as well as four other sensors
- free-selectable length of the measuring path with direction changes: 50 mm to 700 mm
- 4-channel pyrodetector with pre-amplifier electronics
- spectral range: 1 μm to 9 μm
- no mechanically moved parts
- power supply: 5 V DC
- power consumption in operation: approx. 20 W (at ambient temperature of 30 °C)

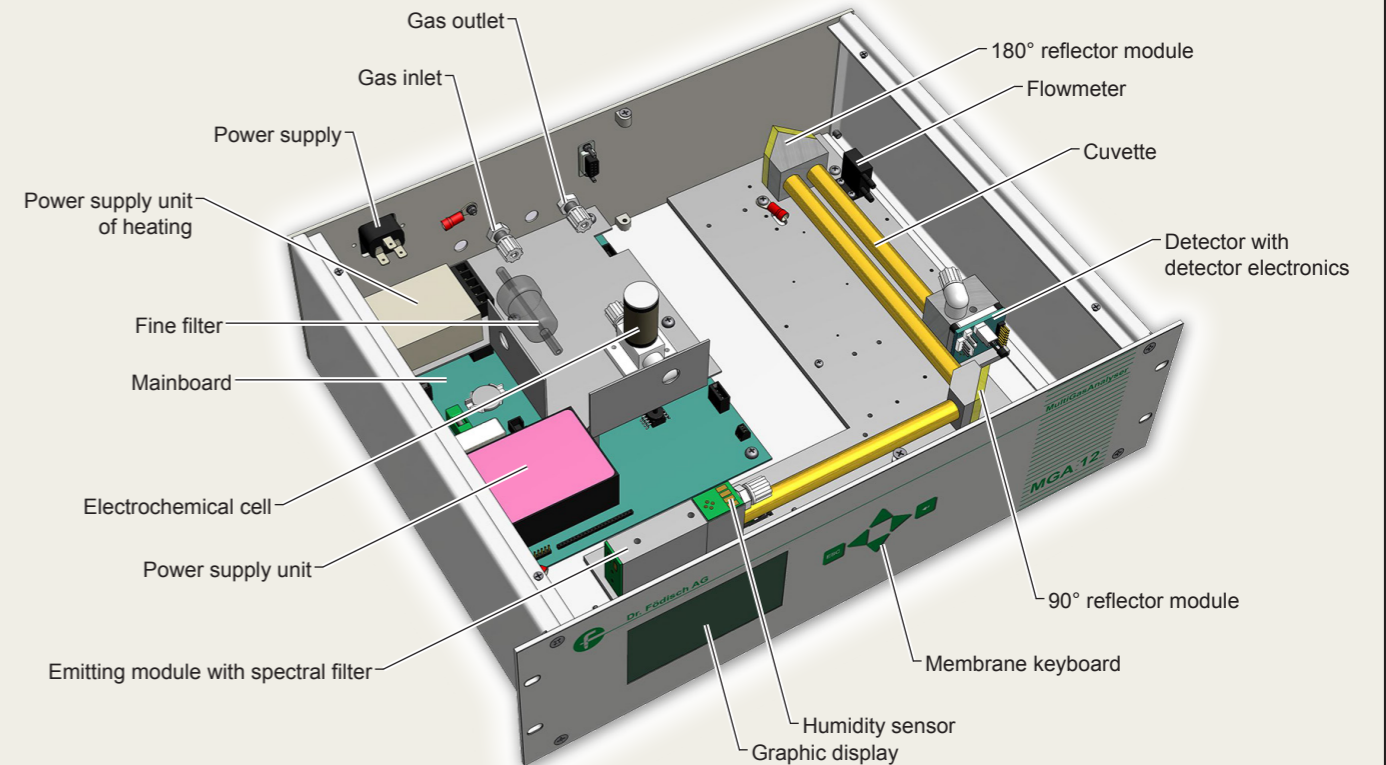
The photometer consists of:

- emitting module
- cuvettes
- reflector modules
- 4-channel pyrodetector
- detector module

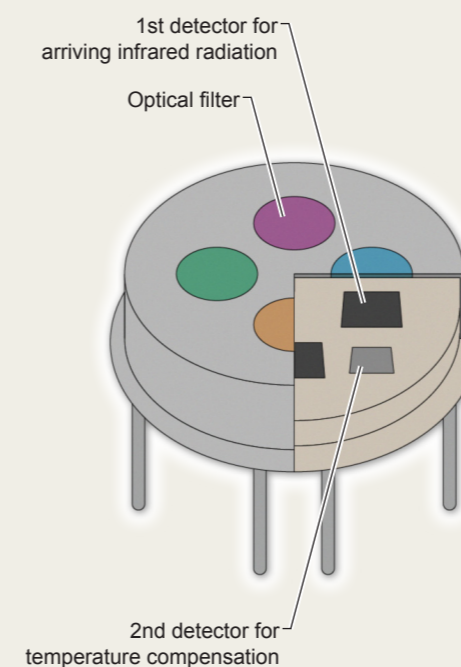


(dual bench as option)

Internal design



4-channel pyrodetector



Highlights of the device

- simultaneous measurement of up to five gas components with limit value signalling and measuring range change-over
- local diagnosis of the system state
- display of bar diagram for every component
- flow control as well as display of flow rate
- reduced cross-sensitivities by internal spectral filter
- internal monitoring for condensate ingress with switch contact for pump switch-off
- control of a back-purging probe (interval and pulse time)
- control of zero point drift
- low maintenance requirement
- first-class price-performance ratio