Technical data

Analyser

Housing:	steel sheet housing, 19" format, IP 40; 480 mm x 220 mm x 350 mm (w x h x d), weight approx. 28 kg
Measuring methods:	- bi-frequency measuring method (NO_2, SO_2, HF*, H_2O, CO_2) - gas filter correlation (CO, NO, HCl, NH_3, N_2O, CH_4) - zirconium dioxide cell (O_2)
Number of meas. components:	max. 12 infrared components (dependent on application) and oxygen
Accuracy:	< 2% of the respective measuring range
Zero point correction:	automatical
Sensitivity correction:	with test gas, once in 6 months
Cross-sensitivity correction:	additive, multiplicative
Air pressure correction:	yes
Standardisation:	dry, wet
Gas conveyance:	air-jet pump
Compressed-air connection:	1...4 bar
Display/operating:	PC connection via USB (e.g. to the control panel in the analyser cabinet)
Interfaces:	2 x RS232, USB
Power supply:	110 V bis 230 V, 50/60 Hz, 300 W
Photometer:	- spectral range: 1...16 µm - gas path: continuously heated, standard 185 °C (higher temperatures on request) - path length of measuring cell: adjustable 2...10 m - dead volume of measuring cell: < 1 l - particle filter: 2 µm

Analyser cabinet

Dimensions:	steel sheet cabinet, 800 mm x 2100 mm x 600 mm (w x h x d)
Weight:	approx. 200...300 kg (depending on fitments)
Display/operating:	integrated 15" control panel with touch surface, 1024 x 768 Pixel

System

Ambient temperature:	5...40 °C
Relative humidity:	max. 90% (non-condensing)
Compressed-air connection:	4...6 bar (dependent on application)
Compressed-air consumption:	approx. 1 m³/h (dependent on application)
Calibration:	- zero point: automatical with instrument air - span point: with test gas, optionally automatical
Interfaces:	analogue outputs, Modbus, Profibus, further on request
Inputs:	for analogue and digital signals
Digital outputs:	failure, maintenance, maintenance requirement, measuring range switch-over, other
Analogue output:	4 ... 20 mA
Remote control:	Ethernet, analogue modem
Power supply:	230 V or 400 V / 50 Hz, 4000 W (analyser cabinet, air conditioner, probe) + 100 W/m measuring gas pipe
Suitability test:	DIN EN 15267, QAL1, Cert.-No.: 1729865-ts; DIN EN 15267-3; certification: MCERTS, Cert.-No.: Sira MC140256/01; DIN EN 15267-3, TA Luft, 17th, 27th BImSchV (as system part)

Special models are possible on request.

* MCERTS certified according to DIN EN 15267-3

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MCA 10 HWIR
Product Information

The multi component analyser MCA 10 HWIR serves the continuous emission measurement of pollutants in flue gas (e.g. CO, NO, N_2O, NO_2, NH_3, CH_4, HCl, SO_2, HF*; as system additionally TOC) and the measurement of CO_2, H_2O and O_2 as well as the continuous process control.

The device is suitability tested according to DIN EN 15267-3 and certified in compliance with QAL1 as well as MCERTS Performance Standards. As a part of the analyser system MCA 10 HWIR it is suitability tested and certified for systems after "TA Luft", 17th and 27th BImSchV according to DIN EN 15267-3.

Application

The MCA 10 HWIR is applicable all-purpose for measurement of emissions, raw gases or processes. As system in regulatory and operational emission measurement systems, amongst others, it serves the exhaust concentration control in combustion plants with different types of fuel, the thermal waste treatment, the combustion optimisation and the process management control.

Application examples:

- Power plants
- Waste incineration plants
- Refineries
- Cement industry
- Industrial exhaust air
- Paper mills
- Glass industry
- Chemical industry

Function

By the functional principle of the multi component analyser MCA 10 HWIR up to twelve infrared gas components can be detected simultaneously. As measuring methods bi-frequency measuring method and gas filter correlation are applied. Optionally, an oxygen measurement via zirconium dioxide cell is possible.

The analyser evaluates internally all specification-depending required concentrations with all necessary compensations and standardisations. By a connected PC the visualisation and operating with device-own user software is executed. The operating surface is designed for one-click operating via touch function.

Optionally, the additional connections at the device can be used for connection of external devices (e.g. for measurement of total organic carbon or mercury).

Measuring ranges

| Component	Certification range	Measuring range 2	Measuring range 3
CO	0...75 mg/m³	0...300 mg/m³	0...5000 mg/m³
CO_2	0...25 vol. %	0...50 vol. %	-
NO	0...200 mg/m³	0...400 mg/m³	0...3000 mg/m³
NO_2	0...50 mg/m³	0...500 mg/m³	-
N_2O	0...50 mg/m³	0...3000 mg/m³	-
NH_3	0...10 mg/m³	0…50 mg/m³	0…500 mg/m³
SO_2	0...75 mg/m³	0...300 mg/m³	0...2500 mg/m³
HCl	0...15 mg/m³	0...90 mg/m³	0...5000 mg/m³
HF*	-	0...20 mg/m³	-
H_2O	0...40 vol. %	-	-
CH_4	0...50 mg/m³	0...500 mg/m³	-
TOC	0...15 mg/m³	0...30 mg/m³	-
O_2	0...25 vol. %	-	-

Measuring methods

Bi-frequency measuring method
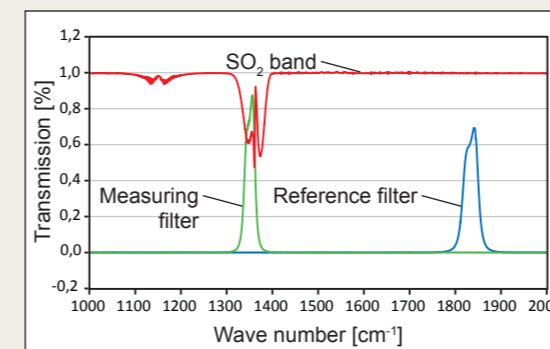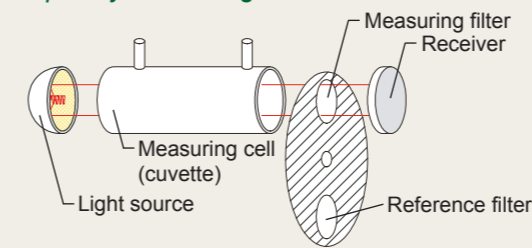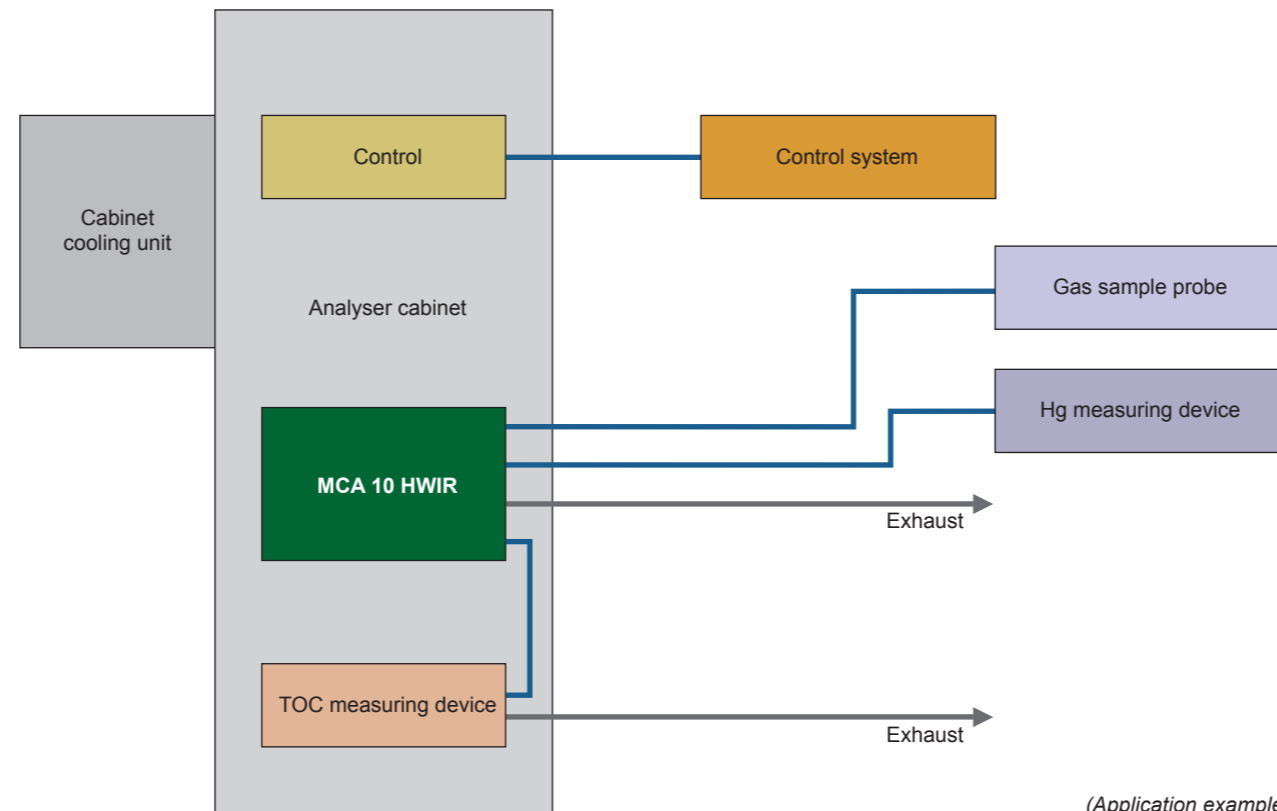

Gas filter correlation
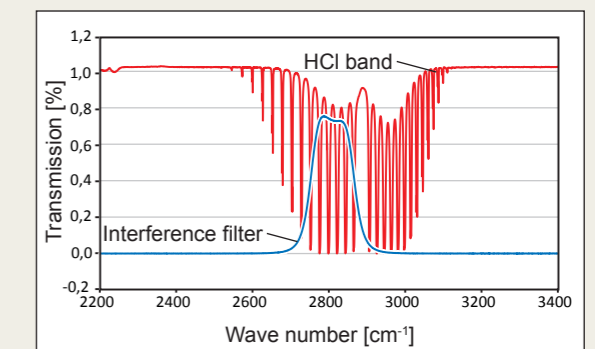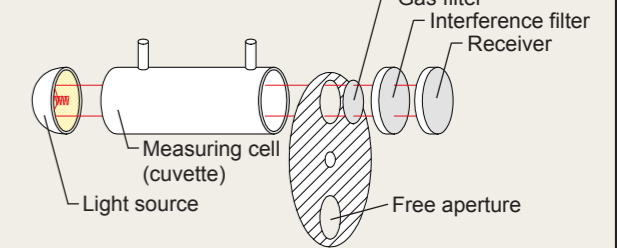
Design of CPU components
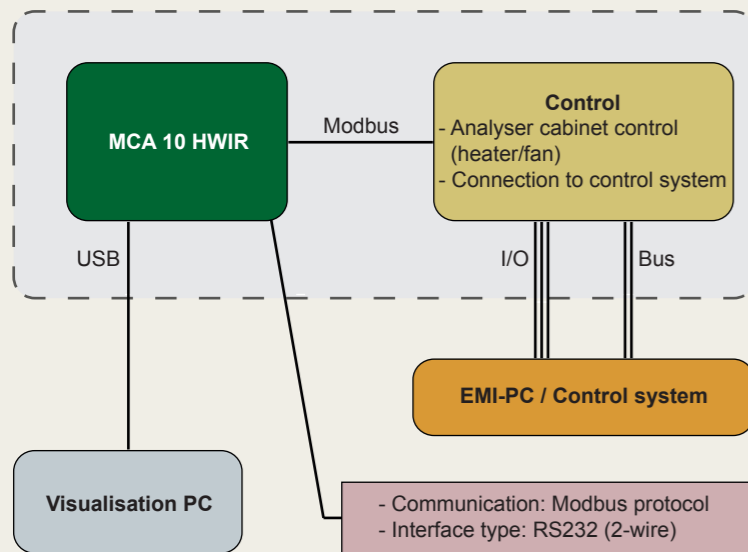
The system design consists basically of three logic units:

- Multi component analyser MCA 10 HWIR
- Visualisation PC with user software
- PLC control for analyser cabinet

System design

(Application example)

Highlights of the device

- modularly structured hot gas analyser system (without gas cooler)
- continuous, extractive measurement of up to twelve infrared components
- field-proven components, modern photometer technology
- long operation times, high reliability
- compact 19" insertion of the analyser → easy mounting
- easy system design
- pre-calibrated → immediately deployable
- integrated control
- integrated zero gas provision
- self control (additional control of inlet temperature)
- zero point drift control
- remote diagnosis and system setting via Ethernet
- first-class price-performance ratio