

**Technical data**

Housing:	mobile housing with carrying handles
Dimensions:	536 mm x 453 mm x 480 mm (w x h x d)
Weight:	from 46 kg (depending on fitments)
Protection degree:	in case of closed housing cover: IP 54 in case of opened housing cover: IP 31
Measuring methods:	- bi-frequency measuring method (NO <sub>2</sub> , SO <sub>2</sub> , H <sub>2</sub> O, CO <sub>2</sub> , HF) - gas filter correlation (CO, NO, HCl, NH <sub>3</sub> , N <sub>2</sub> O, CH <sub>4</sub> ) - zirconium dioxide cell (O <sub>2</sub> )
Number of measuring components:	max. 12 infrared components (dependent on application) and oxygen
Ambient temperature:	operation: 5...40 °C (temperature stability max. ± 5 °C) storage: 5...35 °C (temperature stability max. ± 3 °C)
Relative humidity:	max. 90% (non-condensing)
Accuracy:	< 2% of the respective measuring range
Zero point correction:	automatical with instrument air
Sensitivity correction:	with test gas, once in 6 months (sensitivity tests as standard with a concentration of 80% of the measuring range)
Cross-sensitivity correction:	additive, multiplicative
Air pressure correction:	yes
Standardisation:	dry, wet
Gas conveyance:	injector
Media temperature:	max. 200 °C
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
Display/operating:	user software (MCA10m_HID.exe) via USB connection
Data storage:	SSD, data logger function via tablet/ PC
Interfaces:	USB, other optional
Inputs/outputs:	optional
Controller outputs/ maximal power:	controller of probe: max. 800 W controller of measuring gas pipe: max. 1000 W
Power consumption:	400 W
Power supply:	230 V AC, 50 Hz (optional: 115 V AC, 60 Hz), max. 2500 W (dependent on periphery)

*Special models are possible on request.***MCA 10 m**  
Product Information

The mobile multi component analyser MCA 10 m is an extractive, continuous measuring system. It serves the continuous emission measurement of pollutants in flue gas (e.g. CO, NO, N<sub>2</sub>O, NO<sub>2</sub>, NH<sub>3</sub>, CH<sub>4</sub>, HCl, SO<sub>2</sub>, HF) and the measurement of CO<sub>2</sub>, H<sub>2</sub>O and O<sub>2</sub> as well as the continuous process control.

**Application**

The mobile MCA 10 m is applicable all-purpose for measurement of emissions, raw gases or processes. In 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 MCA 10 m 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. The mainboard is responsible for all tasks of photometer control, sensor evaluation, concentration calculation and interface communication. The zero point setting is done fully-automatic with instrument air.

Via USB connection the measuring values are transferred to the delivered PC software. Optionally, the measuring values are provided via Modbus or mA loops at the 25-terminal connector mounted at the front side. By dint of a tablet or PC the visualisation and operating is executed by device-own user software. The operating surface is designed for one-click operating via touch function.



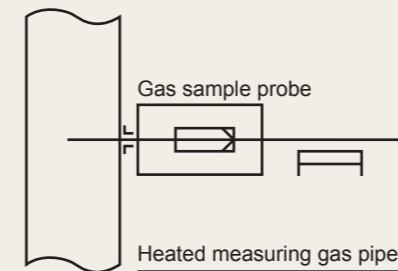
### Measuring ranges

Component	Measuring range 1	Measuring range 2	Measuring range 3
CO	0...75 mg/m <sup>3</sup>	0...300 mg/m <sup>3</sup>	0...5000 mg/m <sup>3</sup>
CO <sub>2</sub>	0...25 vol. %	0...50 vol. %	-
NO	0...200 mg/m <sup>3</sup>	0...400 mg/m <sup>3</sup>	0...3000 mg/m <sup>3</sup>
NO <sub>2</sub>	0...50 mg/m <sup>3</sup>	0...500 mg/m <sup>3</sup>	-
N <sub>2</sub> O	0...50 mg/m <sup>3</sup>	0...3000 mg/m <sup>3</sup>	-
NH <sub>3</sub>	0...10 mg/m <sup>3</sup>	0...50 mg/m <sup>3</sup>	0...500 mg/m <sup>3</sup>
SO <sub>2</sub>	0...75 mg/m <sup>3</sup>	0...300 mg/m <sup>3</sup>	0...2500 mg/m <sup>3</sup>
HCl	0...15 mg/m <sup>3</sup>	0...90 mg/m <sup>3</sup>	0...5000 mg/m <sup>3</sup>
HF	-	0...20 mg/m <sup>3</sup>	-
H <sub>2</sub> O	0...40 vol. %	-	-
CH <sub>4</sub>	0...50 mg/m <sup>3</sup>	0...500 mg/m <sup>3</sup>	-
O <sub>2</sub>	0...25 vol. %	-	-

### System design

Power supply 230 V AC, 50 Hz

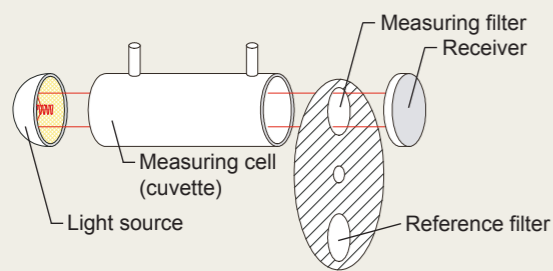
Signals (optional)



### Measuring methods

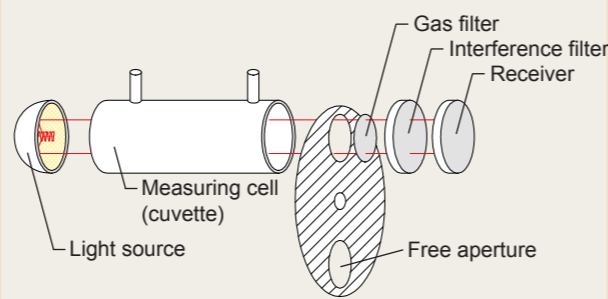
#### Bi-frequency measuring method

At bi-frequency measuring method a measuring filter and subsequently a reference filter are directed into the light path. Thereby the transmission range of the measuring filter lies in the range of the absorption wave length of the measuring component. The transmission range of the reference filter lies in the spectral range outside of the absorption wave length of the measuring component. So the light intensities with and without gas influence can be determined successively.



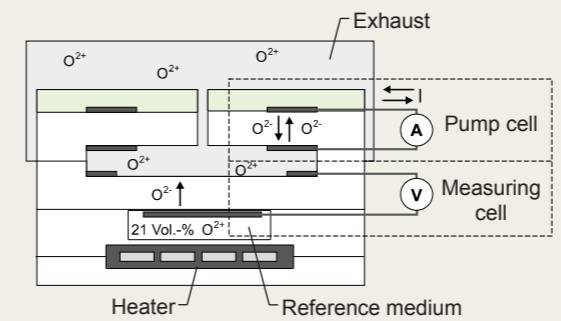
#### Gas filter correlation

At gas filter correlation the spectral sphere of action of the reference filter is identical with the one of the measuring gas filter. The reference filter position possesses an additional gas filter which is filled with a high concentration of the gas to be measured in order to reach the saturation of the infrared absorption. Thereby the substance-specific spectrum of the infrared light is almost completely faded out.



#### Zirconium dioxide cell

The oxygen measurement is carried out by means of a zirconium dioxide cell. Inside the cell the measuring gas is separated from the reference gas (ambient air) via a zirconium membrane. Depending on the oxygen partial pressure the oxygen ions move through the membrane. This results in an electric potential difference. The pump cell provides a constant oxygen concentration in the measuring cell. The thereby spent energy is a degree for the oxygen concentration.



### Highlights of the device

- mobile hot gas analyser system (without gas cooler)
- continuous, extractive measurement of up to twelve infrared components and oxygen
- field-proven components, modern photometer technology
- long operation times, high reliability
- easy placement directly at the measuring point
- pre-calibrated → immediately deployable
- integrated control
- integrated zero gas provision
- self control (additional control of inlet temperature)
- visualisation via integrated tablet, with data logger function
- first-class price-performance ratio