



cem solutions
CONTINUOUS EMISSIONS MONITORING

UK wide service, supply and repair of emissions
and process monitoring equipment

MCA 10

Multi Component Analyser

in partnership with



Dr. Födisch
Umweltmesstechnik AG

www.cemsolutions.co.uk

PRODUCT INFORMATION

The multi-component MCA10 analyser provides continuous emissions measurements of pollutants in flue gas. Species measured include, but are not limited to: CO, NO, NO₂, HCL, HF, NH₃, SO₂ and O₂. Additionally, a fully integrated TOC measurement can also be realised, as can CO₂ and N₂O components, to satisfy the latest monitoring requirements.

The device is tested and certified in compliance with QAL1 as well as MCERTS.

The analyser is a Hot Wet Infrared device (HWIR) which also utilises zirconia and FID technologies to provide the full suite of required gaseous measurements to satisfy many regulatory requirements. Furthermore, it has some of the lowest certified ranges available and a very rugged construction, making it uniquely suitable for applications ranging from aggressive Raw Gas measurements to low level NO_x for Gas Turbines.

TECHNOLOGY

The MCA10 HWIR can measure up to 12 infra-red gas components simultaneously using bi-frequency and gas filter correlation techniques.

O₂ is available as a fully integrated measurement using a zirconia cell and TOC via a separate integrated FID analyser. The analyser internally evaluates all required concentrations and compensations. A door-mounted HMI enables full visualisation of all measurements as well as control and configuration of the device.

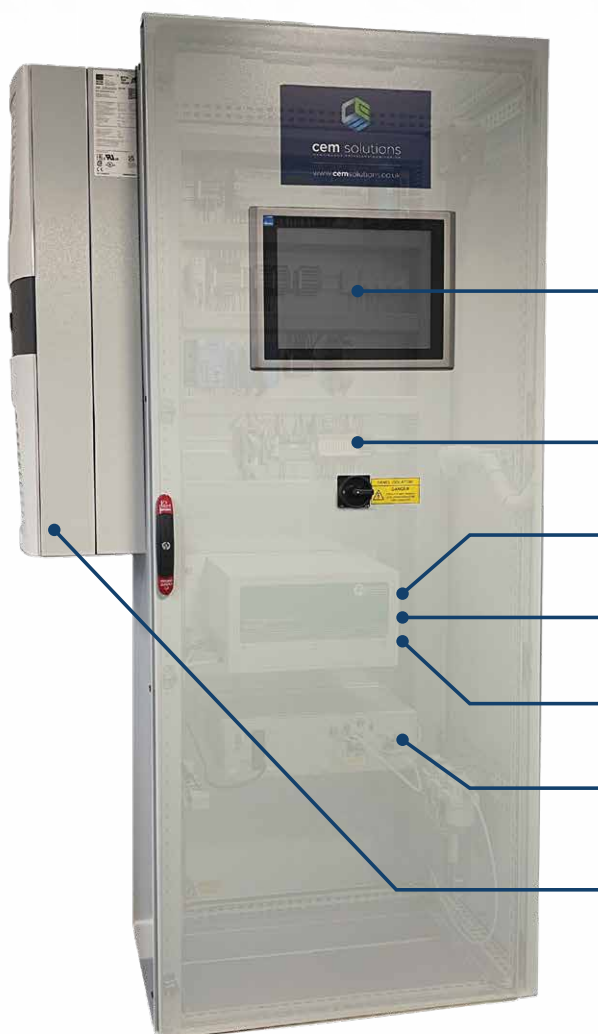
Integration of external devices (for example flow, Hg, dust) are all possible, as well as set-up and control of QAL 3 calibrations.

Outputs are available to suit most demands.



APPLICATION EXAMPLES:

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



HMI

Control system

Gas Sample Probe Connection

MCA 10 HWIR

Mercury Analyser Connection

FID / TOC

Air Conditioning Unit



Dr. Födisch

Umweltmesstechnik AG



Features & Benefits

- Modularly structured hot gas analyser system (without 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
- Integrated control system (additional control of inlet temperature)
- Zero point drift control
- Remote diagnosis and system setting via Ethernet
- First-class price-performance ratio



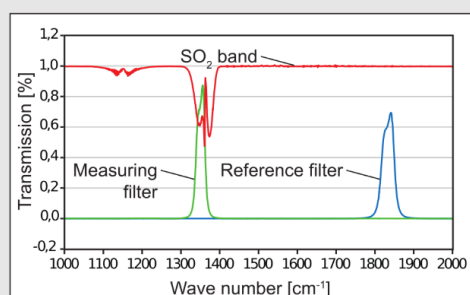
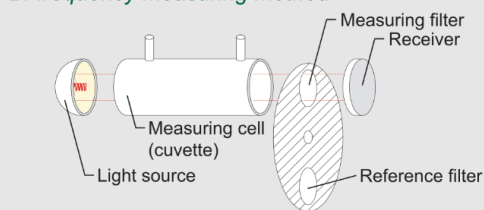
Measuring ranges

Component	Certification range	Measuring range 2	Measuring range 3
CO	0...75 mg/m ³	0...300 mg/m ³	0...5000 mg/m ³
CO ₂	0...25 vol. %	0...50 vol. %	-
NO	0...80 mg/m ³	0...400 mg/m ³	0...3000 mg/m ³
NO ₂	0...50 mg/m ³	0...500 mg/m ³	-
N ₂ O	0...50 mg/m ³	0...3000 mg/m ³	-
NH ₃	0...10 mg/m ³	0...50 mg/m ³	0...500 mg/m ³
SO ₂	0...75 mg/m ³	0...300 mg/m ³	0...2500 mg/m ³
HCl	0...15 mg/m ³	0...90 mg/m ³	0...5000 mg/m ³
HF*	-	0...20 mg/m ³	-
H ₂ O	0...40 vol. %	-	-
CH ₄	0...50 mg/m ³	0...500 mg/m ³	-
TOC	0...15 mg/m ³	0...30 mg/m ³	0...500 mg/m ³
O ₂	0...25 vol. %	-	-

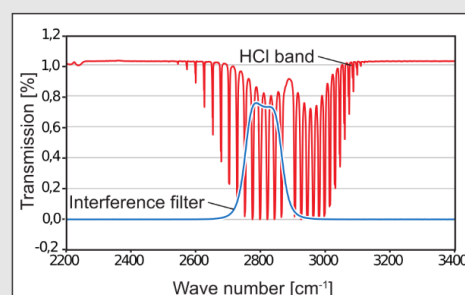
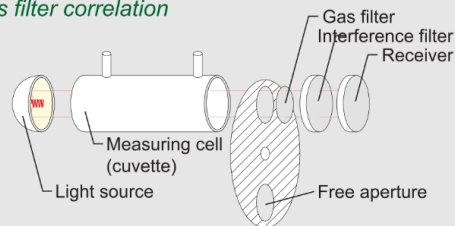
The **MCA 10 HWIR** is suitable for process, raw gas or compliance emissions measurements. This will monitor combustion products from different types of fuel for example thermal waste treatment, enabling close control of the plant and optimisation of efficiency.

Measuring Methods

Bi-frequency measuring method



Gas filter correlation





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 ₂ O, CO ₂) - gas filter correlation (CO, NO, HCl, NH ₃ , N ₂ O, 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:	automatic
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:	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: automatic with instrument air - span point: with test gas, optionally automatic
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 consumption:	350 W
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, 17 th , 27 th BImSchV (as system part)

Special models are possible on request.

** not suitability tested according to DIN EN 15267-3; certified in compliance with MCERTS Performance Standards*

