



## Gas Analyzers and Analysis Systems

**Measurement Technology Tailored to Your Needs –  
for Efficient Process Control and Precise Emission Monitoring**

# Industry solutions from SICK MAIHAK: From single-component analyzers to turnkey analysis systems

**Practice-oriented solutions using our gas analyzers and tailored to the requirements of individual branches of industry realize the widest range of measuring tasks, worldwide.**

Single measuring devices or complete analysis systems – from process control to emission monitoring – SICK MAIHAK stands for sophisticated in-situ and extractive measuring technology. Applications in cement, steel or power generating plants or also in the chemical industry – different requirements demand adaptability on the basis of specifications (EU, EPA or GOST). The industry solutions from SICK MAIHAK comply with legal specifications, are adapted to the respective plant conditions and provide maximum flexibility in gas analysis.

In addition, a comprehensive selection of accessories is available – from the single, unheated sampling probe, the

applicable gas conditioning up to the complete gas extraction system for very high temperatures and dust loads.

SICK MAIHAK – this means:

- High-quality measuring systems for gas analysis as well as emission data evaluation systems
- Reliable measurement of dust and volume flow
- Tailored applications with in-situ and extractive measuring technology
- Complete projects – from basic engineering to after-sales service
- Top technological quality
- Measuring principles proven over many years

## EMISSION MONITORING



### **Pollutant reduction, meeting limit values, compliance with environmental regulations**

Pollutants in exhaust gases must be determined online and with precision. Official and company-internal requirements are complied with reliably and with reasonable effort. For this purpose, we offer analyzers with approvals according to European Directives, for example, the 2001/80/EC, 2000/76/EC as well as EPA or GOST certification.

## CEMENT INDUSTRY



### **Production process optimization with gas analysis, reliable electric filter monitoring**

In cement works, continuously measuring analyzers are required in many stages of the production process, whether for process optimization, saving energy or safety monitoring. The operational reliability of the SICK MAIHAK analysis systems is maintained even at high temperatures.



## POWER PLANTS



### Efficient flue gas monitoring, effective denitrification process control and combustion process optimization

For optimum operation of a power plant – from the coal bunker to flue gas evacuation to the atmosphere – the concentration of gas components must be monitored. Coal combustion not only creates solid residues (slags, ashes) and dust but, above all, gaseous compounds demanding continuous concentration determination.

Typical applications:

DeNOx denitrification plant, flue gas desulphurization plant, emission monitoring, optimization of combustion processes (CO, CO<sub>2</sub>, O<sub>2</sub>)

## CHEMICAL INDUSTRY



### Flexible analysis device adaptation to the respective process

This branch of the industry is characterized by complex process engineering, a high degree of automation and a great variety of products. Chemical production processes require safe procedures on the basis of sophisticated and reliable technologies. Very specific adaptation of the analytics to the measuring task is an integral part of these processes.

Typical applications:

Production of sulphuric acid, nitric acid, phosphoric acid, in the glass industry and production of synthetics

## THERMAL WASTE TREATMENT



### Compliance with strict limit values

In many countries, thermal waste treatment plants are subject to strict emission regulations. Suitable measures (flue gas purification) and sturdy measuring technology have to ensure that pollutants in the plant exhaust gas do not exceed allowed limit values.

Typical applications:

Analysis of CO, SO<sub>2</sub>, NO<sub>2</sub>, HCl, HF, mercury emissions, flue gas purification, VOC

## METALLURGY



### Reliable gas concentration monitoring and continuous pollutant emission acquisition

In iron and steel production, the analysis of furnace gas or reformer gas is important. In addition to process gas monitoring, safety monitoring (CO measurement, inertization) and pollutant emission control play an important role.

Typical applications:

Oxygen furnace, ore calcination (metallurgy), HF monitoring (aluminium production), inertization of metal mills

# The correct answer to complex requirements

To adapt to different plant conditions or to solve complex measuring tasks, we have the answer:

**In-situ and/or extractive measurement by SICK MAIHAK**

### Adapted technology:

- Cross-duct technology: Representative measuring results across the complete channel cross-section
- Probe technology: For complicated measuring tasks, for example overpressure, "wet" gases or very high sample gas concentrations

### Tailor-made service:

We provide complete service – ranging from project planning and implementation of analysis equipment up to walk-in, turnkey containers. SICK MAIHAK is represented worldwide with technical competence for planning, installation, start-up and maintenance of measuring devices and systems. This makes SICK MAIHAK a competent local partner for users in every aspect.

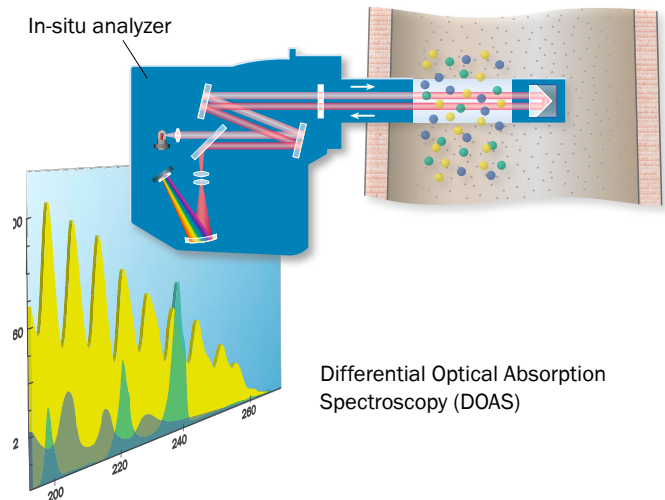


## IN-SITU MEASURING TECHNOLOGY

For quick gas analysis, analyzers are available as complete devices to determine the sample gas components "in-situ", i.e. directly at the measuring location.

The following measuring principles are used, among others:

- UV spectrometry (DOAS)
- IR filter correlation
- Laser spectroscopy (TDLS)
- Zirconium dioxide measuring principle



In-situ analyzer in probe design

### Advantages of in-situ measuring technology

- No sampling
- Continuous, direct measurement without lag times in processes
- Very low reaction times
- Very low maintenance effort
- Representative measurement – using cross-duct technology across the complete channel cross-section
- QAL3 function according to DIN EN14181

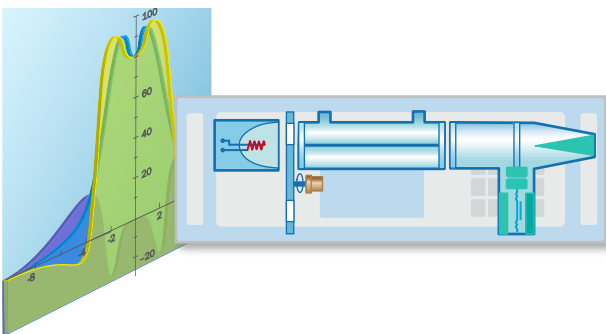


## EXTRACTIVE MEASUREMENT

With extractive gas analysis, the analyzers identify numerous gas components, for example SO<sub>2</sub>, NO, NO<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>, HCl, HF, NH<sub>3</sub>, H<sub>2</sub>O, mercury, hydrocarbons, and total carbon.

The following measuring principles are used:

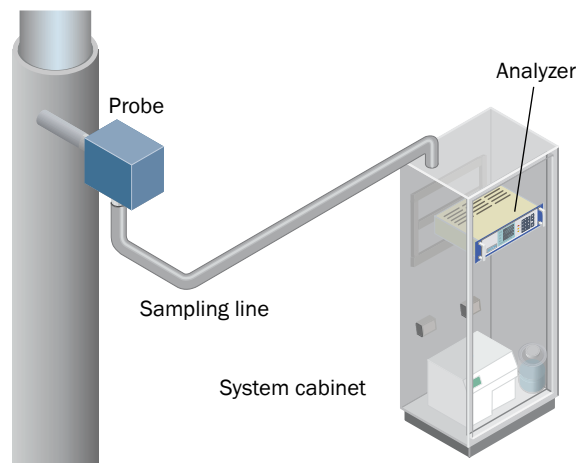
- NDIR and UV photometry
- Flame ionization detection
- FTIR spectroscopy
- Paramagnetic, electrochemical principles
- Single-beam bifrequency process (filter correlation)
- Cold-vapor atomic absorption spectroscopy



Extractive analyzer on the basis of the NDIR principle

## ANALYSIS SYSTEMS

Apart from our versatile product range with individual and multicomponent analysis systems, we also offer comprehensive application experience in different industries. Tailor-made concepts are available in addition to standard solutions. Each proposal is oriented to the local requirements and situations. Here we develop specific solutions – precise, fast and cost-efficient. Above and beyond the system components, we plan complete gas analysis systems, for example turnkey analysis cabinets including all peripheral equipment.



Extractive analysis system

### Advantages of extractive measurement

- Optimal analyzer configuration options for versatile applications
- Adapted solutions due to a multitude of measuring components
- Precise measuring results through proven measuring principles
- Detection of aggressive, corrosive or combustible gases
- QAL3 function according to DIN EN14181

### Advantages of the systems

- Efficient standard systems for emission-typical applications
- Systems configured according to customer specifications for many process applications
- Simple retrofitting, simple installation and start-up
- Compact and sturdy design
- QAL3 function according to DIN EN14181

## Gas analyzers multicomponents



TECHNICAL DATA	S700 SERIES NDIR GAS ANALYZER 4 COMPONENTS MAX.	SIDOR NDIR GAS ANALYZER 2 IR COMPONENTS PLUS O <sub>2</sub>
Measuring principle	<b>NDIR absorption</b> <b>Paramagnetic/electrochemical (O<sub>2</sub>)</b> <b>Interference filter correlation</b> <b>Thermal conductivity</b>	<b>NDIR absorption</b> <b>Paramagnetic/electrochemical (O<sub>2</sub>)</b>
Measuring components	CO, CO <sub>2</sub> , SO <sub>2</sub> , NO, NH <sub>3</sub> , H <sub>2</sub> O, N <sub>2</sub> O, CH <sub>4</sub> , C <sub>2</sub> H <sub>2</sub> , C <sub>2</sub> H <sub>4</sub> , C <sub>2</sub> , H <sub>6</sub> , C <sub>3</sub> H <sub>6</sub> , C <sub>3</sub> H <sub>8</sub> , C <sub>4</sub> H <sub>6</sub> , C <sub>4</sub> H <sub>10</sub> , C <sub>6</sub> H <sub>14</sub> , O <sub>2</sub> and many more	CH <sub>4</sub> , CO, CO <sub>2</sub> , NO, SO <sub>2</sub> , O <sub>2</sub>
Measuring task	Emission and process monitoring  Standard equipment with up to 3 analyzer modules possible. 6 different analyzer modules are available for analyzing more than 60 gas components.  Single or simultaneous measurement of up to 4 components	Emission and operational applications Combustion optimization of small boilers  Single or simultaneous measurement of up to 2 IR gas components and, additionally, oxygen using auxiliary modules  Landfill and biogas monitoring (ATEX)
Advantages	<ul style="list-style-type: none"> <li>Extremely compact analyzer</li> <li>Explosion-protected version optional</li> <li>Fully automatic measuring mode</li> <li>Low maintenance, easy to use</li> <li>Flexible configuration options through a variety of analog/digital interfaces</li> <li>Monitoring of external status signals</li> </ul>	<ul style="list-style-type: none"> <li>Low test gas consumption (feeding &gt; 6 months) with a long term stable measuring cell</li> <li>High selectivity and measuring sensitivity</li> <li>Automatic readjustment with component-free ambient air</li> <li>Simple maintenance, can be repaired locally</li> <li>High availability by local service</li> </ul>
Compliance, regulations	TA Luft, 2001/80/EC, 2000/76/EC, 27 <sup>th</sup> FICA (Federal Immission Control Act), MCERTS, GOST	TA Luft, 2001/80/EC, 27 <sup>th</sup> FICA (Federal Immission Control Act), ATEX type certificate for measuring CH <sub>4</sub> , CO <sub>2</sub> and O <sub>2</sub>
<b>Measuring location</b>		
Model	<ul style="list-style-type: none"> <li>Enclosure S710: Comfortable 19" housing, easy to handle</li> <li>Enclosure S715: Easy to install wall housing, also for usage in explosion zone 2</li> <li>Enclosure S720 Ex: Pressurized housing for usage in explosion zone 1</li> </ul>	<ul style="list-style-type: none"> <li>Comfortable 19" mounting</li> </ul>
Maintenance, repairs	<ul style="list-style-type: none"> <li>With filter cuvette (option), calibration possible (only IR)</li> <li>Low effort</li> <li>Able to fulfill QAL3 regulation</li> </ul>	<ul style="list-style-type: none"> <li>Calibration possible with ambient air, test gases required only every half year</li> <li>Low effort</li> <li>Able to fulfill QAL3 regulation</li> </ul>
Cleaning	Simple housing care	Simple housing care



MCS100 MULTICOMPONENT ANALYZER	GM35 MULTICOMPONENT ANALYZER	GM31 MULTICOMPONENT ANALYZER
<b>Single-beam photometry Bifrequency and gas filter correlation</b>	<b>Filter correlation (IR) Gas filter correlation</b>	<b>Transmission UV spectroscopy (differential optical absorption spectroscopy)</b>
UV/VIS/(N)IR absorbing gases and liquids	CO, CO <sub>2</sub> , H <sub>2</sub> O pressure, temperature	SO <sub>2</sub> , NO, NH <sub>3</sub> respectively NO <sub>2</sub> pressure, temperature
Process analysis of gases/liquids under harsh conditions  Up to 8 measuring components can be measured and 4 disturbance variables per component can be offset simultaneously	For economic control of combustion processes and drying plants as well as emission monitoring  Simultaneous or single measurements	For emission measurement in flue gas desulphurization and denitrification plants  Simultaneous or single measurements
<ul style="list-style-type: none"> <li>• Cost-effective, very sturdy single-beam photometer</li> <li>• Automatic correction of disturbance variables</li> <li>• Automatic measuring range switch-over with limit monitoring</li> <li>• Automatic sensitivity monitoring</li> <li>• Flexible to use for sophisticated tasks</li> </ul>	<ul style="list-style-type: none"> <li>• Reliable, rapid and efficient</li> <li>• Easy to install, start-up and maintain</li> <li>• Internal temperature measurement</li> <li>• Calculated value output (mg/m<sup>3</sup> in operating/standard state, ppm)</li> </ul>	<ul style="list-style-type: none"> <li>• Reliable, rapid and efficient</li> <li>• Easy to install, start-up and maintain</li> <li>• Internal temperature measurement</li> <li>• Calculated value output (mg/m<sup>3</sup> in operating/standard state, ppm)</li> </ul>
EN 61010-1, EN 61326	TA Luft, 2001/80/EC, 2000/76/EC, MCERTS, GOST, U.S. EPA	TA Luft, 2001/80/EC, 2000/76/EC, MCERTS, GOST, U.S. EPA, Kaitec
<ul style="list-style-type: none"> <li>• Extractive modular system</li> </ul>	<ul style="list-style-type: none"> <li>• Configuration with probe: Installation from one side</li> <li>• Cross-duct configuration: Installation from both sides (opposite each other)</li> </ul>	<ul style="list-style-type: none"> <li>• Probe configuration: Installation from one side</li> </ul>
<ul style="list-style-type: none"> <li>• Low effort</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum maintenance effort</li> <li>• Able to fulfill QAL3 regulation</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum maintenance effort</li> <li>• Able to fulfill QAL3 regulation</li> </ul>
Simple housing care	Cleaning of optical windows only: Intervals approx. 3 to 6 months	Cleaning of optical windows only: Intervals approx. 3 to 6 months

## Gas analyzers single components



TECHNICAL DATA	GM700 LASER ANALYZER	ZIRKOR302 OXYGEN ANALYZER	EUROFID TOTAL HYDROCARBON ANALYZER
Measuring principle	Laser spectroscopy (TDLS)	Zirconium dioxide (current sensor)	Flame ionization detector
Measuring components	NH <sub>3</sub> , HF, HCl, O <sub>2</sub> pressure, temperature	O <sub>2</sub>	Total hydrocarbon (org. C)
Measuring task	Rapid process analysis and emission monitoring  Also available in a configuration for the automotive industry for O <sub>2</sub> or NH <sub>3</sub> measurement	Optimizing industrial combustion processes and calculation of reference values	Continuous measurement of organic compounds in corrosive and condensing gases  Usable for process temperatures up to 600 °C as well as in trace concentrations up to 100 percent by volume
Advantages	<ul style="list-style-type: none"> <li>• Compact system without moving parts</li> <li>• High spectral resolution</li> <li>• Wave length stability</li> <li>• No calibration necessary</li> <li>• Gas test possible (with gas diffusion probe)</li> </ul>	<ul style="list-style-type: none"> <li>• Extendable: Up to three O<sub>2</sub> analyzers can be connected to one evaluation unit</li> <li>• Short response time for process control</li> <li>• Air as reference gas</li> <li>• No mechanical sample gas pump necessary</li> <li>• Temperatures up to 1400 °C</li> </ul>	<ul style="list-style-type: none"> <li>• No wear and tear due to moving parts</li> <li>• Integrated sample gas dilution</li> <li>• Overpressure method for minimum errors</li> <li>• Explosion protected version zone 1, EU type approval for LEL monitoring</li> </ul>
Compliance, regulations	2000/76/EC in preparation (HF, HCl)	TA Luft, 2001/80/EC, 2000/76/EC, MCERTS, GOST, U.S. EPA	TA Luft, 2000/76/EC, MCERTS, ATEX
<b>Measuring location</b>			
Model	<ul style="list-style-type: none"> <li>• Configuration with probe: Installation from one side</li> <li>• Cross-duct configuration: Installation from both sides (opposite each other)</li> </ul>	<ul style="list-style-type: none"> <li>• Probe configuration: Installation from one side</li> </ul>	<ul style="list-style-type: none"> <li>• Wall fitting configuration for plate assembly</li> <li>• Inline configuration for direct channel installation</li> </ul>
Maintenance, repairs	<ul style="list-style-type: none"> <li>• Minimum maintenance effort</li> <li>• QAL3 function in preparation</li> </ul>	<ul style="list-style-type: none"> <li>• Very low effort</li> <li>• No expandable materials</li> <li>• Able to fulfill QAL3 regulation</li> </ul>	<ul style="list-style-type: none"> <li>• Low effort (replacement of gas filter)</li> <li>• Able to fulfill QAL3 regulation</li> </ul>
Cleaning	Cleaning of optical windows only: Intervals of approx. 3 to 6 months	Intervals approx. 3 to 6 months	Simple housing care





FID3006 PORTABLE TOTAL HYDROCARBON ANALYZER	GM901 CARBON MONOXIDE ANALYZER	GM950 RAPID, REDUNDANT CO MEASURING SYSTEM
<b>Flame ionization detector</b>	<b>Gas filter correlation</b>	<b>Zirconium dioxide with electrical cell</b>
Total hydrocarbon (org. C)	CO	CO (equivalent): $CO_e = CO + H_2 + C_xH_y$
<p>Flexible use for measuring organic substances</p> <p>Compact, portable unit for flexible use. Measurement of organic substances even at measuring points difficult to access.</p>	<p>Monitoring of combustion plants</p> <p>For difficult measuring tasks (high dust loads, overpressure, "wet" flue gases, extremely high gas concentrations)</p>	<p>Detection of unburned components in exhaust gases.</p> <p>Monitoring electric filters for high CO values</p>
<ul style="list-style-type: none"> <li>• Automatic fuel gas switch-off when flame extinguishes</li> <li>• Precise measurement through patented analysis chamber</li> <li>• Low fuel gas consumption</li> <li>• Low operational costs</li> <li>• Short warming up time</li> </ul>	<ul style="list-style-type: none"> <li>• Fast and simple installation and start-up</li> <li>• Simple operation directly on the evaluation unit</li> <li>• Measured value, measuring range and limit value can be read off directly</li> <li>• Very low maintenance requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Very short reaction time (<math>t_{90} &lt; 2</math> sec.)</li> <li>• Usage for dust loads up to 200 g/m<sup>3</sup> and gas temperatures up to 500 °C</li> <li>• High availability through redundant sensors</li> <li>• Maintenance of single system components during measuring operation possible</li> </ul>
TA Luft, 2 <sup>nd</sup> FICA (Federal Immission Control Act), 2000/76/EC, MCERTS, UL, CSA	GOST, U.S. EPA (measuring probe configuration)	Inline measurement direct at measurement location
<ul style="list-style-type: none"> <li>• No mounting – mobile device</li> </ul>	<ul style="list-style-type: none"> <li>• Configuration with probe: Installation from one side</li> <li>• Cross-duct configuration: Installation from both sides (opposite each other)</li> </ul>	
<ul style="list-style-type: none"> <li>• Low effort (replacement of gas filter)</li> <li>• Able to fulfill QAL3 regulation</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum maintenance effort</li> </ul>	<ul style="list-style-type: none"> <li>• Low effort</li> </ul>
Simple housing care	Cleaning of optical windows only: Intervals approx. 3 to 6 months	Visual device inspection (approx. every 4 weeks)

## Analysis systems



TECHNICAL DATA	MCS100FT MULTICOMPONENT ANALYSIS SYSTEM MORE THAN 10 COMPONENTS	MCS100E, MCS100E-HW/CD/PD MULTICOMPONENT ANALYSIS SYSTEM MORE THAN 10 COMPONENTS
Measuring principle	FTIR spectroscopy	Single-beam photometer, bifrequency and gas filter correlation method
Measuring components	Simultaneously >10 IR absorbing gas components plus O <sub>2</sub> as well as org. C (optional)	Simultaneously max. 8 IR absorbing gas components plus O <sub>2</sub> and org. C
System components (typical)	<ul style="list-style-type: none"> <li>• FTIR analyzer</li> <li>• Heated measuring gas cell</li> <li>• Electronics</li> <li>• IO modules</li> <li>• System control unit for operation</li> <li>• FID unit (optional)</li> </ul>	<ul style="list-style-type: none"> <li>• MCS100E: compact analyzer in a housing</li> <li>• MCS100E system in a cabinet:                             <ul style="list-style-type: none"> <li>– Sample gas transportation and conditioning (sample gas cooler/permeation dryer, pump)</li> <li>– MCS100E analyzer</li> <li>– Temperature control</li> <li>– FID (optional)</li> </ul> </li> </ul>
Application	<p>Actual monitoring of the strict HF limit values (0 ... 3 mg/m<sup>3</sup>; 4 ppm) according to 2000/76/EC</p> <p>One analysis system for independent emission monitoring – designed to meet almost all emission directives</p>	<p>Flue gas monitoring</p> <p>MCS100E system with the configurations:</p> <ul style="list-style-type: none"> <li>• MCS100E-HW with high-temperature measuring technology for waste incineration plants</li> <li>• MCS100E-PD with gas dryer to record extremely small measuring ranges</li> <li>• MCS100E-CD with gas cooler for power station</li> </ul>
Advantages	<ul style="list-style-type: none"> <li>• Very sturdy analysis system based on standardized system technology according to the high-temperature measuring technology</li> <li>• Multicomponent analysis system (&gt;10 measuring components simultaneously)</li> <li>• Usage of state-of-the-art FTIR technology with new generation industrial spectrometer</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 8 gas components and additional O<sub>2</sub> measurement (optional) plus org. C measurement (optional)</li> <li>• Automatic zero and test gas feeding</li> <li>• Reliable, proven systems</li> <li>• Very low maintenance requirements</li> <li>• Several measuring points with one system</li> <li>• QAL3 function (able to fulfill QAL regulation)</li> </ul>
Compliance, regulations	TA Luft, 2001/80/EC, 2000/76/EC, MCERTS, U.S. EPA, GOST (in preparation)	TA Luft, 2001/80/EC, 2000/76/EC, MCERTS, U.S. EPA, GOST
<b>Measuring location</b>		
Maintenance	<ul style="list-style-type: none"> <li>• Low effort</li> <li>• QAL3 function in preparation</li> </ul>	<ul style="list-style-type: none"> <li>• Low effort</li> <li>• Able to fulfill QAL3 regulation</li> </ul>



MKAS MODULAR MULTICOMPONENT ANALYSIS SYSTEM	MKAS COMPACT MULTICOMPONENT ANALYSIS SYSTEM	MERCEM MERCURY ANALYSIS SYSTEM
Depending on the built-in analyzer (S710, SIDOR)	Depending on the built-in analyzer (S710, SIDOR)	Cold-vapor atomic absorption, photometry
Depending on the built-in analyzer, for example: CO, NO, SO <sub>2</sub> , CO <sub>2</sub> , H <sub>2</sub> , CH <sub>4</sub> , O <sub>2</sub> and others	Depending on the built-in analyzer, for example: CO, NO, SO <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> , O <sub>2</sub>	Hg
<ul style="list-style-type: none"> <li>Analyzer(s) (S710 or SIDOR)</li> <li>Sample gas cooler</li> <li>Sample gas pump</li> <li>Sample gas lines</li> <li>Heat controller</li> <li>Pumps, filter, precipitator, valves</li> <li>Data acquisition and processing system</li> </ul>	<ul style="list-style-type: none"> <li>Analyzer (S710 or SIDOR)</li> <li>Gas cooler (1-stage)</li> <li>Sample gas pump</li> <li>Heat controller</li> </ul>	<ul style="list-style-type: none"> <li>Sample gas pump</li> <li>Analyzer</li> <li>Sample gas conditioning</li> <li>System control unit</li> </ul>
<p>Standard system for emission monitoring</p> <p>The MKAS MODULAR can be optimized with a number of proven options to meet almost all plant conditions.</p>	<p>A complete, very compact analysis system</p> <p>Compact and intelligent integrated cabinet solution for the installation of a standard analyzer (19", 3 HU)</p>	<p>Continuous flue gas monitoring of mercury (total Hg)</p> <p>As independent system or in combination with a MCS100E- HW</p>
<ul style="list-style-type: none"> <li>Switch-over of measuring locations</li> <li>Can be equipped optionally with emission value computer</li> <li>Flexible application, simple retrofitting through modular concept</li> <li>Simple installation and start-up</li> </ul>	<ul style="list-style-type: none"> <li>Effective price/performance ratio</li> <li>Very economic due to favorable purchasing costs and low maintenance effort</li> </ul>	<ul style="list-style-type: none"> <li>Detection of elemental and bound mercury</li> <li>Very low detection limits</li> <li>Very low cross-sensitivity</li> <li>Automatic sensitivity monitoring (option)</li> </ul>
Depending on the built-in analyzer	Depending on the built-in analyzer	TA Luft, 2000/76/EC, MCERTS, US EPA
<ul style="list-style-type: none"> <li>Minimum maintenance effort</li> <li>Low effort</li> </ul>	<ul style="list-style-type: none"> <li>Minimum maintenance effort</li> <li>Low effort</li> </ul>	<ul style="list-style-type: none"> <li>Low effort</li> <li>Able to fulfill QAL3 regulation</li> </ul>

## ANALYZERS AND PROCESS INSTRUMENTATION

### AT HOME IN THE INDUSTRIAL SECTOR

We can build on years of experience in the field of Analyzers and Process Instrumentation. That is why we are at home in the world of cement and power plants as well as in the chemical and petrochemical sector. Be it emission control at the waste treatment or process optimization for steel manufacturing, SICK MAIHAK offers tailor-made solutions.



### WE OFFER YOU A CHOICE AROUND THE WORLD TO YOUR SERVICE

SICK MAIHAK offers a number of sensor-based techniques for analysis, ranging from the continuous gas and dust measurement to specialized applications for water and liquid analysis. Within the process measurement technology SICK MAIHAK products play a central role in determining volume flow of gases and level of bulk materials.



Wherever you are, our global network of subsidiaries and representatives is able to supply qualified support when you need it. We deliver the equipment for your measuring tasks, provide documentation and training. Our highly skilled service staff offers support during installation, commissioning and maintenance of the appliances.



### SICK GROUP

SICK MAIHAK represents the process automation segment of the SICK group, one of the world's leading manufacturers of intelligent sensors and sensor solutions. With its 4,000 employees, SICK offers an extensive portfolio of products and services on the market of factory and process automation. [www.sick.com](http://www.sick.com)

