

Ankersmid Group



ANKERSMID



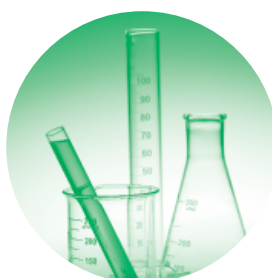
Ankersmid Group introduction

The Ankersmid Group has a long history in providing analytical solutions for gas measurement systems as well as laboratory instruments. The Ankersmid group's expertise ranges from providing reliable and rugged gas measurement systems and services for both process and emission measurements to cutting edge scientific instruments. Ankersmid's expertise includes systems engineering, system integration service and maintenance for process gas applications. With BIEM the Ankersmid group also offers an ISO 17025 (scope L365) Dutch accreditation certified emission monitoring and reporting on contract basis.



Ankersmid Process

We have more than 25 years history in gas sampling, system building and in-line analysers. The group has earned a reputation as a reliable provider of high quality products and professional services. In 2008 we launched Ankersmid's new generation of gas sampling and conditioning products in order to improve our systems and quality. To highlight this innovation the Group changed the name from M&C Indumation into Ankersmid Process. Our portfolio includes besides the complete gas analysis range wet analysis such as online viscosity, turbidity and oil in water analysers. We also service a very wide variety of analysers of other brands.



Ankersmid Lab

With our complete package of process analyzers and conditioning systems we can offer a close link to the laboratory analysis instruments. With more than 25 years of experience in environmental, pharmaceutical, chemical, food and physical analysis we can be of great help in advising your lab the best techniques and applications. We have the best equipment for example pH, ISE, conductivity, refractometry, melting point, microscopy, polarimetry and mercury measurements. We also have a unique particle size and shape analyzer.



Ankersmid Biem

BIEM offers customers the service of outsourcing the emission reporting that is required by law. BIEM's expertise ensures customers are always reporting to the latest requirements, while the flat-fee service eliminates both capital investment in analytical equipment and maintenance expenditure. BIEM is ISO-17025 accredited by RvA under RVA scope L365" and offers a complete range of services for the periodic control of energy, process or environmental measurements.



Ankersmid Process

Gas Analyzers

Ankersmid Process has become a well known name on the (Gas) Sampling Systems/ Solutions market, especially designed for use in industrial environments like: refining, natural gas, gasprocessing, petrochemical, chemical, coalgasification, plastic, food, paper, power stations, water treatment and firms of consulting engineers. change from first generation gas conditioning .components to a second generation smart sampling solution, the Group changed the name from M&C Indumation to Ankersmid Process.



The Ankersmid Process portfolio includes besides the complete gas analysis range wet analysis such as online viscosity, turbidity and oil in water analyzers. We also handle complete instrumentation systems from specification and engineering phase, through procurement and Installation Supervision, Commissioning, Start-Up, Calibrations and Training on our systems On-Site.

- Guaranties on high availability,
- Sample integrity and repeatability of the systems,
- Low maintenance costs
- Low Costs Of Ownership (COO).

INDUSTRIES

- Power plants
- Waste incinerator
- Cement industry
- Chemical production industries
- Gas production platforms and processing
- Glass industry
- Wood processing
- Food processing industries



Ankersmid Sampling

Since 2008 is Ankersmid Sampling a part of the Ankersmid Holding and especially the company manufactures of sample conditioning systems. We started since 1991 with M&C Products and developed with this experience some state of the art conditioning systems.

The new technologies like touch screen controlled displays, new and advances sample probes, really

portable coolers (much lighter and ergonomic) are some of the few developments that makes Ankersmid Sampling the leading producer in this field.

Since we started in 2008 we have dealers throughout the world and partnerships with highly qualified companies and therefore we can assure that the Ankersmid Sampling products are worth your trust.



SECOND GENERATION GAS SAMPLING

- Digital communication provides real-time information on the performance of the components
- Modular design ensures system flexibility
- Easy entrance, reduces on the job safety risk



Service & Support

The Ankersmid team of engineers provides professional onsite or offsite service support. Ankersmid carries stock of the most widely used spare parts and has a quick response system in place with its suppliers. A service contract not only guarantees a fast service support response, but also the best way for customers to ensure an extended system lifetime and a minimize down time, as it guarantees preventive maintenance is carried out regularly. Periodical inspection or calibration may also be beneficial to the manufacturing process.

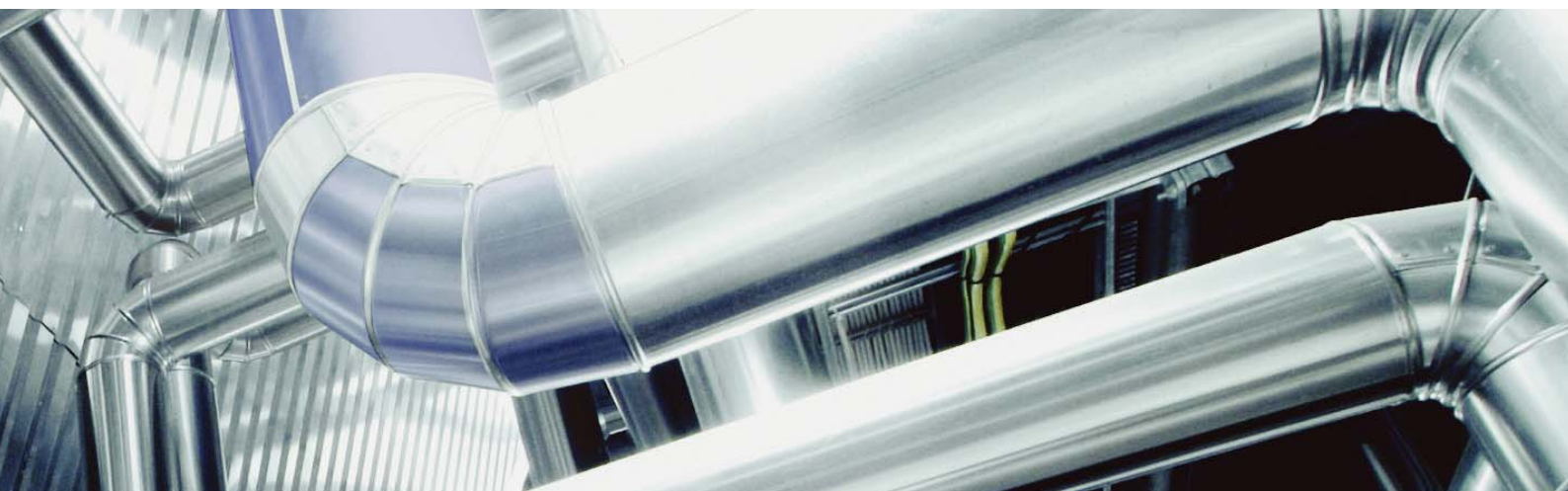
Analysis Systems

Ankersmid Process engineers and manufactures Continuous Emission Monitor Systems (CEM), Predictive Emission Monitoring Systems (PEM), Automated Monitoring System (ASM) that are designed and engineered to meet the exacting standards of (BS) EN 14181 and 15267-3, BVA, Activiteiten Besluit, and Mcert. Each system is built to customer specification and delivered with relevant documentation and certification. Ankersmid offers analyzer housing, outdoor shelters, and explosion proof systems according to ATEX standards.



PRODUCTS

- Gas Sample Probes / Tubes
- Peltier- and Compressor Coolers
- Heated Sample Lines
- Universal Gas and Fluid Filters
- Sample Pumps
- Liquid Samplers
- Complete Sample Systems
- Online Analyzers
- Titration or Ion Selective method Analysers
- NOX Convertors
- Laserdiode Spectroscopy
- Refractometers



Ankersmid Lab

With our complete package of process analyzers and conditioning systems we can offer a close link to the laboratory analysis instruments. With more than 25-years of experience in environmental, pharmaceutical, chemical, food and physical analysis we can be of great help in advising your lab the best techniques and applications.

Ankersmid Lab offers you the following application solutions:

Electro-Chemistry:

Ankersmid's expertise in electro-chemistry was built up over the last 40 years. The decades of cooperation between our manufacturers ensures Ankersmid offers solid advice for all pH and ion-selective applications. For conductivity and dissolved oxygen (RDO) applications both basic and more advanced solutions are offered, thus making certain that every laboratory is served by Ankersmid to its specific needs.



Flexible Solutions for your needs.



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BIEM offers:

*(for detailed scope information see www.rva.nl)



- Assessment of measurement systems (QAL1 calculations according ISO 14956)
- Calibration and annual control measurements for automatic measurement systems (QAL2-and AST-measurements, conforming to NEN-EN 14181)
- NeR (Nederlandse Emissie Richtlijnen)
- Activiteiten Besluit voor kleine-, middelgrote en grote Stookinstallaties
- BVA (Besluit Verbranden Afvalstoffen)
- MCERT certification
- NOx, CO2 -emission trading
- Quality guarantee measurements on the efficiency of catalyst, converters and dust filters, etc
- Consultancy for emission related legislation and issues.

BIEM SERVICES

- Performing accredited emission measurements
- Consultation and implementation on process & energy measurements Consultation and implementation of NOx and CO2 trade legislation.
- Modeling of emissions based on process measurements Consultation and support on environmental regulations
- Process and energy measurements Emission modeling based on prior measurements
- Calibration of analysis systems



Onsite measurement solutions

BIEM offers a variety of onsite measurement solutions. Portable analysis sets are available for short and longer measurement assignments. Measurements carried out by the fully equipped BIEM mobile analysis trucks are available for multiple-day onsite measurements. A porta-cabin analysis center is available for measurements over an extended period of time. BIEM is equipped and supported by Ankersmid Process' extensive gas sampling, gas conditioning, and analysis experience.

Outsource emission monitoring

Outsource emission monitoring responsibilities to focus on core business. An emission monitoring service contract ensures our clients:

- Are guaranteed compliance to emission monitoring regulations
- Receive expert analytical and regulatory advice
- Report fully accredited emission measurements
- Require no capital investment in analytical instruments

Instrument calibration calibration gas certification

BIEM's Quality Assurance System (QAS) ensures emission monitoring systems are operating according to specification. During QAS tests the following performance characteristics of instruments are determined.

- Linearity
- Rate of interference of other components on the measurement
- Response times
- Instrument drift (zero - span)
- Converter efficiency (NOx measurement)

The QAS is also suitable for the certification of calibration gases. All QAS results are completely traceable to trusted international standards.



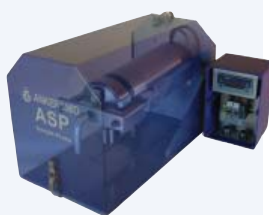


Ankersmid

Sampling Equipment

Sampling Probes

- Modular design
- Heated or unheated versions
- Many options available



Peltier Coolers

- Different cool capacities
- Optional digital communication
- unique design



Heated Sample Lines

- Self-limited or regulated up to 250°C
- Standard or ATEX approved
- Different options available



Compressor Coolers

- Up to 4 streams available
- With condensate pump and panel filter
- Optional flow meters incorporated



Flow Meters

- Compact design
- Chemical resistant
- Adjustable flow



Gas Sample Tubes

- Length and material according to application
- Heated and unheated versions
- Many options available (prefilter, demister...)



Sample Pumps

- Heated and non heated
- Diaphragm and peristaltic pumps
- Standard or ATEX approved versions



Filters and Wash Bottles

- Filtration of fluid particals (aerosols)
- With hydrophobic membrane
- Easy change of filter
- Optimum outwashing effect
- Optimum humidifying effect



Ankersmid

Process - extractive measurement

NDIR and Paramagnetic Analyzers

Analyzing air pollution is the first step towards preserving a clean atmospheric environment. Simultaneous and continuous measurement of up to 5 gases



Gas Converter NO – NO₂

- 19"-rack mount version
- Integrated by-pass valve
- Operating temperature 225°C with molybdenum filling
- Flow rate up to 90 NL/h



Flame Ionisation Detectors (FID)

- Total hydrocarbons in gases, vapour
- Portable, 19" or table top version
- Methane, non-methane option
- C_xH_y



Mercury (Hg) Analyzers

- Portable analyzers for measuring Hg in air
- Continuous gas analyzer for Hg in stack gases
- Automatic Hg monitoring system for air and other gases
- Also version for Hg in water and aqueous solutions available



Ankersmid

Portable & Stationary Process Equipment

Sampling & Gas Conditioning

- Light weight
- Low maintenance and self-monitoring
- Ready for use < 15 min
- Optimum reliability, good chemical resistance
- Optional paramagnetic O₂-sensor



Electrochemical O₂ Analyzers

- Fixed and portable versions
- Oxygen analysis below 1ppb up to 100% O₂
- Process oxygen analyzers
- ATEX certified explosion proof oxygen analyzers



Biogas and Syngas Analyzers

- Portable and fixed versions
- Able to measure CO, CO₂, CH₄, O₂, H₂, C_nH_m & BTU
- NDIR, TCD and ECD technology
- Optional H₂S sensor
- Economical solution



Mercury (Hg) Analyzers

- Laboratory analyzers
- Portable analyzers for measuring Hg in air
- Continuous gas analyzer for Hg in stack gases
- Automatic Hg monitoring system for air and other gases
- Also version for Hg in water and aqueous



Laser Open Path

- Unaffected by dust, fog, or rain
- Up to 1000 m
- No cross interference
- Stable calibration, no zero drift
- No moving parts, no consumables
- ATEX and CSA certified
- NH₃, HF, H₂S, CO, CH₄, CO₂ and many more



Portable UV-VIS diode array spectrometer

- Over 100 different chemicals served
- conditioning system for gas and liquid streams
- Eg. H₂S, SO₂, COS, CS₂, MeSH
- range from eg 0-10 ppm to 0-100%
- NATO codified; MIL C-4150J; IP-67; STANAG 4280; ATA 300



Portable UV-DOAS

- Individual VOCs
- PPB Sensitivity
- Integrated Networking
- Automated Reporting
- Configurable Alarms
- Cannot be Poisoned
- Fully Portable



FTIR

specifically tested as a transportable CEM, the 204M has passed the Environment Agencies MCERTS test programme for use on waste incineration processes



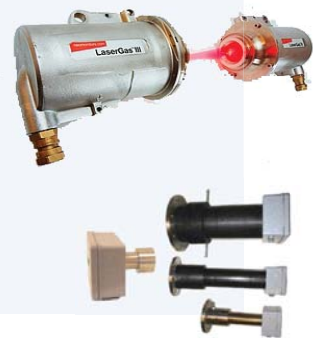
Ankersmid

Process - in-line measurement

LaserGas Monitors

Response time down to one second, No cross interference from other gases. No gas sampling – in-situ measurement. Very low detection limits (ppb and low ppm)
Wide range of process conditions possible, Suitable for high dust environments, Low cost of ownership, ATEX and CSA certified, SIL 2 for O₂

- NH₃ • CO • CO₂ • HCl • NO • NO₂ • H₂O • HF • H₂S • CH₄ • O₂ • N₂O • HCN • C₂H₂ • C₃H₈
- CH₃I • CH₃OH • Dust



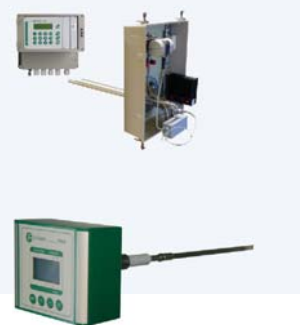
ZrO₂ Oxygen/ CO_e Analyzers

- 1Process temperature up to 1500°C
- Compact and reliable
- Low power consumption
- Universal electronics
- ATEX approved as an option



Tribo-electric/optical Dust/Flow Measuring Devices

- Filter control
- Emission Monitoring
- Standard and wet applications
- Combined measuring device for dust, flow and T
- According to TI air, 13th, 17th and 27th BImSchV
- Mobile filter controller and measuring devices



Multi-component IR / UV Emissions Analyzer

- Integrated Emissions & Stack Monitoring CEM Products
- Up to 6 gases (eg. Cl₂, SO₂, NO, NO₂, NH₃, H₂S, Hg, O₃)
- Auto zero/span
- Flange mounted analyzer
- Reduced cost of ownership



Ankersmid Applied Analytics

CEM system



3 complementary technologies-UV-VIS diode array (SO₂, NO_x), infrared detection (CO, CO₂), and tunable diode laser (O₂)-in one coherent system, matching each chemical to its best detector. SO₂ NO_x CO CO₂ O₂

Frequent Extensions: H₂S Cl₂ CO_s CS₂

H₂S Analyser



- Direct measurement of 5 sulfur components or Pyrolysis method
- conditioning system for gas and liquid streams
- range From 0-10 ppm to 0-100%
- Eg. H₂S, SO₂, CO_s, CS₂, MeSH
- The World's Safest Online H₂S Analyzer

H₂S in Crude Oil

Self-igh resolution UV-Vis absorbance spectrophotometer with a sophisticated headspace sampling system for highly reliable H₂S-in-crude monitoring. This field-proven solution provides extremely fast response in a low-maintenance package.



Chlorine Compound

- UV/VIS full spectrum spectrophotometer
- Custom sample conditioning
- From low ppm up to high % range of chlorine and chlorine based compounds
- Cl₂ and optional ClO₂, FeCl₃, NCl₃, TiCl₄, VOCl₃ and vanadium



TAIL Gas Analyser

- Monitoring of Claus process efficiency in the Sulfur Recovery
- UV-Vis full-spectrum spectrophotometer
- Patented DEMISTER Probe with internal sulfur vapor removal
- Multi-component measurement



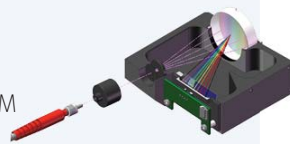
Wobbe Index Analyzer

- Calorific value measurement of mid-process fuel gases
- Measurement principle: residual oxygen measurement
- VCSEL tuneable diode laser sensing method
- General purpose or ATEX version



Semi Conductor Edition

- Measuring up to 4 stream components simultaneously
- CMP slurry, SC-1, SC-2, SPM metal ions, HF etching
- General purpose or ATEX version



- Clean-in-Place Analyser
- Color Analyser
- DeNO_x analyser
- UV-VIS/SW-NIR Absorbance Spectrophotometer

- more then over 100 components can be measured.
- General purpose or ATEX version



Ankersmid

Process - Engineering

"Traditional" CEMs

- Measurement of CO, CO₂, SO₂, NO_x, O₂ and C_xH_y
- QAL 1 EN 14181, IN ISO 14956 and EN 15267
- Including gas conditioning system
- Heated sample probe and heated sample line
- Panel pc with touch screen
- Data acquisition



IR Absorption Multi-component

- Hot measurement
- Visualisation of measuring results and parameters via pc panel
- Measuring principles: infrared absorption dual wavelength respectively gas filter correlation and O₂ cell
- TÜV approval pending according to EN 15267



Process Control

- Tailor made systems for gas- and liquid analysis
- Atex or general purpose
- PLC control
- Cabinet's, Measuring Trucks



Shelters & Turn-Key projects

- Laboratory analyzers
- Portable analyzers for measuring Hg in air
- Continuous gas analyzer for Hg in stack gases
- Automatic Hg monitoring system for air and other gases
- Also version for Hg in water and aqueous solutions available



Ankersmid

Process - Specials

SO₃ Reactive Gas Analyser



The Pentol SO3 monitor is based on a wet-chemical process
Range: 1 - 100 ppm SO₃

Mercury Ultratracer



Total Gaseous Mercury in Air and other Gases at Ultra Trace Levels

Gas Mixers and Diluters



- PLC-based Gas Delivery - Gas Blending System
- Ambient Monitor Calibrator w/Ozone Generator

Ozone Analyzers and Generators



- Continuous process UV ozone analyzer in air and O₂
- Different ranges available (up to 300g/m³)
- Also for residual and dissolved O₃ in water available

Zero Air generator



- Suitable for use as: a zero reference calibration gas, ultra-pure combustion air for flame ionization detector (FID)

Ozone water- & gas analyser, test kits Air generator

- NDUV or chemiluminescence; solid cartridge system, no ethylene
- Ozone generators, low or high volume
- Sterilisation
- Complete systems
- Water cleaning
- Ozone test chambers



Ankersmid

PROCESS LIQUIDS / SOLIDS / OZONE

Chemtronic (Monitek) Analyzers

Optical Process / Ultrasonic Turbidity

- Turbidity, colour, oil in water
- Water in oil, oil on water, suspended solids
- APHA - ASTM - Saybolt - Hazen - ppm - % - mg/l - EBC - NTU
TEF - AU - FTU - OD
- Insensitive to coatings/colours
- Self cleaning effect due to ultra sonic pulses



Process Refractometers

- In-line measurement of concentration
- Brix, % Solids, RI
- Highest quality, absolute hardest Sapphire prism allows all calibration ranges with the same prism.



Mercury (Hg) Systems

- Fully automatic system
- High flexibility of sample pretreatment procedure
- Automatic self diagnosis systems for reliable operation
- Low reagent consumption
- Mercury measuring ranges from 0.01 ppb to 100 ppm
- Laboratory and process applications
- Gas and liquid applications



Oil in Water Analyzers

Continuously monitoring dynamic oil concentrations in effluent water, the OIW-100 is a painless and economical option for complying with increasingly stringent wastewater regulations. Measuring aromatics' absorbance across the 250-320nm wavelength range, the OIW-100 accurately correlates total oil concentrations from trace levels to high contamination. The nova-II spectrophotometer is used for aromatics' detection.



Ankersmid LAB Equipment

Electrochemical Analysis

- Portable and benchtop
- Colour Graphic LCD
- IP67
- pH • ISE • ORP • DO • Conductivity



XRF Analysis

- Compact and easy to operate
- Best price-quality
- Benchtop, portable and inprocess analysis
- Gold, Platina, Mercury, Lead, Stainless steel, Layer thickness Sulfur analysis, Aloys, Minerals Many more



Krüss high quality Instruments

Precision Instruments „made in Germany“ For over 200 years A.Krüss Optronik has been famous worldwide for innovative optic-electronic measuring instruments of the highest precision.

As the oldest company in this field, our target is to develop instruments which set new standards. With our products we aim to simplify testing and inspection tasks in laboratories or production facilities. For this reason all instruments are user-friendly and can be operated intuitively.

- Refractometers
- Handheld Refractometers
- Polarimeters
- Density Meter
- Microscopes
- Metallurgic Microscope MBL3400
- KRÜSS Lab Software
- Peltier Thermostat PT31
- Melting Point Meters
- Flame Photometers



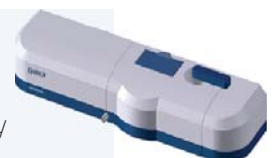
Mercury Analysis

- Fully automated flow analysis
- Modular construction
- Proven and reliable detection method: cold vapor atomic absorption (CVAAS)
- Integrated GoldTrap feature for maximum sensitivity of <1 ng/l
- Automated Sample Digester Module (ASD) as an optional accessory



Eyeteck Particle Size & Shape

- Particle size 0,5µm—3mm
- 6 different measurement cells for every application with easy change of cell
- Powders, liquids, sludge and creams applications
- 58 shape parameters
- Laser measurement & video measurement in one



Ankersmid Process

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