

Engineering Trust



Are you looking for high-end analyzing, sampling and testing solutions? 360°KAS is the global system integrator that sets the bar for accuracy, durability and reliability. We always have, we always will.

The logo for 360°KAS, featuring the text "360°" in a large, white, sans-serif font, with a registered trademark symbol (®) to its upper right. Below it, the word "KAS" is written in a smaller, bold, white, sans-serif font. The entire logo is contained within a purple circular background.

360°
KAS



Analyser & Sampling Systems

We believe trust is the most valuable asset in any relationship. You should be able to rely on our systems; 360°KAS is driven to be the quality leader in our field of expertise. And we are open to share our experience and insights. Our solutions are more than accurate. They are durable, reliable and keep going. That's what we call Engineering Trust.

In each industrial production process it is a challenge to obtain representative process analysis data used for process optimization, asset protection and environmental reporting. Knowledge of the process, sample takeoff, sample preparation, sample storage and applicable analyser measurement principle is essential to finally receive correct information via either online or offline (lab) analysis.

By having extensive knowledge and experience in the field of analyser and sampling solutions, 360°KAS provides you with a fit for purpose and trustworthy solution.

Being in business since 1974, our track record encompasses the supply of various analyser and sampling solutions to clients in numerous industries in countries around the world. Typical clients we serve with our solutions are involved in oil & gas exploration, transportation, refining, petrochemical and food/feed production.

From a conceptual design up to assembly and integration on site, we supply solutions that contain:

- Analysers for all applicable measuring principles;
- Sample Probes;
- Sample (Pre-) Conditioning Systems for gas and liquid;
- Sample Recovery Systems for vapor & gas (VGRS) and liquid (LRS);
- Analyser Enclosures, Shelters & Houses and (ex-proof) HV/HVAC systems;
- Safeguarding, process safety and process reliability;
- Analyser Management And Data Acquisition Systems (AMADAS);
- Product Sampling of oil, gas or condensate;
- Pye Gas Sampling.



Integrated Analyser Packages

Packages for any process unit where analyser measurement has to be integrated in an enclosed environment.



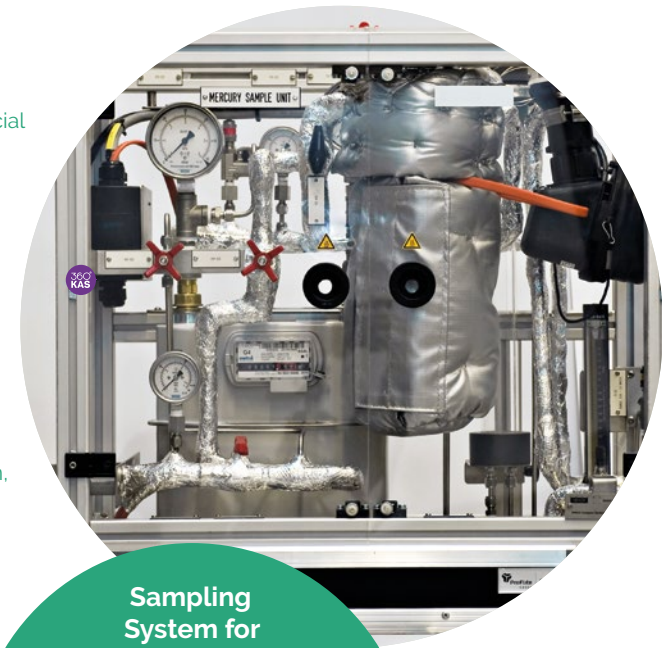
Power-Pye

The 360°KAS Pyrolysis Sampler is specially designed to sample a gas and to remove solids, water, and/or heavy oils from a complex, hot hydrocarbon vapor mixture. The clean gas stream can be used for further measurement by a gas chromatograph or a continuous gas analyser

Application in Ex environment

When a potentially explosive atmosphere may be present, special regulations apply to all equipment used in such an area. Within the European Union these are summarized under ATEX 114 directive 2014/34/EU, IEC 60079 series Explosive Atmospheres standards (electrical equipment) and ISO 80079-36 and 37 for Non-Electrical equipment in explosive atmospheres.

360°KAS has all expertise related to explosion safety in house to supply safe analyzer and sampling systems for a broad variety of applications. CEMS, flue gas O_2/CO_e , GC, H_2S , Total-S, RVP, Moisture and HC dewpoint, Condensate, pH and Specific, Acid and/or Degassed Conductivity, Dissolved Oxygen, Iron, Turbidity analysis are examples of our experience.



Sampling System for Mercury Analysis

The 360°KAS Mercury Sampling Systems are specially designed to take samples from High Pressure Gas Lines to obtain a representative sample for measurement of Mercury by amalgamation on gold/platinum alloy in accordance with the ISO 6978-2:2003.



Product Sampling of oil, gas or condensate

Our product sampling systems are custom designed to withdraw, prepare and store samples for the following applications:

- Gas Sampling
- Condensate Sampling
- Crude Oil Sampling
- Refined Product Sampling
- LPG Sampling

Local Analyser Systems

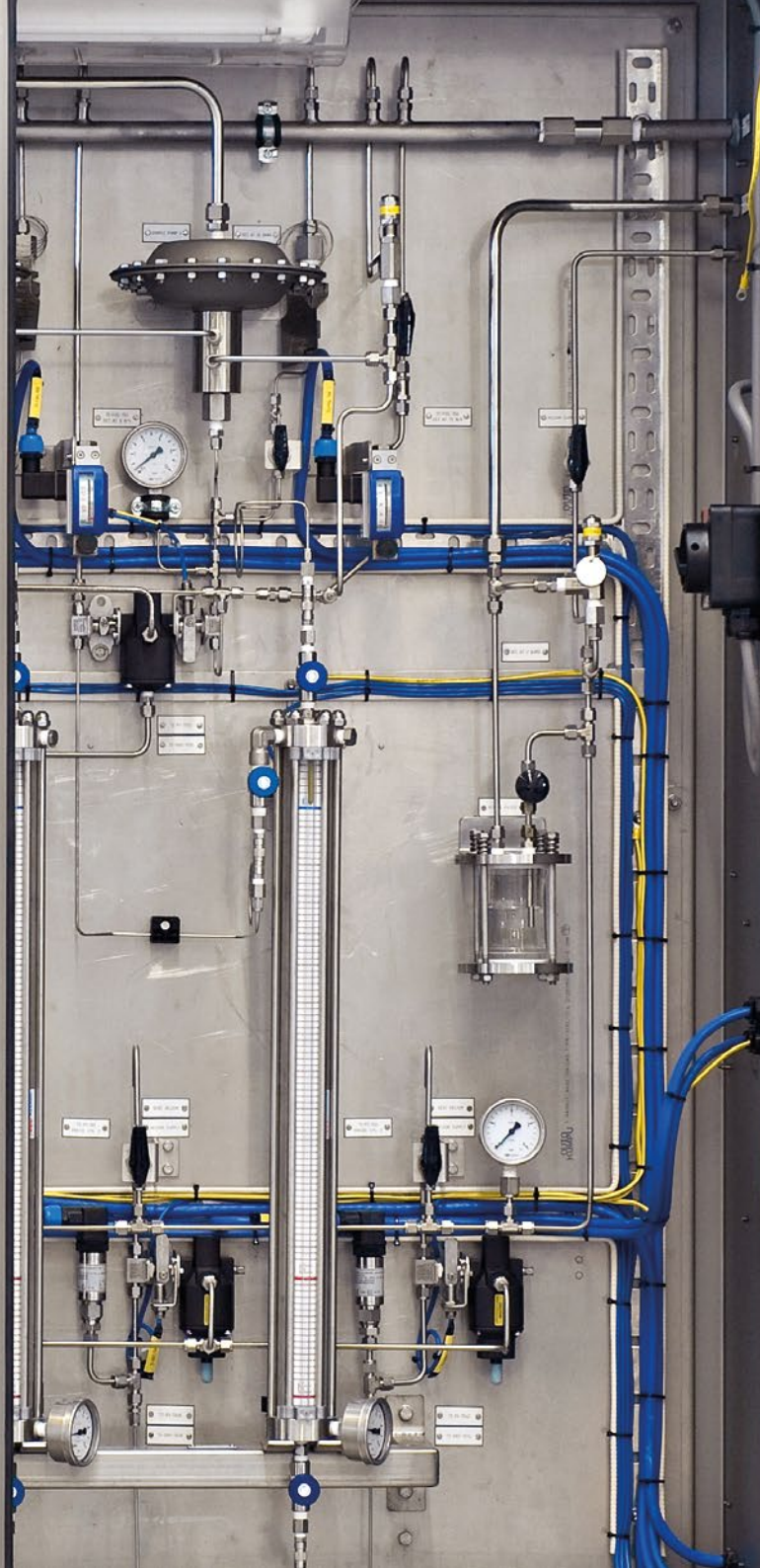
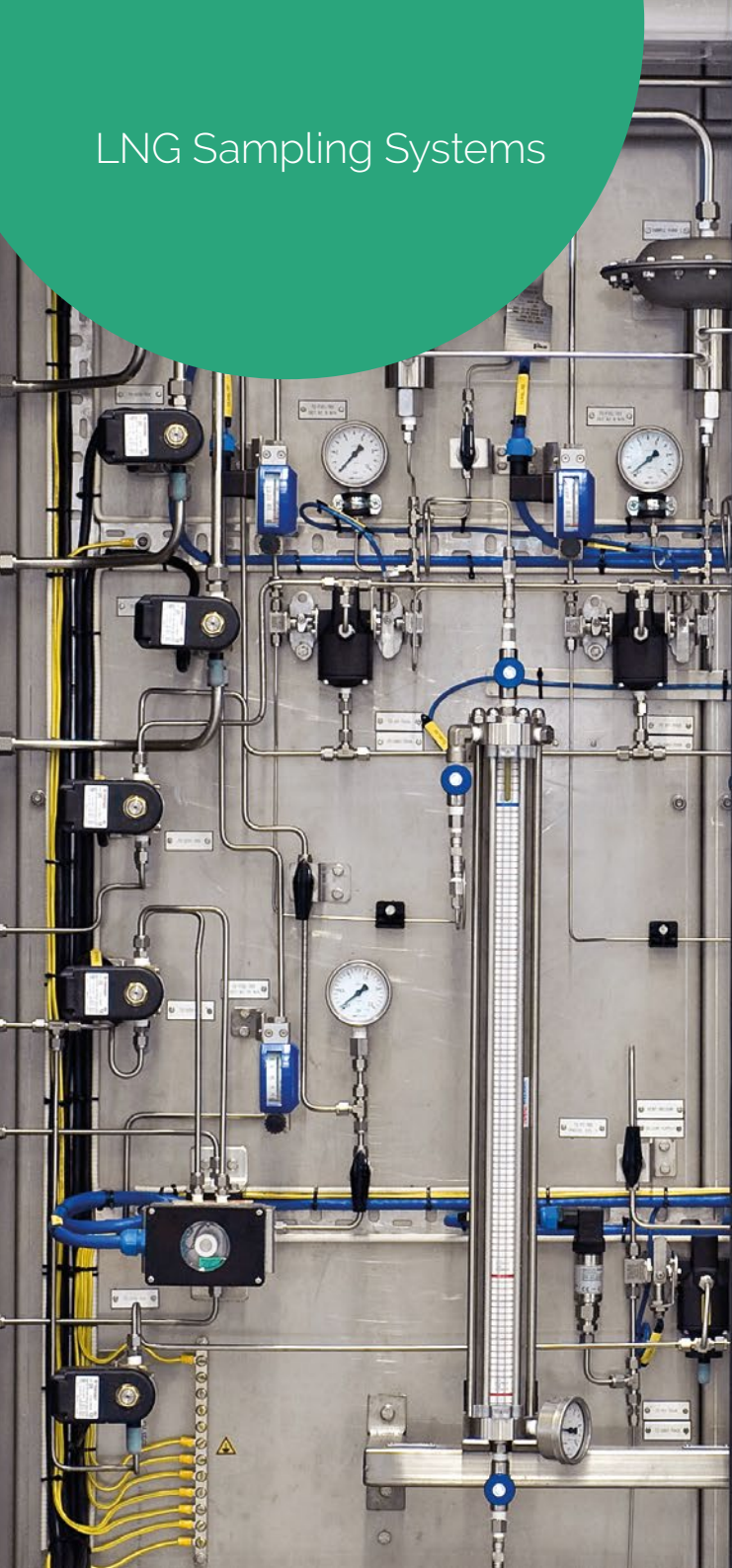
360°KAS is specialised in customised or standardized analyser sampling systems for i.e. H_2S , pH and conductivity analysis. These can be built on a free-standing rack or in a cabinet enclosure for either General Purpose or Zone 1 or 2 Ex application.



Consultancy Services

Are you looking for a feasible sampling solution with a certain measurement requirement? We offer our specialist knowledge to further define your needs and ideas into the relevant RFQ and/or (basic) engineering documents.

LNG Sampling Systems



Intermittent (CP/FP) Sampler

Our automated intermittent LNG sampling solution is based on the ISO 8943 (paragraph 4.3, fig. 3) and ISO 10715 requirements and reduces room for human errors to a minimum.

LNG Sampling Systems

LNG Sampling Systems are used for collecting samples during the custody transfer of LNG cargo. By offline (lab) analysis of these retained samples, principal proof of the transferred LNG quality can be obtained. Together with the density and the quantity transferred, the commercial value of the cargo can be determined.

With 25 years of worldwide experience 360°KAS is serving the LNG value chain with a number of solutions to sample LNG from the main transfer line:

- Sample Take-Off Assembly
- Probe & Vaporizer System
- Intermittent (CP/FP) Sampling System
- Continuous Waterless (Membrane) Sampling System
- Continuous Water Seal (Dome) Sampling System
- Intelligent Quality Reporting Module (iQRM®)

360°KAS has a long track record in the development and design of Continuous and Intermittent LNG Sampling Systems since 1994. All systems are in compliance with the ISO 8943, the ISO 10715 and the guidelines stipulated in the GIIGNL.



Sample Take-Off Assembly

With our sample take-off assembly (bypass loop) the LNG Sampling System can be isolated from process ensuring safety and making maintenance easier and more cost effective.



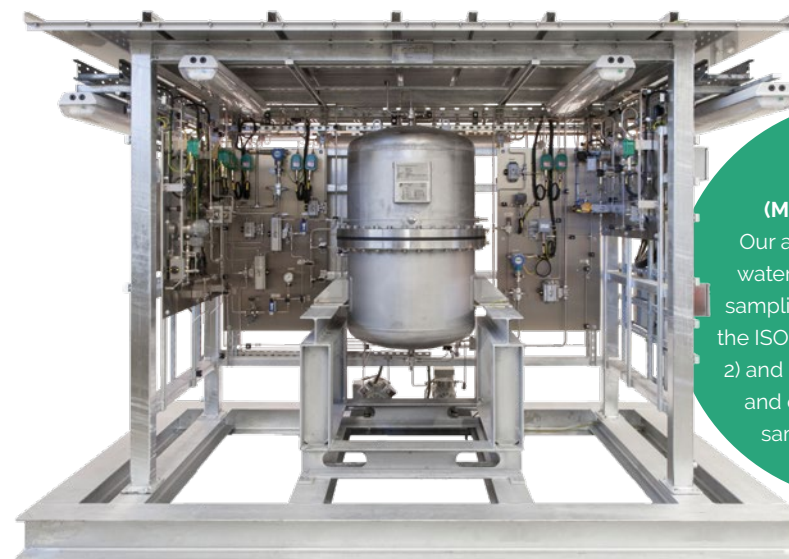
Continuous Water Seal (Dome) Sampler

Our automated Continuous Water seal (Dome) LNG sampling solution, based on the ISO 8943 (paragraph 4.2, fig. 1) and ISO 10715 requirements, eliminates sample contamination by ambient air via a closed tank construction.



Probe & Vaporiser System

Our standalone operating LNG probe and vaporiser system combination uses integrated controls and premium materials. This solution has proven to be one of the most reliable in the market.



Continuous Waterless (Membrane) Sampler

Our automated continuous waterless (Membrane) LNG sampling solution is based on the ISO 8943 (paragraph 4.2, fig. 2) and ISO 10715 requirements and collects high integrity samples for laboratory analysis.

Pilot Plants

Fluid Catalytic Cracking (FCC) Pilot Plants

Are you deactivating FCC catalyst at laboratory or pilot scale for consequent catalyst performance testing? Are you in need of better mimicking E-cat samples for these tests? Let us help you out.

360°KAS has the method to obtain a resembling equilibrium catalyst (E-cat) at laboratory or pilot scale. We call it our Cyclic Deactivation (CD) unit. This is the way to reproduce all the fundamental phenomena that simulate the aging process in commercial Fluid Catalytic Cracking (FCC) operation.

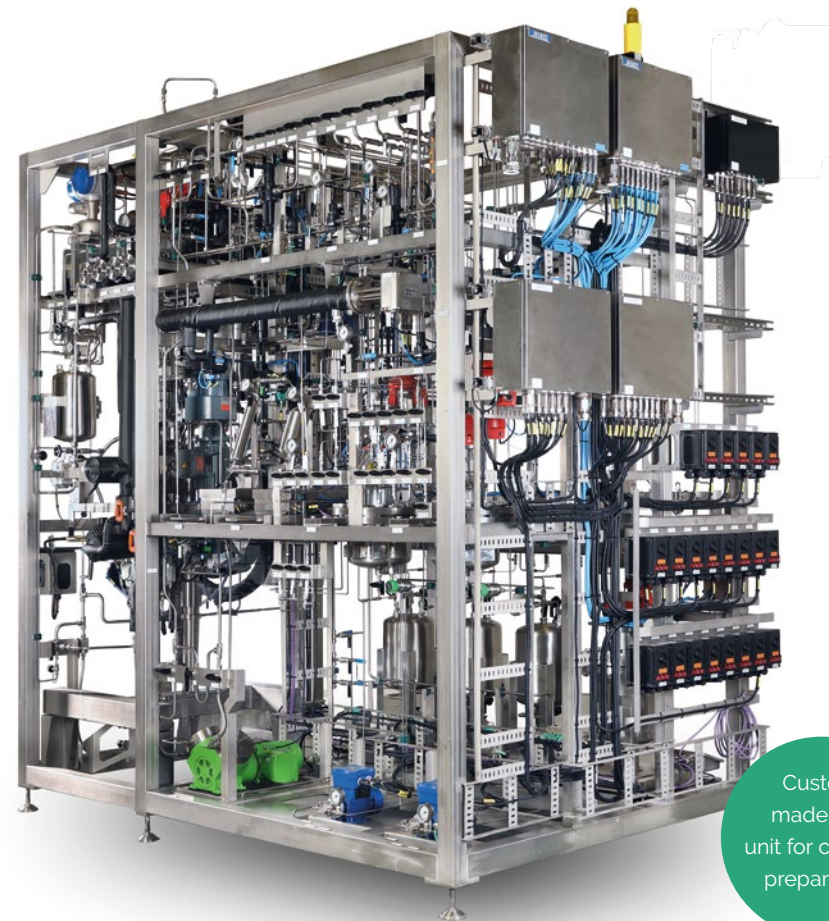
With the obtained deactivated FCC samples, you must have the wish to evaluate these in a unit that perfectly resembles the commercial cracking process.

Here is our second helpline: our Short Contact Time Riser Test (SCT-RT) unit. This excellent tool evaluates the short contact performance of real commercial FCC operations.

Please contact us for more information on our:

- Laboratory Cyclic Deactivation (CD) Unit
- Pilot Scale Multi Cyclic (PSMCD) Unit
- Short Contact Time Riser Test (SCT-RT) Unit

A Cyclic Deactivation (CD) unit can be supplied with 1 (CD, 2 (2-MCD) or 4 (4-MCD) reactors, depending on your need for E-cat samples



Custom made test unit for catalyst preparation

Custom Made Pilot Plants

360°KAS is involved in the design and fabrication of custom made pilot plants since 1980. Our turnkey units comply with the highest standards in safety and reliability but are practical and cost-efficient. The full spectrum of applications we cover encompasses:

- Continuous, semi-continuous and batch
- Dedicated and multi-purpose
- Fixed/ fluidized bed
- Liquid, gas and multi-phase reactors

Our portfolio of custom made pilot plants encompasses batch reactors for polymerization studies and continuous micro flow reactor units for experimental studies on catalytic hydrogenation.

Spares, Service & Maintenance

360°KAS offers spares, services and maintenance as part of its Life Cycle Service Management program. This program covers all the services necessary to maintain and operate your systems safely and accurately from initial start-up till controlled end of life cycle. It enables clients to realize maximum availability of their systems with minimum downtime at the most economical operational costs.

As part of this program the following services can be coordinated by our dedicated in-house Customer Service department:

- Site Construction & Supervision
- (Pre-) Commissioning & Start up
- Site Acceptance Test (SAT)
- Training
- Service Level Agreements (SLA)
- Analyser Maintenance Support
- Spare parts & consumables
- Life Cycle assessment
- Upgrades & retrofits
- End of life services & replacement

Instrument Sales

As part of its portfolio 360°KAS acts as distributor and service partner for the following brands:

SpectraSensors®
An Endress+Hauser Company

XOS®
better analysis counts

ZEGAZ
instruments

APPLIED
ANALYTICS



Our solutions are more than accurate. They are durable, reliable and keep going. That's what we call Engineering Trust.

Engineering trust

You should be able to rely on your systems. You need facts instead of guestimates and be confident with the results and processes. We deliver our promise because we act independent and work with highly qualified people.

Smart Solutions

360°KAS is driven to be the quality leader in our field of expertise. We have solutions for the challenges of our customers. For one: We have the experience. Two: We have proven to be resourceful and creative.

Open culture and communication

We have a knowledgeable team that is open to share our experience and insights. Within our team to ensure cross-functional checks and balances. And with our customers who appreciate us to be pro-active and to the point.

Solid Solutions

Our solutions are more than accurate. They are reliable and keep going. If you are looking for solid sustainability and durability, look no further. 360°KAS has a proven track record of performance.

Today, tomorrow, together

We set the bar for accuracy, durability and reliability together with our clients. We share and we care. Intense collaboration provides us with clear understanding and focus on how to meet our clients challenges and expectations, now and in the future.



360°KAS is an independent system integrator serving the global Oil & Gas, Petrochemical, LNG and Research & Development markets with high-end analyzing, sampling and pilot testing solutions. We take care of the whole process from basic and detailed design, through procurement, assembly and final system integration on site.

360°KAS is part of the Industry International Group. Industry International Group currently employs around 300 people across five autonomous businesses, each delivering specific technical engineered products and services in their respective fields and markets from different locations in The Netherlands, France, Africa, Middle East and the Far East.



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**INDUSTRY
INTERNATIONAL**