Products and Solutions for the Oil & Gas Industry
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Measuring Solutions for Oil & Gas

KROHNE Oil & Gas is part of the international KROHNE Group.

Founded in Germany in the 1920’s KROHNE has many years of experience in process measurement. KROHNE is an independent and privately owned company with world-wide presence, and manufacturing facilities in all regions. In our role as one of the world’s leading companies, we are committed to the development and production of innovative measurement products and solutions for any industry.

KROHNE Oil & Gas offers 4 solid foundations:
» Experience
» Full responsibility from design to completion
» Value-adding technology
» Independency and financial strength

Essential experience in Oil & Gas

Our portfolio spreads across all sectors of the oil and gas industry: from exploration & production to transportation; from refining to distribution; and from storage to retail.

Understanding the customers needs

Our understanding of your process ensures that we are able to design and provide the solution that will work in all areas:
» Metering
» Calibration and proving
» Supervisory and flow computing systems
» Loading and off-loading, tank farm management
» Pipeline leak detection and management system.

The Innovation to Keep You Ahead

Continuously accurate results, reliable operation with minimum downtime and maintenance are key. KROHNE develops and manufactures the essential hardware and software products in house. This means that we can commit ourselves to the highest level of support you will experience from any single partner.
We have built up a reputation for high quality and innovative concepts, using breakthrough technology.

We work hand-in-hand with our customers to obtain the best possible technical configuration for every application with the most favourable performance and costs.

By focusing wherever possible on systems with minimal maintenance and low running costs, the designs for our products and systems are known to have best balance between capex and opex.

We’ll support you with know-how, service and training, to ensure that your system works perfectly in the years to come.
KROHNE Commitment

KROHNE will add value to your business through on-time delivery, excellent quality together with highest accuracy, reliability, and availability.
We provide the widest range of solutions with professional engineering, global project management and after-sales support to all segments of the oil and gas industry.

Our motto is simple:
We don’t have projects - We have clients.

Our commitment to accurate & reliable measurement solutions continues to drive our customers’ success.

KROHNE Oil & Gas factories are certified:
ISO 9001/9002
ISO 14001
ISO 18001

KROHNE is regularly inspected and audited by governmental bodies and major global oil companies. We welcome all our customers to visit our facilities and experience the professionalism of KROHNE Oil & Gas.
Custody-Transfer Products
Custody transfer means assurance for both parties.

Industries such as oil and gas, petrochemicals, biofuels, and nuclear place the maximum demands on the meters and equipment:

- The highest degree of accuracy and reproducibility, independent of media properties, such as viscosity, temperature, density and electrical conductivity
- Excellent long-term stability, no re-calibration
- Sealed systems to prevent unauthorised manipulation
- Proven long-term stability with no drift in measurement
- No moving parts or parts that protrude into the measuring pipe
- Low capital and operating costs because of non-wearing and maintenance-free properties
The primary device in any flow metering system is the flow meter itself.

At KROHNE we have a reputation for excellent build and quality: it’s the result of decades of experience in development and manufacturing of flow meters.

In addition to mechanical excellence, the electronics and software are of equal importance. The key to achieving and maintaining superior performance is our ability to interpret the signals and measurement data from a meter, while relating them to signals from the other instruments such as densitometers, gas chromatographs, temperature and pressure sensors, or the effects of valves, pipe-work and flow conditions.

For our customers this ability can mean the difference between losing money and making profit.
Innovations in Technology for Better Measurement

KROHNE is the industry’s prime innovator. Numerous technologies are the result of years of painstaking work in our worldwide research and development division. In the Oil & Gas industry the acceptance of many flow measurement technologies is primarily due to the advances that stemmed from KROHNE.

Ultrasonic Flow Meters

The KROHNE ultrasonic flow meters are based on the difference in transit-time method. Each couple of transducers (channel), built in the opposite side of the measuring tube, send and receive acoustic signals through the flow in two opposite directions. One signal is sent downstream of the flow and one is sent upstream, both along the same path. A sound wave travels faster with the flow than one against the flow. The difference in transit times is proportional to the medium’s flow velocity. The number, shape and location of the channels, are the key to compensating for flow profile effects. The major difference is due to the centre beam which reliably differentiates between turbulent and laminar flow.

Coriolis Mass Flow Meters

The mode of operation of mass flow meter is based on the Coriolis principle. This allows you to determine the mass flow of liquids and gases from the deformation of the measuring pipe caused by liquids and gases. At the same time, the density of the medium can be taken from the resonance frequency of the pipe that has been caused to vibrate. Two sensor coils serve to detect the Coriolis effect. If there is no flow, both sensors record the same sinusoidal signal. Once a flow begins, the Coriolis force acts on the flowing mass particles of the medium and leads to a deformation of the measuring pipe and a phase shift between the sensor signals. The sensors measure the phase shift of the sinusoidal vibrations. This phase shift is directly proportional to the mass flow. Volume flow is calculated from mass and density measurement. KROHNE pioneered the straight-tube flow meters, thus ensuring minimum pressure drop and minimum effects of bends in the measuring tube.

Electromagnetic Flow Meters

The electromagnetic flow meter is based on Faraday’s law of induction. According this law, a certain voltage is induced in a conductor or conductive medium, which is moving in a magnetic field. This voltage is proportional to the movement speed of the medium. For electromagnetic flow meters, the induced voltage is tapped either via two measuring electrodes that are in conductive contact with the measure substance or in a capacitive manner with no contact. An electronic measuring transducer amplifies the signal and converts it to a standard signal. KROHNE first introduced the electromagnetic flow meter and has been continuously developing it ever since. Wherever possible, we promote the use of non-mechanical devices to reduce maintenance and improve reliability.
KROHNE pioneers the most advanced technology available today. Performance monitoring and accuracy are leading features in our custody-transfer meters

Gas Ultrasonic Flow Meters: ALTOSONIC V12 / V6

The first of the next generation of ultrasonic custody-transfer flow meters: their unique measurement chord arrangement combined with a dedicated diagnostic chord, achieves a quantum leap in accuracy, independent of installation effects such as bends and swirl. Real-time performance monitoring now makes predictive maintenance a reality.

V12 is the first ultrasonic gas flow meter to achieve OIML Accuracy Class 0.5; most others only achieve Class 1.0

Liquid Ultrasonic Flow Meters: ALTOSONIC V / III

The ALTOSONIC V is the most widely used ultrasonic meter for custody transfer of liquid petroleum products. Its unique five beams and continuous Reynolds correction make it essentially independent of viscosity and density over a wide dynamic flow range. It is therefore the ideal meter for crude oil, LPG, and multi-product pipelines. There are special versions available as MasterMeters, for high-viscosity crude, and for LNG.

The ALTOSONIC III, offers a cost effective solution for single petroleum products. Apart from greenfield it is also an ideal replacement for traditional mechanical measurement devices.

Liquid and Gas Coriolis Mass Flow Meter: Optimass 2000

These truly straight twin-tube mass flow meters have been specifically developed for high-volume measurements in the oil and gas industry, such as terminals and transport pipelines.

The Optimass 2000 Coriolis mass flow meter is easy to install, has a small footprint, and measures essentially independent of pressure and temperature. It therefore provides accurate, custody-transfer measurement of volume and mass over a wide flow range.
Auxiliary Metering Products for the Oil & Gas industry

Gas and Wet Gas Venturi Tube: VPE 7600

As part of our meter portfolio, we manufacture a range of venturi flow meters to fulfil our customers’ needs for this special technology for metering applications such as wet gas.

Electromagnetic Flow Meters

These high-pressure meters find use in well-water injection, produce water, as well as flow metering applications in refineries. They are available in various sizes, materials and liners to cover all needs.

Radar Level Meters

These devices have an accuracy of up to ±1 mm (Custody Transfer OIML R 85) thanks to FMCW & PLL radar technology. The horn antenna has a stay-clean design, purging system, and no moving parts. 4-Wire or 2-wire loop-powered technology make installation flexible. Communication is via HART, RS485, Profibus and FF serial outputs. Also available as TDR contact version with rod and cable antennas and heavy-duty marine version.
Provers and Master Meters
... because confidence is capital

KROHNE Oil & Gas designs and manufactures meter provers, and master meter systems. The range of solutions that we supply to the industry is based on more than 30 years of experiences and includes:

» Unidirectional meter provers
» Bidirectional meter provers
» Small volume meter provers
» Mobile meter provers
» Mobile MasterMeter
» Volumetric tank metering systems
» Piston provers
» Master meters
» Calibration rigs and facilities

Our designs and systems are in accordance with international standard such as the API Manual of Petroleum Measurement Standards (MPMS) Chapter 4.

The range of provers and solutions we provide are capable of verifying and calibrating a wide range and many type of flow meters such as ultrasonic, mass flow, turbine and positive displacement. We offer sizes from 3-inch to 42-inch. Moreover, we manufacture stationary prover and master meter systems for in-situ calibration, as well as mobile systems.
Master Metering as an Alternative to Provers

As an alternative to ball or piston type provers KROHNE offers verification and proving of the primary flow meters based on a master meter concept. Ultrasonic, mass flow meters, or traditional technologies may be used as the master meter.

Improving the Prover with Micro-Set

One of the most critical parts of a ball prover is the sphere detector switch. The micro-Set meter prover sphere detector from KROHNE has proven for more than 25 years to be superior in repeatability, operability and reliability. It is fully compliant with API MPMS Chapter 4, and is the industry choice.

The micro-Set sphere detector can be retrofitted in the field without needing to re-calibrate the prover loop. Existing provers can be refurbished using the micro-Set, replacing the existing obsolete or defective ones.
Managing Hydrocarbon Assets

Unites all functionalities into one open system to maximize the performance of
- Metering
- Analyzing
- Quality measurement instruments
- Validation, and
- Movement of hydrocarbons
Managing Hydrocarbon Assets

SynEnergy focuses specifically on the key areas, which have the most influence on the profit and loss in your operation.

You maximize the profit from your hydrocarbon assets by ensuring the best possible performance of your measuring equipment and systems, while minimizing any potential loss.

SynEnergy provides complete information enabling you to gain and maintain control over all aspects of your measurement processes. It gives you a basis for important decision-making at all levels, from QMI engineering to top management.

Its predictive maintenance philosophy not only reduces unnecessary work, expense and down time; it primarily eradicates give-away inherent to previous systems.

SynEnergy makes your process transparent and offers a new level in auditing and accountability.
KROHNE has a reputation for reliability. This is an important feature of our Supervisory system. Supervisory systems are dedicated to metering and take consideration of the very specific needs in terms of allocation and fiscal metering. They draw on our hands-on experience in all aspects of metering making our systems truly comprehensive and highly trustable. Our open structure allows information exchange as easily with existing third party equipment, as with our own state-of-the-art meters, flow computers and systems.

The features and functions include:

» Consolidation of data with customizable reporting  
» Real time and historical trending  
» Life-cycle archiving  
» Remote metering  

» Internet web server, allowing any authorised user worldwide to have instant access to information related to his level  
» State-of-the-art colour graphics and easiest to operate  
» Control of valves, PLC and flow computer functions, etc.  

» System diagnostics  
» DACA-compliant multi-level security  
(Data Acquisition and Control Architecture)  
» Wide integrating and information-exchange possibilities to LIMS, DCS, SAP, hydrocarbon accounting, etc.
KROHNE’s analyzer management system CALSYS is the package within SynEnergy that monitors and controls each Quality Measurement Instrument (QMI) for:

» Analytical Performance
» Availability
» Maintainability

The System Provides:

» Registration of instrument performance data, for any instrument being used (vendor-independent)
» Consolidation of data into significant information
» Improved Management Reports on plant wide performance of QMI’s and reports on individual instruments
» Validation Guidelines
» Statistical Process Control

Increase Availability:

CALSYS allows you to plan maintenance, thereby increasing the availability of instruments and improving process control. This also allows for fine tuning and increasing the quality of the plant output.

Reduce Maintenance Costs:

Instrument management based on statistical process control allows operators and maintenance personnel to focus on validation and trouble shooting and to avoid unnecessary preventive, routine, or corrective maintenance.

Minimize the “Give-Away”:

Better control of processes means less errors and therefore process limits can be improved, while avoiding unnecessary “give-away” or waste products.
Shaping the Future of Flow Computing

Summit 8800 is the first true breakthrough in flow computers for many years. It overcomes all the limitations of current flow computers through state-of-the-art technology and ergometrics.

- Touch Screen operation, Scroll & Click menu navigation, Web access of current and historical data
- WAN Wide Area Network capability, Fully redundant ethernet
- Full audit trail, Separation of fiscal and maintenance data, Multi-level access and authorization

Remote Access ... as if you were there

Via internet you can call up the data of any station, instantaneously read its memory, re-adjust settings, check trends and other data. Summit 8800 is ideal for un-manned platforms, inaccessible sites.

Virtual Flow Computing

The APB Application Builder Technology software within SynEnergy is approved by NMi and is the basis for virtual flow computing. The complete software functionality from the flow computer is loaded onto a central PC. Unlike a typical flow computer the VFC can handle 50+ streams. One common system means absolute comparability of measured data. Added advantages are unlimited processing power, allowing unrestricted logging, trending, and data management. VFC is used for allocation metering, wet gas application with real-time flash calculations, FPSO’s and FSO’s.
PipePatrol provides very fast and accurate leak detection and localisation in pipelines.

Two different methods are used: Statistical Mass Balance (SMB) and/or Extended Real Time Transient Modelling (E-RTTM).

KROHNE’s PipePatrol is the ideal choice for:
- Liquids, gasses, LPG, multiproduct applications
- Underground, subsea, and land pipelines
- Batch and pig tracking
- Transport and product pipelines
- Stationary and highly dynamic pipelines (transient), standstill

PipePatrol has been successfully implemented on gas and liquid pipelines throughout the world with major oil and petrochemical companies, thereby fulfilling regulations such as the API 1130 and API 115, and the German TRFL.

PipePatrol fulfills the requirements for a good and reliable leak detection system:
- Detect small leaks ... ... very quickly
- Not give false alarms!
- Locate the leak precisely
- Be operator friendly, easy to retrofit
- Require no maintenance
- Remain sensitive even under transient conditions
- Permanently available 24/7
Tank Inventory and Management System

The KROHNE Tank Inventory and Management System is a powerful tank gauging and monitoring system for hydrocarbon depots and terminals. It can be deployed as a single tank solution, or as part of a comprehensive multi-tank farm including loading and off-loading into tankers and pipelines.

A typical system consists of KROHNE precision level meters (contact or non-contact); together with all auxiliaries such as temperature and pressure gauges, overfill and dry-run protection switches, and communications.

The heart of the system is part of the KROHNE SynEnergy architecture and provides all necessary Supervisory Control and Data Acquisition (SCADA) functions. The software runs on one or more industrial PC’s. Intuitive Human Machine Interface (HMI) facilitates usage by operators and maintenance engineers.

Our intelligent KROHNE tank site controller handles data and provides gross and net volume, density profile, gross and net mass, alarms as specified by the user.
Complete Metering Systems
Turnkey Solutions for Liquids and Gas

From Upstream to Downstream

We supply our customers with complete solutions including consultancy and engineering, documentation and certification, manufacturing and assembly, packing and shipping, testing and start-up.

This comprehensive capability coupled with leading edge technology is key to our customers’ success.

Repeat business for our turnkey solutions is our best recommendation.
KROHNE has been supplying gas flow metering systems for many years.

From well heads to city gates, we are the superior choice for custody-transfer gas measurement.

Experience the difference

Our engineers have the knowledge and experience from supplying systems using the entire palette of technologies from venturi to ultrasonics.

This ensures we will provide you with the best solution to fulfill your application needs - on time and within budget. Our in-house engineering department handles and executes all aspects of the design from structural, mechanical, piping, electrical, instrumentation, flow computing, supervisory - up to and complete with analyzer and quality measurement equipment and modules.

Put your trust in years of know-how and field experience.
The Next Generation is here

ALTOSONIC V12 – Breakthrough Technology in Ultrasonic Gas Flow Meters

ALTOSONIC V12 KROHNE is the next generation of ultrasonic gas flow meters for custody transfer applications. KROHNE has now answered the call for increasingly accurate flow meters in a world of increasing energy prices.

The ALTOSONIC V12 has 12 measuring chords, two of which are dedicated to diagnostics. Once commissioned, it continuously checks the operating status. The positioning of the chords in five horizontal parallel planes compensates for swirl and thus provides reliable measurements even with highly distorted flow profiles.

The diagnostics in ALTOSONIC V12 reliably assess deposits, contamination or changes in wall roughness so that maintenance can be scheduled according to the actual needs.

ALTOSONIC V12 addresses two significant challenges which cannot be satisfactorily resolved by existing ultrasonic flow meters:

How to transfer the calibration curve obtained under ideal conditions in the high-pressure test rig to the real-life measuring station with its headers, strainers, bent pipes, etc.?

To solve this, we analysed the effects on the flow profile in all kinds of pipework configurations. The result is ALTOSONIC V12. The first proven and certified ultrasonic flow meter immune to installation effects and therefore capable of complying with the ISO17089 and AGA9 standards, fulfilling the 5D straight inlet requirements without using a flow straightener.

How to ensure that billing will remain accurate after prolonged operation?

ALTOSONIC V12 monitors itself using the unique dedicated diagnostic chords. The proven reflecting technique allows the meter to detect not only changes in the flow profile, but also changes in the cross sectional area (fouling, contamination).
For many years KROHNE Oil & Gas has been supplying liquid flow metering systems: from a simple meter run to state-of-the-art multiple-meter skids.

Our portfolio includes the complete spectrum, all done in house:
- Electrical and mechanical design and concept to match your process
- Complete engineering and project management
- Liquid flow metering package, fully assembled
- Provers and master meters
- Fully redundant flow computers & supervisory systems
- Quality measurement modules with sampling systems, analyzer houses and shelters

We design, integrate and provide system solutions from for all onshore and offshore applications.
Experience Counts

Our experience spreads from traditional mechanical meters to successful modern technologies, such as ultrasonic and mass flow meters. We have knowledge in-house for numerous types of operations and products which we can demonstrate and back up with our extensive references.

Long-term Satisfaction Guaranteed

To obtain the optimum design and technology you can count on our professionalism and experience - from the product to engineering; from manufacturing to life-cycle service of your equipment. We factor in all variables to help you make the right decision. Our products and systems are designed, engineered and manufactured to the highest international standards. Our KROHNE heritage ensures the consistently high quality that the Oil & Gas market demands. Coupled to our innovative solutions and our ability to provide world-wide support, this ensures that the performance you have on day one will be there for many years in the future.

Product
» Crude Oil
» Condensate
» Refined Products
» CNG, LPG, LNG
» Other Hydrocarbons
» Chemicals

Metering
» Custody Transfer
» Fiscal
» Allocation
» Process Measurement

Applications
» Offshore:
  Platforms, FPSO, Tankers, SBM’s
» Onshore:
  Pipelines, Terminals, Loading & Off-loading, Petrochemicals, Refineries
» Calibration / Verification / Proving
At KROHNE we calibrate our own products; we calibrate meters for third parties and we manufacture calibration facilities for governmental bodies, calibration authorities and major oil companies.

Every flow meter that leaves one of our factories is thoroughly tested and wet calibrated beforehand. Volumetric flow meters such as ultrasonic and electromagnetic flow meters with nominal diameters from 0.25 to 120 inches (DN3000) are calibrated on our calibration rigs which are fully certified and traceable to international standards.

The specific measurements, tests, and material tests are part of what we call “KROHNE-proved”.

Calibration Rigs and Facilities

Inside the World’s largest Industrial Calibration Facility

Calibrating a KROHNE 5-beam ultrasonic custody-transfer meter
The world buys and relies on KROHNE calibration and proving technologies

Systems for Hydrocarbons, Gas, and Water

We have been involved in building and providing of our calibration & proving technology around the world. Many National Governments and metrological bodies rely on our technology and we continuously participate in setting the standards higher.

Every Product

Liquid
Gas
Oil
Petrochemicals
Water

Every Location

On-site
Mobile
At KROHNE factories
Governmental bodies
Weights and Measures Institutes
Major oil companies
Contractors and Service Companies

EuroLoop HyCal with KROHNE

The World’s Largest Hydrocarbon Calibration Facility

To achieve a new milestone in calibration accuracy and uncertainty the NMi (Dutch weights & measurements authority) chose KROHNE as an exclusive partner to supply the complete liquid calibration system for the HyCal facility.

From design and engineering to completion, KROHNE provided a turn-key solution based upon their proven master meters and custody-transfer technologies. No other facility in the world can calibrate flow meters up to 30 inch over a complete viscosity range from 1 to 1200 cSt and up to flow rates of up to 10,000 m$^3$/h.
Wet Gas, Allocation and Reservoir Metering

In close liaison with our clients KROHNE has developed a unique system for flow and re-allocation measurement of wet gas. In addition, our system is highly suitable for (remote) reservoir and well-head monitoring applications. The system has proven to work very well under varying process conditions.

KROHNE wet gas flow meters and systems are designed to measure the unprocessed gas directly from the well and are found offshore, onshore, in reservoir and in well management systems. They can be used for single stream multi-phase metering to complex multi-well re-allocation applications.

Venturi meters are located directly on each individual well and can be used for both re-allocation and well management. Together with the other data they provide a complete mass balance of the overall platform or facility. Re-allocation to each individual well is simple and for the operator of great value and importance - especially when different companies / operators are tied into the platform or processing facility and/or when well and reservoir management is required.

How does it work?

The system uses technology proven in many applications. From known reservoir and well compositions the compositions at the point of measurement are calculated. These are then used to generate fraction and density tables for the operation range of the well or reservoir. Our highly accurate and ultrafast flow computer or virtual flow computer then uses the interpolation tables to calculate the dry gas, the hydrocarbon liquid and the water fraction.

It works with zero maintenance

Most available equipment and solutions are not capable of determining the dry gas and wet fractions under varying process conditions [as the relations are not linear]. Moreover, the use of highly sensitive equipment such as Gas chromatographs is not always preferred. Using a simple standard KROHNE venturi meters with this wet gas system as described has proven to be a very reliable, low maintenance and accurate solution excelling other technologies with ease.
Quality, Analyzer and Sampling Systems

The System to Suit your Needs

The sampling, analyzing and quality measurement systems that we build specifically for our metering systems take full consideration of ambient and climatic conditions. We supply all kinds of analyzer housings from on-skid cabinets and shelters, to complete analyzer houses in GRP, reinforced concrete or steel. All our analyzer housings are fully pre-assembled with piping, sample tubing, electrics, power distribution, sampling systems and analyzers. They are fully compliant with the site’s hazardous area classification and can be supplied as complete stand-alone units with redundant HVAC, and a dry section for the flow metering and calibration & validation system.

What good is flow measurement without exactly knowing the quality and composition of your hydrocarbon?

In addition to flow, pressure, and temperature; other measurements such as viscosity, water cut, composition, dew point and sulphur content are needed to determine the quality and the exact value of your hydrocarbon liquids and gasses under sale.

Representative Sampling Guarantees Perfect Analysis

We design and build sampling, analyzer and quality measurement systems to suit your specific metering application. From sampling probe and determination of the correct take off point, to sample conditioning, grab sampling and sample storage - we guarantee that a representative sample is taken. This representative sample is processed in our analyzer package. The analyzer and quality measurement system is fully equipped with gas chromatographs, dew point, BSW, density analyzer complete with certified calibration equipment and gasses.
From a Single Meter to a Complete Loading Operations System

- Loading & Offloading systems for ships, barges, rail cars, trucks
- Meters, loading arms, grounding system, flow control, drum, container, vessel fitting, ...
- Highly automated procedures for much faster and safe operations
- Management of technical loading, batching and commercial processes
- Co-ordinates & controls technical loading and batching processes
- Organizes order processing including paper work (loading documents, etc.)
- Custody transfer approved processes
- Suitable solutions even for marine Ex-areas and extreme working conditions
Mobile production units such as FPSO’s (Floating Production, Storage and Offloading vessels) have become increasingly popular for offshore applications. FPSO’s are mostly used for smaller oil fields and deep water oil fields.

Limited space and weight are important restrictions set by end-users for flow metering systems on any offshore application and particularly for mobile offshore production units.

Because of the limited accessibility to offshore locations for service and repair, high standards are set on the quality of flow metering systems. Flow meters should be highly reliable and require a minimum of maintenance. To save space, end-users prefer not to install mechanical provers offshore. In addition, flow meters or provers should never block the line.

Ultrasonic flow meters, based on the transit time principle, have a rugged construction, a large dynamic range, are easy to install without filters, measure independent of product properties and require minimal maintenance as they have no internal moving parts.

Not surprisingly ultrasonic flow meters as duty and MasterMeters have become increasingly popular for FPSO’s and for offshore. The applications vary from fiscal metering to allocation metering, production metering, export metering, metering of crude oil and sea water after the separators, well-water injection, off-loading and shuttle tanker loading.
Our service does not stop at the delivery. The KROHNE Oil & Gas TICS (Testing, Installation, Commissioning & Service) supports you through to commissioning and start up.
Throughout the whole life-time of your installation, you can have direct access to over 80 years of in-depth expertise in measurement engineering.
Our service engineers and specialists in the field will not only look after your equipment, they will pass on their knowledge to you in seminars, in ways that are easy-to-understand and solution-oriented.

Global support at your doorstep
» Front-end engineering and design studies (FEED)
» Feasibility studies
» Site inspections and surveys

» Installation
» Commissioning
» Start-up

» Initial and periodical verification
» Service level agreements
» Periodical surveys
» Remote support
» Training
Experience and Expertise on Site

Training

We offer complete off-site, on-site and in-house training for all aspects of your operation, from preventive maintenance to trouble shooting, from operational to calibration & validation training. Moreover, we can give basic training in the fundamentals of liquid and gas metering, shore tank management and leak detection systems.

Installation

Besides training your people, we can actually help them prior to the installation, on-site during the installation and after installation to ensure trouble-free and on-time execution of your project.

Commissioning

All systems and products supplied by KROHNE Oil & Gas are pre-commissioned during In-House and Factory Acceptance Tests before they leave our facilities. Once on site, we have teams of internationally experienced engineers to get your new system up and running with the least possible delay.

Service

After accompanying your engineers during the installation and commissioning of the system, we offer you the highest level of support through flexible service level agreement (SLA) packages that you can tailor to your needs.
System Revamps and Upgrades

You can call on KROHNE for a change-out, an upgrade or de-bottlenecking. Whether it requires a single flow meter, a meter run, an analyzer system, flow computing or a metering supervisory system:

KROHNE Oil & Gas will fulfill your needs.

We execute simple to highly complex upgrade projects. We can update your technology, and improve your operation. Over the many years, we have covered all aspects from hardware to software, such as:

» Introducing hydrocarbon asset management, integrating your existing systems with SynEnergy
» Revamping the existing custody transfer metering system with state-of-the art ultrasonic flow meters
» Redundant supervisory systems
» Redundant flow computers
» Replacing all redundant transmitters
» Metering houses with HVAC
» Sample conditioning system
» Gas chromatographs
» Relative density analyzers
» Dew point & moisture analyzers
» Fully automated validation system
From the well head, through pipelines, onto tankers and into the terminals and refineries; the flow of oil and gas products needs to be measured accurately and reliably.

That is the world of KROHNE Oil & Gas.

The scope of KROHNE Oil and Gas starts with custody transfer flow metering for oil, gas and liquefied gas and continues through tank management, loading and off-loading and leak detection and localisation systems.

KROHNE Oil & Gas is part of the KROHNE Group. KROHNE Oil & Gas’s headquarters are located in Breda, the Netherlands, close to Europe’s major Oil and Gas centres.

We have grown dynamically and now have one of the industry’s largest teams of engineers solely dedicated to oil and gas.

KROHNE Oil & Gas has manufacturing facilities in the Netherlands, UK, Malaysia, USA, Brazil, Colombia, Middle East. The headquarters in Breda services the world’s oil industry through its own offices and through the KROHNE group, in more than 60 countries worldwide. The parent company, KROHNE, has 42 owned subsidiaries and representatives for every country in the world. We make use of this network to maintain a high level of service for our customers.

KROHNE Oil & Gas provide specialised knowledge first-hand with the backing of the world’s most knowledgeable concern in the field of flow measurement technology.

KROHNE Oil & Gas Overview

Systems

• Flow Meters for Custody Transfer
• Liquid Flow Metering Systems
• Gas Flow Metering Systems
• Wet Gas Metering Systems
• Provers & Master Meters
• Flow Computing, Supervisory Software & Analyzer Management
• Calibration Systems
• Tank Inventory & Management Systems
• Analyzer Houses and Shelters
• Loading & Off-loading Systems
• Leak Detection and Localisation Systems
• Revamps & Upgrades
• Testing, Installation, Commissioning, Service
• Training

Products

• Gas Ultrasonic Flow Meters for Custody Transfer
• Liquid Ultrasonic Flow Meters for Custody Transfer
• Mass Flow Meters for Custody Transfer
• Venturis for Wet Gas Metering
• Prover sphere detectors
• Flow Computers
• Supervisory Systems
• Meter Validation Software Packages
• Electromagnetic Flow Meters
• Level Measuring Instruments
• Variable Area Flow Meters
• Temperature Measuring Instruments
• Pressure Measuring Instruments
• Analyzers
• Vortex Flow Meters
• Flow Controllers