Metering Systems

Expert led metering solutions for the most challenging environments.
Alderley has been engineering fiscal metering systems for over 50 years and is best known for its quality, reliability and expertise in metering technologies, regulations and standards.

Our experience includes all metering techniques in varied applications along with analytical systems, provers and control panels. Our on-going dedication to the oil and gas industry means that we are continuously helping to develop new techniques and standards. We have supplied some of the largest metering systems in the world, including cryogenic liquid ethylene.

At Alderley, we believe that your metering systems should be designed and built to protect your bottom line.

- Independent supplier
- Dedicated systems integrator for the onshore and offshore oil and gas industry
- In-house skid fabrication and assembly
- Biggest manufacturing facilities in our field
- Extensive knowledge and experience in standards and technologies

Customer/Contractor:
Ras Laffan Liquefied Natural Gas Co. Fluor Transworld Services Inc.

Project:
Ras Laffan 3 Common Offplots Project, Qatar

Description:
4 x cryogenic LNG metering systems utilising ultrasonic flow meter technology. Walk in analyser shelter with gas sampling and chromatograph. Operating temperature -162°C.

Customer/Contractor:
Technip France

Project:
FLNG, East Browse Basin, Offshore North West Australia

Description:
Cryogenic export metering systems for propane and butane, plus an export metering system for condensate. All packages utilise coriolis mass flow meters in 4 x 33% configuration with a parallel master meter stream. These engineered skids were supplied with control systems, a supervisory system and sampling.
Customer/Contractor: BP Exploration

Project: Quad 204, North Sea

Description: Oil metering system with 4 x 33% export streams, 12” ultrasonic meters with a 30” bi-directional prover and sample system. Gas metering system with 2 x 100% export meter streams, 4” ultrasonic meters and one import meter stream. Includes gas analyser house, gas chromatographs and associated control systems.

Customer/Contractor: Saudi Aramco

Project: Sales gas to Yanbu through AY-1 Pipeline conversion

Description: 2 off gas metering packages consisting of the largest gas ultrasonic meters currently in operation (36”).

Customer/Contractor: KOC/KNPC

Project: LSFO, FG and Gas Oil Pipelines Project, Kuwait

Description: 5 gas metering skids with stream size between 12” and 20”, with 4 duty streams, 1 spares stream and 1 check stream using ultrasonic flow meters. Also contains gas chromatograph, analyser shelter and control system.
Gas and Liquid Metering
Delivering high accuracy metering packages

We have the experience and knowledge to deliver high accuracy gas and liquid metering, proving, master metering and calibration packages whatever the technique required. Different technologies have different benefits and we can help you to make the right choice for your application.

Technologies include:
- Ultrasonic Meters
- Orifice Meters
- Turbine Meters
- Venturi Meters
- Coriolis Meters
- PD Meters
- Proving and calibration

Our knowledge, combined with engineering and fabrication expertise, ensures that your accuracy, reliability, safety and cost requirements are met. Having total control over our in-house fabrication, ensures you will get your system when you need it.

Gas Metering
Whatever technology you prefer, whatever your budget, whatever the application – our engineers have the knowledge and experience to deliver high accuracy gas metering packages to meet your needs. As an independent supplier that has been leading gas metering advances for decades, we can help you to make the right technology choices for your project.
Liquid Metering

We are experienced in delivering high accuracy metering solutions for all types of liquids from high viscosity crude oil to cryogenic liquefied gases. Our engineers have the knowledge in all types of proving, master metering and calibration systems and can carefully integrate sampling and analysis instrumentation to ensure high accuracy.

Alderley have extensive knowledge and experience in all types of proving solutions – from the commonly used bi-directional prover to special solutions for challenging applications. We can supply a system as a standalone device or as a carefully integrated component of a total metering package.

- Bi-directional ball provers
- Small volume provers
- Master metering
- Water draw calibration systems
- Portable provers

LNG Metering

Our systems have formed an industry standard for custody transfer metering of LNG (Liquefied Natural Gas) around the world.

Since 1977 Alderley has been manufacturing custody metering stations for Liquefied Gases – tackling the challenges that cryogenic temperatures, low fluid lubricity and potential flashing bring. We have worked with meter manufacturers to deliver coriolis and ultrasonic metering solutions that meet the specific requirements and challenges this application brings.
Control Systems
Open architecture designed for you by industry professionals

A high accuracy metering system requires a comprehensive, reliable and workable control system to collect and process metering data. Alderley has designed, engineered, tested and delivered hundreds of control systems – from simple, standalone flow computers to sophisticated panels incorporating dual redundancy and the latest in supervisory systems.

Supervisory Systems
Alderley have a great deal of experience in implementing a variety of supervisory system technologies and architectures. Our knowledge and experience in this area has led us to create our own supervisory system - HAWK.

Hawk offers all that you would expect from a modern supervisory control solution. It is designed to provide you with clear graphics and secure, extensive functionality to meet internal, partner and national procedures and regulations.

As you work with Alderley for the supply of your control system you will benefit from our control system engineering and project management expertise, whatever technology you select.

Key features include:

- Sampling
- Flow balancing
- AGA, API and ISO calculation libraries
- Time and flow weighted averaging
- Real-time and historical trending
- Graphical monitoring of the complete process
- Easy implementation of a dual redundant configuration
- Alarm/event handling
- Remote access
- Performance monitoring and diagnostics
Key benefits include:

- Advanced and usable operator and engineer interfaces
- Qualified and proven SCADA package
- Open architecture
- Server class PCs
- Proven hardware
- Powerful reporting
- Mimics
- Dual power supply
- Designed to work with all flow computer types

Operations Training Simulator

Alderley offer an Operations Training Simulator especially designed for training operators on metering control systems. This technology enables effective training to take place in a safe and controlled environment with no possible way to damage equipment.

Training will be carried out in a classroom environment and can be delivered at any stage of the project lifecycle.

Alderley also has the ability to design a bespoke operations training simulator not only for new control system projects but any control system that Alderley have supplied in the past.

Software Applications

Providing an integrated suite of fiscal metering management software, designed to manage all key measurement activities.

- Flow measurement calculation package
- Instrument management system
- Turbine meter tracking
- Electronic logbook
- Meter proving management

Comprehensive, reliable and workable control system solutions.
Sampling and Analysis
Carefully integrated to maximise accuracy and reliability

- Vast understanding of technologies
- Chromatographs
- Filtration and Gas Conditioning
- Fast Loop Sampling
- Water-Cut Analysis

All high accuracy metering requires representative product quality measurement by sampling and analysis.

Our design and engineering expertise ensures that every component is carefully integrated to maximise accuracy and reliability. Our thorough understanding of technologies, applications and standards enables us to meet your technical specifications and gives you confidence in a measurement solution that delivers all of your project requirements.

- Vast experience in all areas of metering
- Independent advice on selection of best technology
- Complete integrated solutions - reduced risk, improved accuracy and reliability
- Innovative solutions for the most demanding application
Alderley can integrate real-time measurement of density, chromatographic composition, Wobbe index, calorific value, dewpoint and sulphur into your gas metering package with associated pressure reduction, filtration and gas conditioning systems as required.

Alderley can provide all sampling and analysis commonly associated with liquid custody transfer, including fast loop or insertion automatic sample systems with single or multiple atmospheric or pressurised sample receivers, density and viscosity measurement, water-cut analysis, and other less common requirements such as RVP analysers and LPG chromatographs.

Systems are supplied complete with all necessary mixing (static or powered) to ensure samples are fully representative.

Innovative solutions for the most demanding applications.
Services
Focusing on through-life support care for our customers

From project execution, installation and commissioning to through-life support care, our service packages can be tailored to your exact requirements. We have decades of experience and a total focus on the oil and gas industry – so you can rest assured that you will be dealing with people who fully understand your application, process and the challenges that you face.

Our commitment to our customers and to the oil and gas industry is absolute. We are always happy to discuss specific requirements and advise on the best support package for you. We have invested in the facilities and people to bring the services you need closer to you.

Alderley can provide assistance with:

- Installation and Commissioning
- Upgrades
- Spares Management
- Training
- CBM
- Care and Maintenance
- Calibration and Certification
- Hazardous Area Inspection

Installation and Commissioning
In the early stages of your system’s life, we want to ensure you get everything you need to meet project timelines and site needs. Along with providing support for installation and commissioning, Alderley also provide Factory Acceptance Testing (FAT) at our manufacturing locations or Site Acceptance Tests (SAT) on-site across all our product offerings.

Brownfield Upgrades and Modifications
Through our team of multi-disciplined, experienced engineers, Alderley can provide solutions for all brownfield modifications and upgrades across all our product offerings. Our integrated solutions look to maximise performance from existing assets and extend the life of production facilities.

Spares Management
Through planned maintenance schedules, management of spares, repair services and obsolescence support, we help customers plan their Operational Expenditure (OPEX) as well as assist in reducing costs associated with downtime and carrying excess inventory.
Metering Training
Alderley’s training programmes offer best in class courses that can meet the needs of your staff, whether training for a specific project or piece of equipment. Courses can be held at any of Alderley’s facilities or on-site.

Condition Based Monitoring (CBM)
Helping operators to reduce operating costs, Alderley offer Condition Based Monitoring (CBM). This CBM approach allows Alderley to spot upcoming equipment failure and proactively schedule maintenance when it is needed - and not before.

Care and Maintenance
Understanding that it is more efficient to prevent a problem than to repair it once it has happened, Alderley’s customer care ensures that you get the maximum value from your assets. All customer care contracts are as bespoke as our applications, but can typically include a guaranteed call out time, telephone support, periodic system health checks, off-site software backups and electrical and instrumentation site audits.

Calibration and Certification Services
A full Certification Service is offered by our service specialists. From meters to test equipment, Alderley can supply calibration certificates from internationally or nationally accredited laboratories.

Consultancy and Audit Services
Our services include flow measurement consultancy, UKAS certified independent audits and uncertainty calculations.

Hazardous Area Inspection and Design Services
For all our product offerings we can provide ongoing hazardous area inspection, maintenance, testing and design services to ensure you remain compliant with industry regulations. Whether onshore or offshore, Alderley have the equipment and experience of CompEx or IECEx Certified Inspectors to support your internal technical services department.

When you choose Alderley as your project partner we will stay with you every step of the way.