



OUR  
ENERGY  
SERVING  
YOURS



**GGGS**  
OIL & GAS  
SYSTEMS

Put your trust in years  
of know-how and field  
experience

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## Profile

As an independent system integration company GGS is specialist in design, production and implementation of completely integrated flow metering solutions for custody transfer oil and gas projects, worldwide. Besides the flow metering solutions, GGS can also be your partner in gas filtration, pressure reduction, flow control or gas treatment installations.

Our customized solutions range from consultancy, design, engineering, project management, procurement, system integration, installation, commissioning and aftersales services.

GGS employs a team of dedicated industry professionals with a wealth of knowledge and experience, to meet even the most demanding and sophisticated engineering challenges.

GGS works closely with our customers to provide the most cost-effective and highest quality solutions. Every solution we deliver is a tailor made job; designed, engineered and built based on the customer's specifications and requirements, as well as international industry standards and best practices.

Our commitment to our customers is our number one priority, which we back up with a network of representatives and partners around the world, to anticipate the needs of our customers and deliver on every commitment in the most efficient manner.

This unmatched combination of industry knowledge, project management skills, hands-on experience and customer-focused commitment, makes GGS an ideal choice to manage your project needs.

GGS delivers flow metering systems for both offshore and onshore locations... around the globe.

"Customers choose GGS because of its ability to provide turnkey solutions and systems that meet their critical needs, from initial design through testing and commissioning. GGS brings single-source responsibility to every system it builds by integrating the leading technologies for maximum result. In the eyes of our customers, GGS stands for partnership, technical excellence, quality and service".

Karl Aerts & Peter Himschoot - Managing Directors GGS



# GGG Headquarters

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With over 30,000 square feet of industrial facilities, GGS is fully capable of meeting the increasingly complex requirements of its ever widening customer base.



# Facility

GGG operates from its modern, custom-built offices and workshop facilities in Kalmthout, Belgium. With over 30,000 square feet of industrial facilities, GGG is fully capable of meeting the increasingly complex requirements of its ever widening customer base.

Our business centre comprises e.g. design and engineering offices, a system integration zone / warehouse and a 8000 sq.ft. workshop area for the production and testing of the (skid mounted) solutions.

Our state of the art manufacturing facility is the center of excellence for manufacturing and assembly of all the solutions GGG offers. From the assembling of analyzer systems to manufacturing of analyser shelters, metering skids, control panels and some of our in-house developed measuring instruments; our manufacturing facility is well equipped with all the required materials and tools.



# Turnkey solutions for oil and gas

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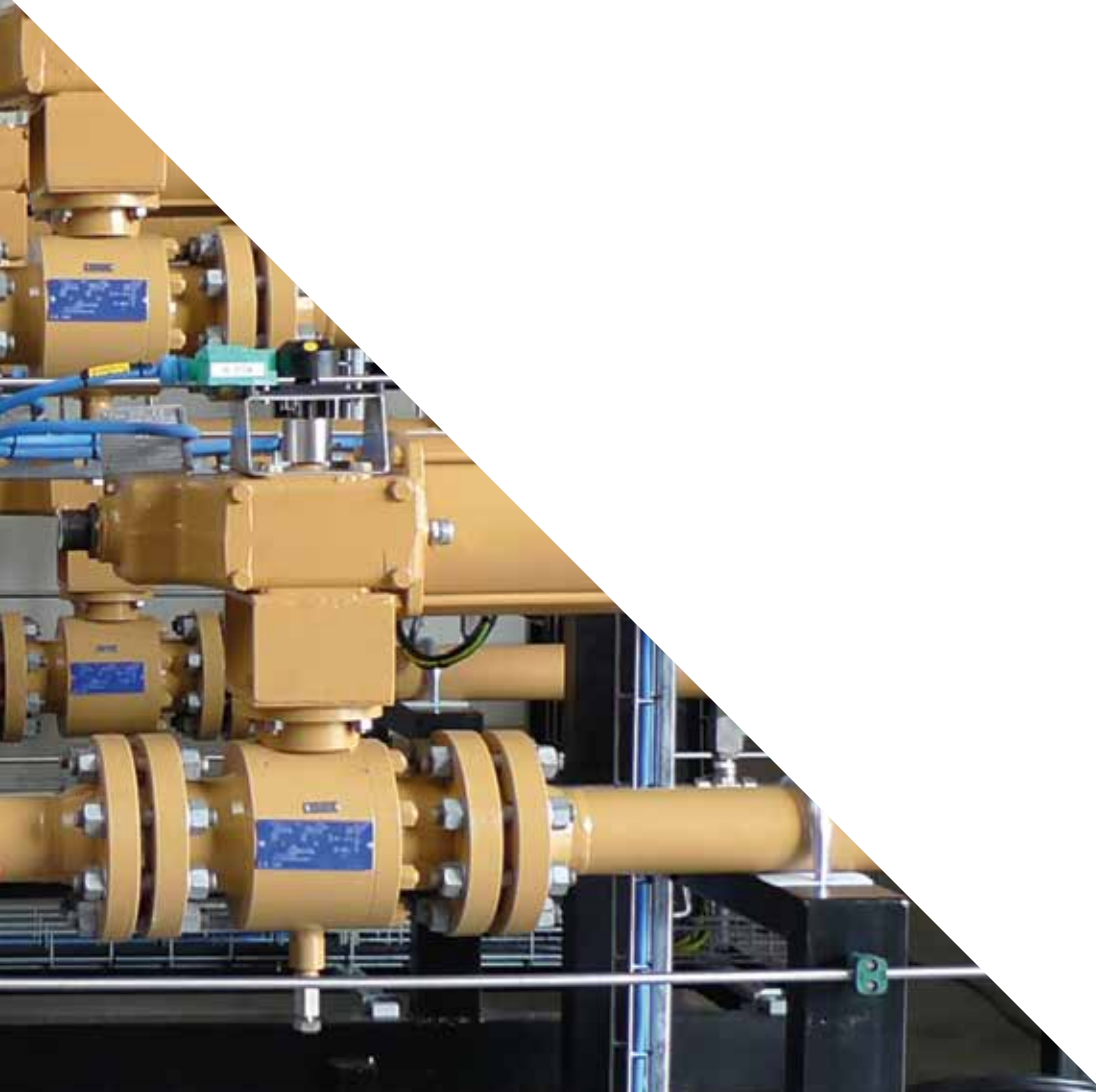


## GGG combines:

Customized engineering capabilities, consulting, reliable products, and project management with industry expertise and services to provide innovative, integrated custody transfer measurement solutions for both oil and gas measurement.

These comprehensive capabilities coupled with leading edge technology are the key to our customer's success. We have in-house knowledge of numerous types of operations and products which we can demonstrate and back-up with our extensive list of references and recommendation letters.

Repeat orders from our valued customers are our best recommendations.



We have the biggest range  
You have the biggest choice

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## With our experienced engineers and reliable and open solution portfolio, GGS has the ideal arsenal to meet any challenge.

As a fully independent system integration company, with continuous quest for quality, we ensure offering our customers a choice of best-of-breed products and technologies. Not being connected to any particular manufacturer allows us to comply with our customers' preferred makes or models.

GGS supplies metering systems based on the best available technology on the market. Instrumentation is selected purely on its suitability for the purpose, application and customer/end user preferences.

### Strategic application with the best fit products

The purpose of innovation is to create higher value for our customers. As such we have established strategic alliances with the leading product manufacturers in the market to provide only reliable, most effective and field-proven equipment for our solutions.

This mutually beneficial approach not only ensures that equipment for our project is supplied at competitive prices in the shortest possible time, but also significantly cuts down expenses and reduces the time within the framework of the project as a whole.

In selecting GGS, you are choosing a partner who offers the best measurement solution for your needs, **enabling maximum return on investment.**



# GGs multidisciplinary expertise

GGs supplies innovative, engineered solutions. Our engineering and project management practices deliver consistent results.

As oil and gas projects become increasingly demanding and face ever-tighter schedules and regulatory restrictions, engineering expertise in these fields becomes a vital concern

Our core business is System Integration. Our attention to detail and quality is apparent in the finished project. When GGS is involved at the front end of Project Development, our concept engineers work closely with you to determine the enclosure features and requirements of your system. Once the requirements are finalized, we design, integrate, and manufacture your metering applications into a single turnkey measurement system.



GGs has an experienced in-house team of specialists in mechanical engineering, (flow) instrumentation, electrical engineering and process automation, (PLC, DCS/ SCADA).

Quality assurance is the key to any project, from project definition to engineering and on-site installation. The flowmetering systems are constructed in accordance with national and international standards, manufacturing codes and company requirements. Essential to any project is on-time delivery to meet customer planning commitments.

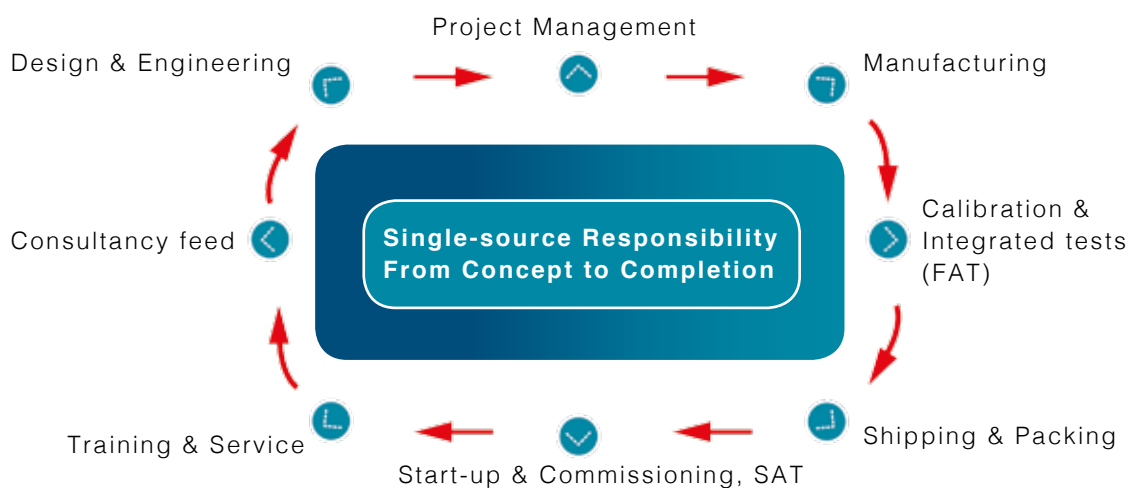
Based on mutual cooperation we analyze your unique requirements and provide answers to your technical and business problems. We have the people, the technology and the expertise to optimize performance, conserve resources and exceed regulations.

Consider us as your global partner for all your oil and gas measurement needs. **We supply low-risk solutions, high performing product and the finest customer support.**

# GGG follows a 360-degree solution-driven project approach.

Total commitment; support in every phase of the project.

Since system manufacturing involves custom design and fabrication, GGS's highly skilled project management and engineering teams offer complete support in every phase of the project.



## Benefits of using the GGS Project approach:

- Improved schedules: engineering, commissioning and start-up time reduced
- Lower costs: reduced spending on engineering, start-up and maintenance
- Increased productivity: total plant availability and throughput improve maximization of the plants profit margin
- Best use of technology: truly integrated best-in-class as well as fit-for-purpose solutions that build in long-term benefits
- Project execution excellence: a single integrated team with global reach and resources
- Life-cycle management: from competency to post commissioning support to full service
- Lower project risk: everything working right the first time

# GGS Custody Transfer Flow Metering Systems for Gas and Liquid Application

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GGS is specialized in the design and assembly of turnkey skid mounted solutions. Offering a wide range of advantages during installation, commissioning and start-up phases, as valves, equipment, instruments, piping, mechanical and electrical are preassembled at our workshop, making on-site installation easier.

GGS designs and manufactures Custody Transfer Flow metering Systems for Gas and Liquid Applications.

GGS designs and manufactures Custody Transfer Flow Metering Systems for Gas and Liquid applications. These systems are manufactured in line with the latest international relevant standards and with the most reliable design. The complete system design and detailed engineering complimented by proper sub-vendor selection ensures a high level of measurement accuracy, which is the primary requirement of Custody Transfer Flow Metering Systems. Our metering systems comprise of filtration, pressure reduction, metering section and also enjoy the flexibility to be interfaced with external systems like flow computers; gas chromatographs etc.



As part of our package, GGS can provide turnkey flowmetering systems, including:

- Fully integrated metering skid flowmeters (ultrasonic, turbine, Coriolis mass, et cetera), valves and piping and instrumentation (temperature, pressure, et cetera)
- Analyzer houses with sampling systems, and analyzer systems for density, viscosity and gas composition
- Supervisory and flow computer systems including flow computers, control panels and customer interfaces
- Validation systems
- Meter Prover systems (for liquid application)

## Benefits of using the GGS Project approach:

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- Pre-fabricated
- Tested
- Painted
- Skid mounted (as far as technically possible)
- Cabled

# GGG oil and gas custody tran

## ANALYZER HOUSES

- > Analyzer
- > Sampling systems
- > Density
- > Gas composition

## SUPER & FLOW COMPUT

## FLOW COMPUT

### FULLY INTEGRATED ME

- Flow meters: Ultrasonic, orifice
- Piping & Valves
- Other instrumentation: tempera

## CALIBRATION SYSTEMS

- Basic and standards Laboratories
- Temperature, pressure, volume and mass
- Gas quality laboratories
- Composition of calibration gas
- Basic verification systems and Calibration installations
- Displacement unit, ball prover, master meter, rotary piston prover

## LIQUID S

### TYPE OF PRODUCTS

- Crude oil
- Condensate
- Refined products
- Liquid propane / butane, LNG, etc.
- Multiproduct

# Transfer measurement solutions

ADVISORY  
&  
METER SYSTEMS

VALIDATION  
&  
PROVING SYSTEMS

## METERS & CABINETS

### METERING SKIDS WITH:

, turbine, Coriolis, etc.

Temperature & pressure transmitters, etc.

## METERING STATIONS

### TYPE OF METERING PRODUCTS

- Flow metering systems for
  - » Offshore platforms, FPSO's
  - » Transport / pipeline & terminals
  - » Loading & offloading
  - » Refineries
  - » Calibration & verification
- Fiscal & custody transfer metering and allocation metering

## GAS STATIONS

### TYPE OF PRODUCTS

- Metering
- Pressure reduction
- Metering & pressure reduction
- Metering & flow control
- Filtration

### TYPE OF GAS STATIONS

• Upstream systems	<ul style="list-style-type: none"> <li>» Production metering onshore &amp; offshore</li> <li>» Multiphase metering</li> <li>» Measurement for gas &amp; liquid</li> <li>» Gas and liquid sampling</li> <li>» Analyser systems</li> <li>» Pressure &amp; flow control</li> </ul>
• Border crossing systems	<ul style="list-style-type: none"> <li>» Metering</li> <li>» Flow control</li> <li>» Gas analysing systems</li> </ul>
• Transport Measurement	<ul style="list-style-type: none"> <li>» Metering</li> <li>» Gas analyzer systems</li> <li>» Flow / pressure control</li> </ul>
• City Gate stations	<ul style="list-style-type: none"> <li>» Large and industrial stations</li> <li>» Metering</li> <li>» Pressure control</li> <li>» Gas analysing systems</li> </ul>
• Distribution stations	<ul style="list-style-type: none"> <li>» Metering</li> <li>» Pressure control</li> <li>» Filtration</li> </ul>

# GGG total measurement

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GGG is a trusted partner that provides experience and technical expertise to identify the right product or system solutions to solve any application challenges. Our understanding of your application ensures that we are able to design and provide the solutions that meet your requirements to the utmost.





# Flowmeters

The primary device in any flowmetering system is the flowmeter itself. Besides accuracy, reliability is the other main criterion that customers use when choosing a flowmeter.

Calibrations and testing are important and are often required by regulatory agencies.

Product manufacturers and end users need flowmeters that will perform to the highest levels through long service lives. Our team has the knowledge and experience of supplying systems using the entire range of techniques from orifice plate to turbines and ultrasonic meters.

Our engineers ensure proper selection and sizing of meters for each application:

## > Gas

Our Gas metering Systems are manufactured using:

Ultrasonic, Orifice Plate, Turbine Meters, RPD Meters, Coriolis Mass Flowmeters as Primary Flow elements, in accordance with relevant AGA and ISO standards.

## > Liquid

Our Liquid Systems are manufactured using:

PD Meters, Coriolis Mass Flowmeters, Turbine Meters, Orifice Plate, and Ultrasonics as Primary Flow elements.



Different techniques offer different benefits. We can help you make the right choice for your application.

# Quality, analyser and sampling systems

High accuracy metering requires representative quality measurement by sampling and analysis. Careful integration of this measurement into the metering systems as a whole is the key to accuracy, whether it is stand alone or mounted as part of the metering package itself.

GGs designs and builds sampling, analyzer and quality measurement systems to suit your specific metering application. If you want to know which technology is best suited for any particular case, GGS will provide you with support in selecting and installing the most appropriate system.

If you want to know which technology is best suited for any particular case, GGS will provide you with support in selecting and installing the system.

For gas metering systems we can deliver, among others, the following quality systems:

- Gas Chromatograph systems with or without sample condition systems and dedicated air-conditioned analyser shelters
- Automatic sampling systems
- Density analyser systems
- Dew point analysers
- H<sup>2</sup>O analysers
- H<sup>2</sup>S analysers

For liquid metering systems, we can deliver, among others, the following quality systems.

- Automatic sampling systems
- Density analyzer systems
- Band SW analyzers
- LNG sampling/ analyzer systems



## Analyser shelters

In order to achieve high availability and precise measurements, it is a common practice to install analyser systems within protection shelters/housings. GGS designs and manufactures analyser shelters as a complete solution individually made to meet customer needs which can range from complete air conditioned and sheltered systems to simple rack mounted analysers for field installation.



This analyser house, supplied by GGS as an integrated part of an onshore gas metering system, includes C9 + Gas chromatograph, sample conditioning and automatic sampling system providing the complete analysis solution.

# Control panels and systems

In today's world, even the simplest systems require at least some degree of electronic logic control and monitoring. At GGS, we design, build, test and install Station Control Systems. This is usually carried out as an integral part of a turnkey metering system but also as separate systems to complete existing installations.

The Control Unit is usually situated in the Operations Control Center and contains the Flow Computer cabinet with its flow computers, station controllers and all of the necessary communications and IT equipment required for collection of data, analysis and diagnostics, and transparent transfer of information.

Its most important elements are:

## > Flowcomputer

As well as being the engine room of the metering skid, the flow computer also provides the required reports and data to the supervisory system. The ability to interface with and acquire data from a variety of smart and intelligent instruments (including flowmeters, temperature and pressure transmitters, density, and gas chromatographs) is essential.

Flow computers provide a secure and auditable, real time window to the measurement system. The flow computer can be used stand-alone, but is typically integrated into gas or liquid metering systems with a supervisory computer.



Our experts can configure any type of flow computer to meet any international standard.

## > Supervisory system

Supervisory systems dedicated to metering is part of our portfolio. It takes into account the very specific needs in terms of allocation and fiscal metering.

A supervisory computer system performs all functions from a central control system to enable proper dispatching and planning. Special functions include scheduling and planning, run switching, leak detection, historical archiving, proving, maintenance and reporting.

GGG has extensive experience in supervisory systems specific to gas applications. Such systems solutions are designed in-house by GGG, supported by any of the widely available third party software. All of our solutions can be fully integrated into the operator's own DCS/SCADA systems and can include additional features such as secure remote communication.



GGG has an 8000 square feet modern and fully equipped facility in Belgium to build instrumentation and control systems, including assembly, wiring and testing. Construction, testing and installation are supervised by an in-house master electrician, while engineering specialists ensure that all construction projects meet or exceed applicable international standards.

# Service and Support

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Global solutions, local support.



# **GGG services are all focused on making sure you get the maximum value, performance and efficiency out of your investment.**

Whatever your expectations or your installed product and/or the size of your system, GGS has a full portfolio of services resulting in solutions for all events.

## **Our service offerings include:**

- Consulting
- Installation and commissioning
- Maintenance and field services
- Repairs and calibration
- Spare parts and consumables
- Support, remote service
- Training
- Maintenance support agreements

### **Providing local support is the key of our philosophy.**

GGG has experienced and highly competent service and commissioning engineers available at short notice around the world.

**“Thinking globally acting locally”**  
service centers at strategic places on the globe

# Quality

In addition to meet industry regulations and standards, flowmetering systems must also comply with contractual and statutory requirements. Quality in design and manufacture are the foundation of achieving compliance.

With our wealth of experience, we ensure that quality is the key that secures your flowmetering system. The GGS Quality Management System complements our business and provides the most logical direction to a quality solution.

# Standard compliance

GGS is a fully certified ISO 9001:2000 company and works strictly in compliance with these guidelines.

GGS received numerous approvals from major international notified bodies. The Quality Management System assures that all products comply fully the CE, VCA and PED regulations.



Certificate 658832



Systems are supplied based on national regulatory frameworks and international standards such as AGA and ISO and national regulatory frameworks such as DTI, NPD, PTB, NMI, DEA, GOST, ANP, SIRIM, OHSAS and DPR.

# References

GGS has successfully supplied metering packages and solutions for numerous oil and gas companies throughout the world. Our extensive reference list is available upon request.





# Quality and References

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GGs reaches into every corner of the globe. We serve the oil and gas and industrial marketplace, supplying an extensive range of solutions through a worldwide network of branch offices and agents.

**GGs is the right choice for your custody transfer flow measurement needs.**

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