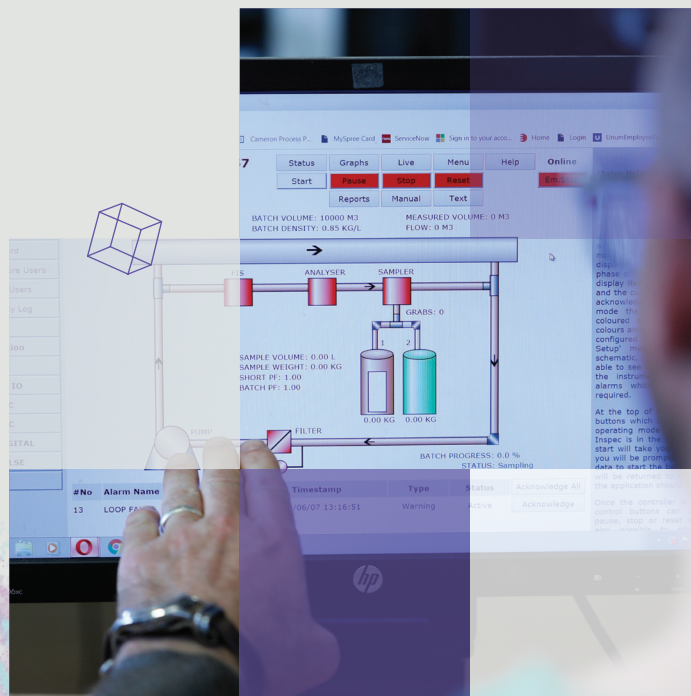




Measurement services

Product and system support



INTELLIGENT ACTION

Measurement support services

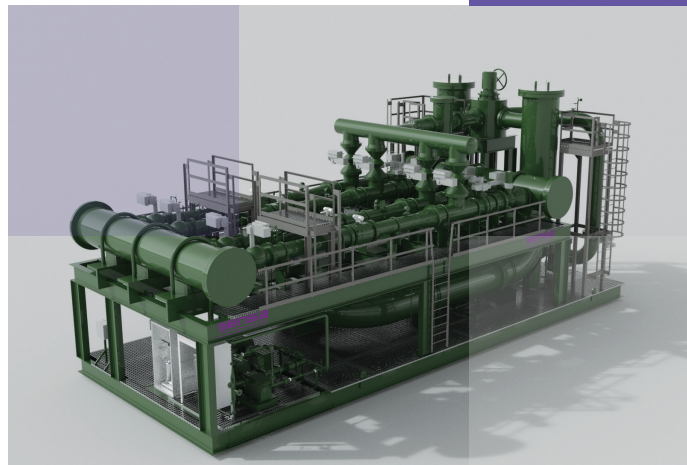
Through many years of experience, Sensia has built up a range of support services that are second to none.

This experience has led us to understand the needs and requirements of customers who handle complex process issues in a safe and economical manner, while still meeting business targets. We can support mission critical applications on Sensia engineered systems, including third-party systems and associated equipment. Our Service & Support organization is focused on attaining the highest possible standard in order to provide safe, accurate, and reliable system equipment that maximizes metering system availability to satisfy our customer's needs around the globe.

Through these comprehensive services, we can provide customers with an integrated and highly cost effective approach to the complete service support solution and asset management delivery.

Our global base of highly qualified support engineers have many years of experience in the support of systems that are critical to business and process. When you choose us to provide support for your system applications you can be safe in the knowledge that our engineers understand the need for a fast and effective response.

This is backed up by our in-house engineering and project management staff so that whatever the problem, location, or time, Sensia support services are there for you.



Installation and commissioning services

Sensia offer a range of installation and commissioning services, which extend to all aspects of hardware and software and includes third-party products. We have an experienced team of engineers who support our high accuracy metering systems, including fluid quality sampling and blending systems, and gas analysis equipment. Our engineers can assist with all aspects of site phases, including planning, design, installation, commissioning, calibration, start-up, and on-site training.

These services are supported by our in-house engineering and project management team to ensure that appropriate industry standards and procedures are adopted from system design to system handover to the certified authorities and end users.

Services offered include:

- + Installation supervision of metering systems
- + Pre-commissioning checks and tests
- + Commissioning to approved SAT procedures
- + Operational support on start-up
- + Live flow condition configuration
- + Calibration services including:
 - Flow meter laboratory calibration
 - Flow meter proving
- + Sampler water injection proving
- + Gas analyzer calibration



Verification and calibration services

Minimizing measurement uncertainty, compliance to standards and regulations not only requires engineering and design but also service and maintenance of the product and systems over their design life. To ensure performance our service group are able to provide the following services:

+ Meter proving:

Our engineer will check metering run and prover conformance to measurement standards and operating practices, verify mechanical and electrical integrity, back-up configuration files and verify run parameters and tolerances before the calibration begins.

Resolution on a failed proof, with the experience to identify meter out of tolerance or meter prover issues at an early stage and provide a solution for a successful proof trial.

+ Meter calibration

(at accredited calibration facility):

Our onsite specialist support is available to verify the installation, effect repairs, perform upgrade work, take configuration file back-ups, identify critical diagnostic anomalies, and apply meter factors post calibration, providing an effective solution for a failure condition.

+ Liquid sampling system calibration:

Our engineer will inspect the entire sampling system installation and will verify the test configuration with knowledge of site process conditions and operating procedures. The Water Injection Test Calibration report will detail all findings, ensuring that your sample system is operating within its specified uncertainty.

We will provide appropriate advice on operations, solutions, and upgrade benefits.

+ Gas analyzer calibration:

Our engineer will inspect the installation, analysis and calibration report history, verify the configuration, and provide installation and upgrade recommendations, including a routine maintenance plan. Analyzer repeatability and performance issues will be addressed, such that the analyzer is operating reliably, consistently, and at the stated uncertainty.

Maintenance contracts and services

Custody transfer metering systems are designed to keep measurement uncertainty to an absolute minimum. To sustain this target Sensia recommend that routine maintenance practices are carried out. This practice also maintains metering system availability so that all measurement streams are ready, reliable, accurate, and comply with site, national, and international standards for measurement.

Our team will work with our customers to create the ideal bespoke maintenance program that meets their exact needs, based on site personnel experience, and the requirements of the site processes.

A comprehensive health check of your system can range from one visit per year and can be backed up with data collection and analysis from a remote specialist. Where time means money a simple call maybe all that it takes to get your metering system back to full health. For more comprehensive issues, mature or obsolete equipment solutions, Sensia has the resources to accommodate all your needs.

We have formed alliances with other specialist and contracting organizations to enable us to provide you with a total maintenance and management solution, while retaining a single point of contact and management for your products and systems.

Our tailored maintenance contracts can include:

- + Maintenance support contracts, specific to your metering system needs
- + Reactive service support (guarantees engineer support in agreed time)
- + On call specialist telephone support 24hr/365 days per year
- + Scheduled maintenance visits, with supporting spares as an option
- + Remote system access for routine analysis and system diagnostics



Maintenance contract support services

Standard support packages can be modularized to satisfy specific customer support requirements

	Gold standard service support	Silver standard service support	Bronze standard service support
Priority support by phone or email (office hours)	●	●	●
Annually scheduled site service support visits	●	●	●
System health check, upgrade & obsolescence	●	●	●
Remote system file analysis and diagnostics	●	●	
Guaranteed mobilization to site (24hr/48hr/72hr)	●	●	
On call phone support 24hr/365 days per yr.	●		
Spares holding for reactive system repairs	●		



Spares support

Maintaining a manifest of spares on-site helps support equipment up time for those unexpected breakdowns. Options available include:

- + Parts management agreements
- + Spares storage
- + Extended warranty options

Lifecycle management

With knowledge of your installed metering system Sensia can track your system performance, device calibration and failure history, alarm frequency, and process condition changes to maximize the usable life of your metering systems. Our lifecycle management service team will advise and suggest design improvements, obsolescence recommendations, and operational change considerations designed to extend the life of your systems to achieve cost effective and efficiency benefits. We offer:

- + Asset Extension Programs to manage obsolescence
 - Spotlight issues and mitigating actions
 - Control risks associated with an ageing installed base
- + Firmware updates
- + Product upgrades/migrations
- + Spares stock recommendations

Training services

Our experience with the complete system solution, from project management, design, manufacture, installation, integration, commissioning, operation, and maintenance support, paves the way to impart our engineering experience to our customers. Sensia can provide comprehensive operation and maintenance training courses to meet all your educational needs. Its key to ensure your personnel are engaging best operating practices and are familiar with all components within your metering system. This ensures equipment and system safety, efficiency, and accuracy.

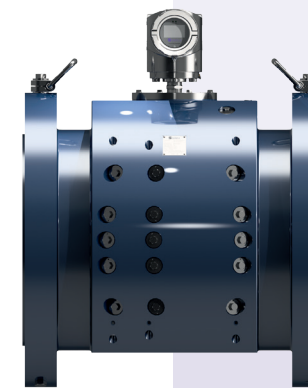
We can provide classroom training at our Sensia facilities globally, on-site training on the customers' installed metering systems, or optionally, training can be conducted online.

Training courses can be standard product operation and maintenance type courses, or application specific tailored to exact customer requirements.

Customers with active support agreements may benefit from discounts on training course fees.

Typical training courses offered include:

- + Generic oil & gas metering systems
- + Product quality systems (oil & gas)
- + Flow computer operation & maintenance
- + TruST (Metering supervisory systems)
- + Metering and uncertainty calculations
- + Ultrasonic flow meters
- + Turbine flow meters
- + Gas orifice flow meters
- + Liquid meter provers
- + Liquid sampling systems

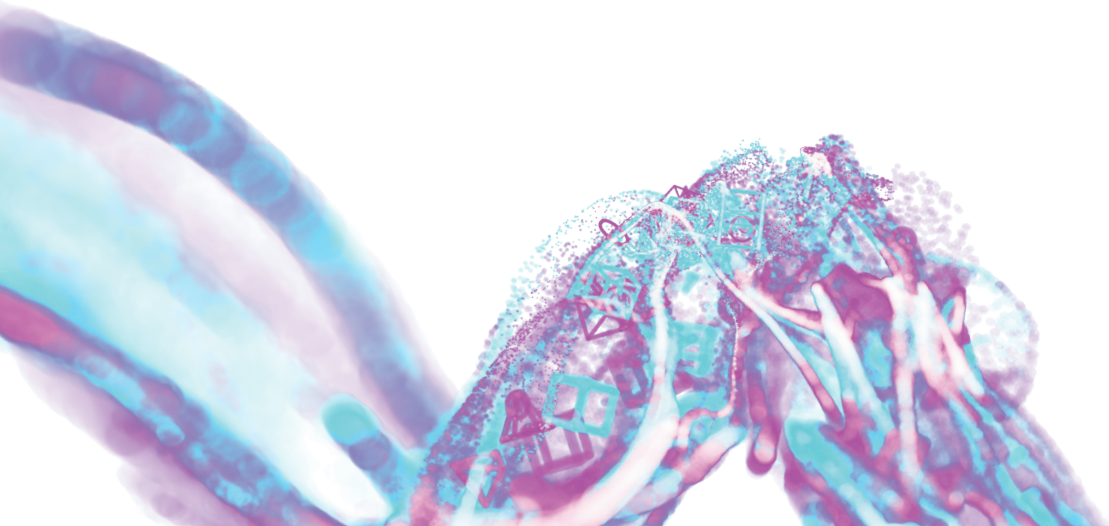


Site surveys

A comprehensive system inspection on a client installation can lead to a marked improvement in system performance, a reduction in process related issues, reduced maintenance intervals, and keeps the customer up to date with obsolescence issues, product design improvements, upgrade possibilities with subsequent benefits.

Surveys offered include:

- + Installed base evaluation surveys, with comprehensive report on the lifecycle status and condition for metering products and systems
- + Modification, expandability, and system upgrade surveys
- + System audit checks for compliance with operations and data handling
- + System improvement recommendations for safety, efficiency, and accuracy
- + Network & cybersecurity assessments and recommendations



Solving challenges from the reservoir to refinery. One challenge at a time.

We collaborate with all stakeholders to make the production, transportation and processing of oil & gas simpler, safer, more secure, more productive and better understood from end-to-end. Sensia is making the advantages of industrial-scale digitalization and seamless automation available to every oil & gas company.

Now every asset can operate more productively and more profitably.

Enquiries

To discuss your service support needs and requirements, to request a service support quotation, or to schedule a service event, please contact your local Sensia office, or contact us directly at:

Email: [**mea.support@sensiaglobal.com**](mailto:mea.support@sensiaglobal.com)

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