SIEMENS

# Greater transparency and smarter decisions for your business

Your One-Stop Shop for process instrumentation, process analytics and weighing technology

# Measuring everything that matters

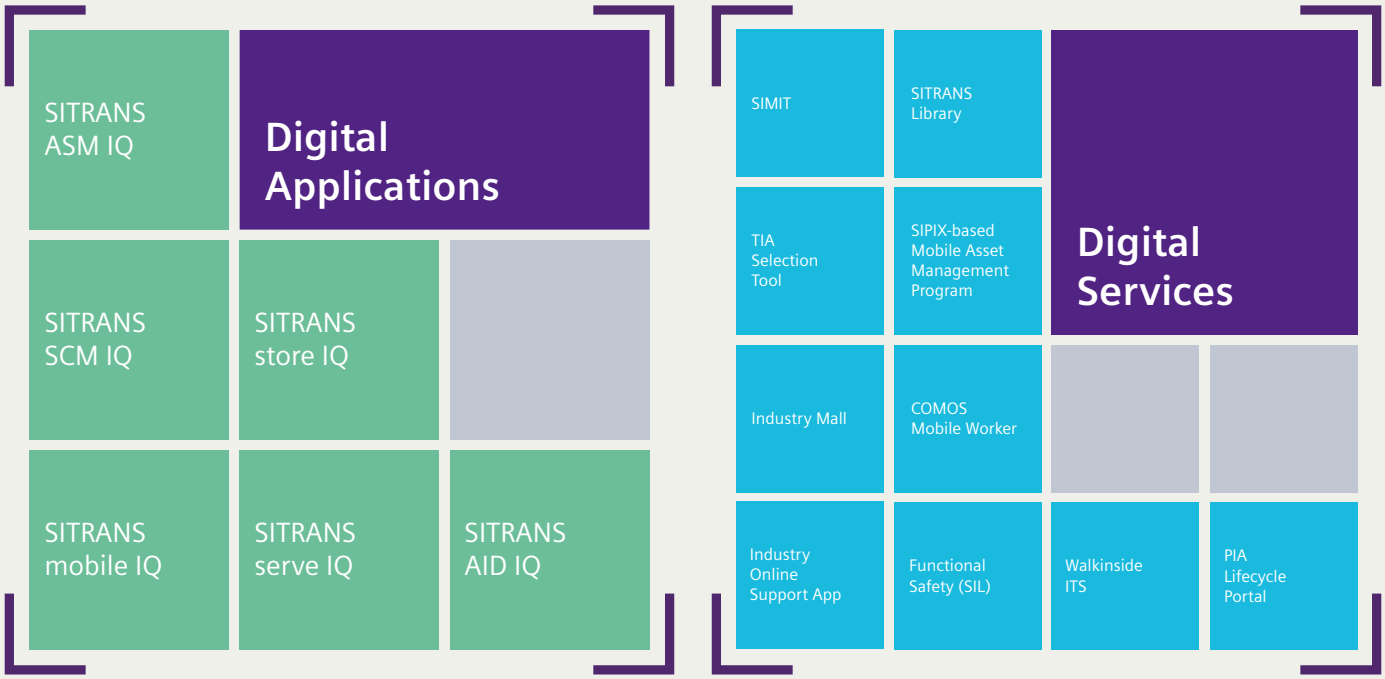
Siemens offers a complete service package as well as all measuring instruments to assist you in engineering, designing, supplying, installing and commissioning measurement solutions for complete industrial plants. Our “one-stop shop” concept supports selection of all process instrumentation and analytics all the way to integration with your process control system. Additional industrial components and systems are easily incorporated into the overall plant and ensure smooth process flows.

Whether process instrumentation, process analytics or weighing and dosing systems, our solutions meet the requirements of process industries such as chemicals, oil and gas and hydrocarbon processing, water and wastewater, pharmaceuticals, mining, aggregates, cement, pulp and paper, food and beverage or shipbuilding.

# Index

# **Our digital offerings** at a glance

With Siemens digital offerings we offer a comprehensive suite of tools and platforms designed to revolutionize industrial processes. These services are engineered to enhance efficiency, safety, and reliability across various industries. They provide advanced monitoring, asset management, safety, and efficiency-enhancing capabilities. By leveraging Siemens digital expertise, industries can optimize their operations, improve asset performance, and ensure compliance with safety standards. These digital services represent a commitment to innovation, delivering tailored solutions to meet the evolving needs of industrial processes.

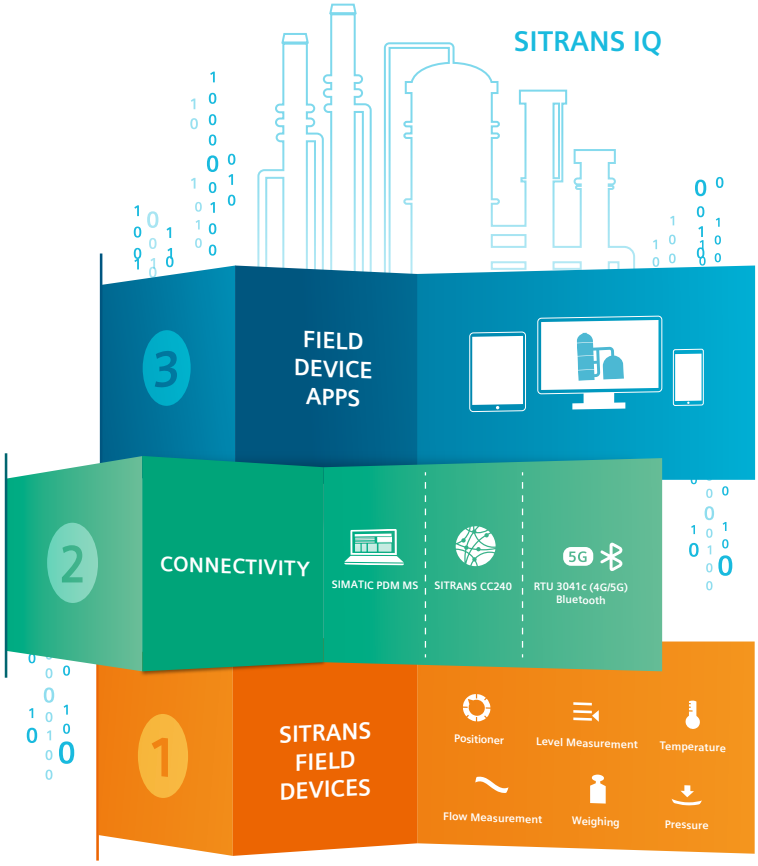


# **SITRANS IQ** lets you talk with your plant

An immense amount of condition data is generated in a process plant. Our SITRANS IQ portfolio extracts this data, evaluates it and edits it according to the specific needs of the operator. This sets completely new standards for improving processes.

Our SITRANS IQ portfolio provides a flexible, scalable suite of solutions to capitalize on your already smart instrumentation. Typically, we only read a primary variable from these smart instruments and dig deeper once we have a problem. But there is an immense amount of other valuable, but unused condition data in a plant. Why not read this stranded data and prevent problems in commissioning, operation or maintenance? Our SITRANS IQ connectivity solutions establish a second data channel to access stranded data without affecting your process.

Free yourself of routine tasks like manually capturing remote measurements, monitoring thresholds yourself or doing extra rounds to check your mechanical assets. SITRANS IQ sets completely new standards for improving processes, enabling predictive maintenance and increasing plant performance. Start now!



# SITRANS SCM IQ

### SITRANS MS200 Multisensor

SITRANS MS200 multisensor collects important data, such as vibrations and temperature, from machinery (e.g. a pump). Via Bluetooth connection, this data is sent to the SITRANS CC220 industrial gateway.

- Robust Industrial Internet of Things (IIoT) Sensor
- Easily mountable to mechanical assets, such as pumps, gearboxes or compressors
- Replaceable 3.6 volt industrial batteries

### SITRANS CC220 Gateway

From the SITRANS CC220, sensor data is transmitted securely and encrypted to the cloud, the industrial IoT application suite Insights Hub. There, the data is permanently analyzed using artificial intelligence (AI) analysis.

- Cloud gateway for secure and encrypted data transmission of sensor information into the industrial IoT application suite Insights Hub
- Industry-standard control panel installation with extendable external Bluetooth® antenna
- High sampling rate for accurate and reliable data transmission

### SITRANS SCM IQ App

The user is notified of anomalies, i.e. deviations from the normal operating status, at an early stage and can react before a failure of machinery occurs unexpectedly. At all times he knows about the status of his monitored machines by using the SITRANS SCM IQ app.

- Mobile web app
- Processing of multisensor data and any other machine data
- Graphic display of condition of the monitored machines or systems
- Early detection of deviations from the normal operating status
- Notification via SMS or e-mail

**Our IIoT solution for Smart Condition Monitoring**

With SITRANS SCM IQ you are able to monitor the condition of your plant's machinery and mechanical components, like pumps, compressors or gearboxes at any time. The system detects imminent equipment failures, thus enabling predictive maintenance and preventing plant downtime. Monitor the condition of all your rotating or vibrating components by equipping them with SITRANS MS200 multisensors, or monitor your existing smart machinery with data integration in Siemens Insights Hub.

**Machine data connectivity**

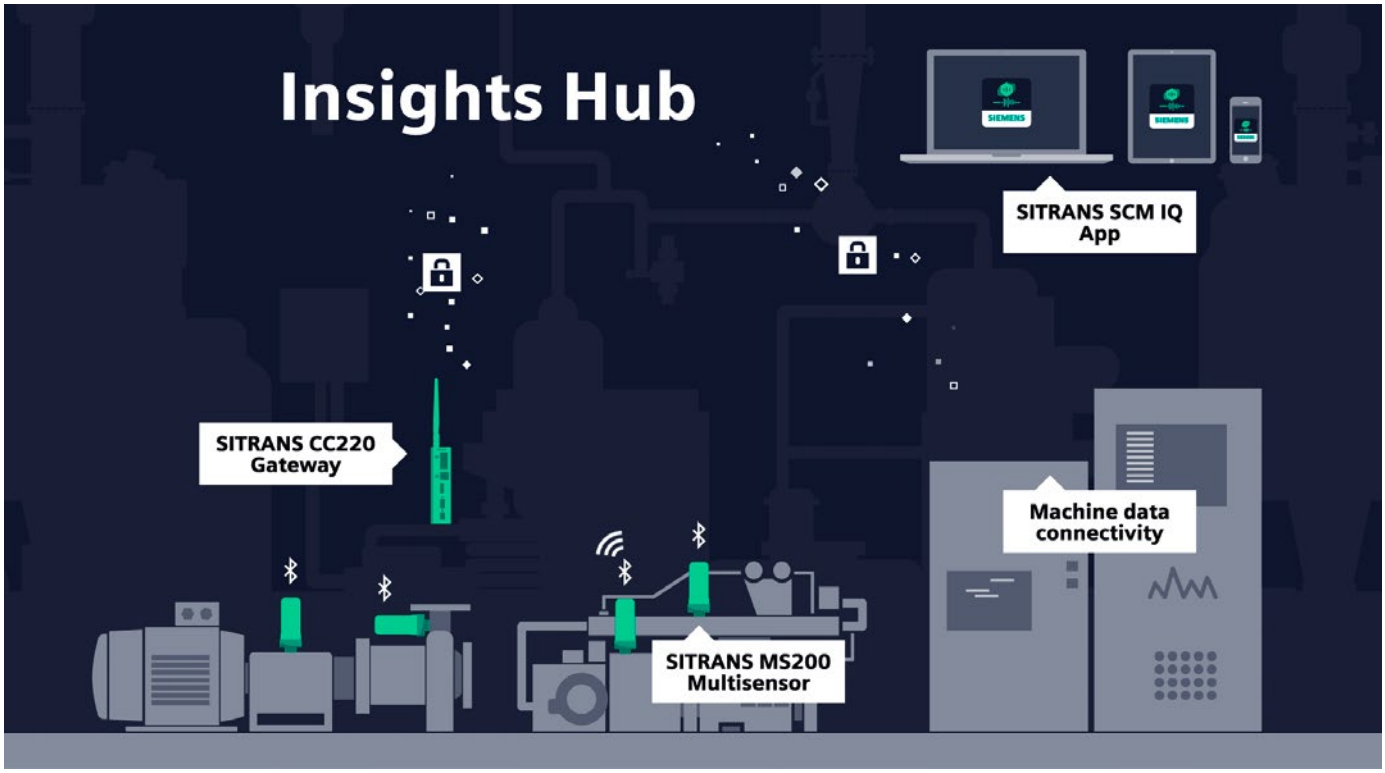
Besides analyzing data collected of SITRANS MS200 multisensors, SITRANS SCM IQ is able to analyze machine data from existing or other devices integrated in Insights Hub.

**Benefits of SITRANS SCM IQ**

- Increased plant performance by avoiding unplanned downtime
- Low investment and operating costs
- Easy installation and fast commissioning
- Optimized, event-driven maintenance management
- Secure, open ecosystem; quickly adaptable to new business challenges (not a stand-alone solution)
- System scalability from very small installations to extensive plant monitoring

**How can we help you?**

Whether you need to measure pressure, temperature, flow, level or weight, Siemens has best-in-class instruments to suit the unique needs of your plant or application - along with a global network of technical support available 24 hours a day, 7 days a week. Our high-performance and cost-efficient range of industrial solutions also includes devices for valve positioning, process protection, recording, controlling, communication and more.



# SITRANS mobile IQ

### Easy access to your field devices

SITRANS mobile IQ is a free app that gives you easy access to field devices from your smartphone or tablet. Via a Bluetooth connection, supported field devices in the environment can be easily and quickly commissioned, parameterized and monitored.

### SITRANS AW050 Bluetooth adapter

SITRANS AW050 adapter brings Bluetooth® wireless technology to SITRANS Probe LU240 level meter and SIPART PS100 valve positioner. It is easy to retrofit and establishes a Bluetooth connection between field device and SITRANS mobile IQ app.

### Benefits of SITRANS Mobile IQ

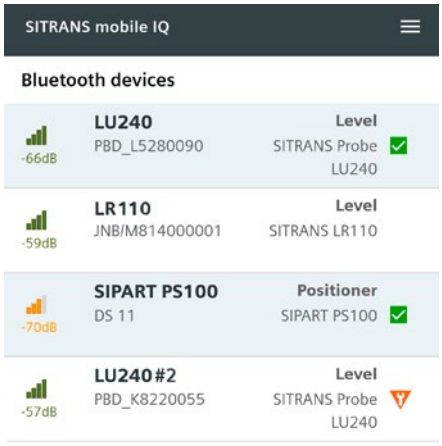
- Commissioning and parameterization of field devices
- Display of the device status and measurement values
- Help with identifying errors and troubleshooting in case of failures
- Direct link to manuals, certificates, FAQs, and much more

### App Download

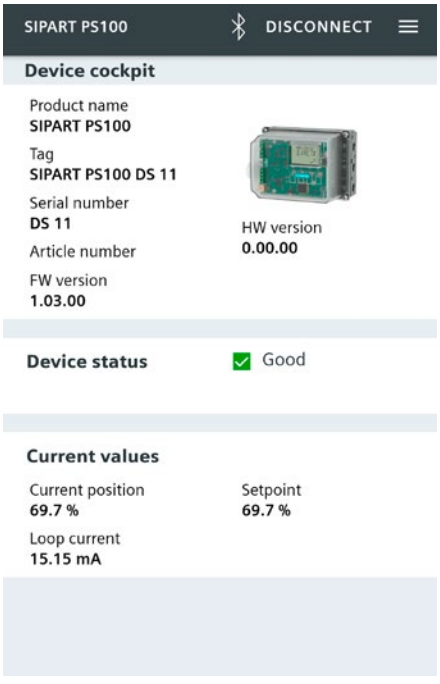
Available on the App Store

GET IT ON Google Play

**Device list**
All supported devices in the environment are displayed




**Device Cockpit**
Overview of the connected device, device status and current measured values (example: SIPART PS100).




**Charts**
History of selected measurement and diagnostic values (example: SITRANS LR110)

# SITRANS AID IQ

**Optimize Siemens Analyzer Availability with Predictive Maintenance using SITRANS AID IQ**

Analyzer users face challenges ensuring uptime for process demands and compliance. Traditional reactive maintenance leads to unplanned downtime, high costs, and delays in expert support and parts procurement.

SITRANS AID IQ enhances the user experience and maximizes analyzer uptime.

**Smart Analyzer Maintenance**

SITRANS AID IQ captures device diagnostic data, enabling users to assess device health or follow software-recommended steps based on this data. The software predicts future issues, offers problem identification, and proposes solutions. This proactive approach empowers users to plan maintenance in advance, reducing unexpected downtime.

**Simple Plug-and-Play Solution**

SITRANS AID IQ is a plug-and-play solution, requiring no on-site commissioning. Connect it to your Siemens analyzers, access the user-friendly interface via HMI or a web-based laptop interface, and start using the software. With SITRANS Analyzer Intelligence Director IQ, you'll experience intelligent analyzer operation and service today, preparing for the future.

**Benefits at a glance**

- Easy access to all important internal diagnostics data
- Quick overview of relevant device identification and set-up parameters
- Early detection of emerging problems by monitoring device data through predefined statistical functions
- Fast and automatized problem identification by the software
- Provision of suggested actions enables fast troubleshooting
- Easy and modern operability of the software via web browser or HMI

# SITRANS store IQ

SITRANS store IQ provides detailed information about particular assets

SITRANS store IQ delivers dashboarding, alarming and notifications functionality browser based for desktop and smartphone usage.

Connect and onboard your devices to Insights Hub via Mind-Connect hardware or SIMATICRTU 30xxC.

Use standard level and weighing devices to measure fill levels of bins, silos, tanks. Add auxiliary measurements e.g. temperature to monitor additional parameters of interest.



# SITRANS serve IQ

SITRANS serve IQ is an entry solution for capturing remote measurements

**Waterworks (municipal)**

- Capture of remote flow-data
- Monitoring for unusual flows (leak or system alarms (battery)
- IEC – interface to Scada
- Automated reports for
  - industrial/commercial curstomers
  - environmental authorities
  - log book functionality

**Water (industrial)**

- Capture of flow-data
- Reporting to environmental

**O&G**

- Additional monitoring of Gas-Pipelines (outlets)

**SITRANS FM MAG8000**

with integrated wireless module

**SIMATIC RTU 3000C family**

To collect data from almost all SITRANS field devices (with 4-20 mA or Modbus RTU)

# SITRANS ASM IQ

In the present time, it is more and more important to have accurate data and use it to further optimize the plant. SITRANS Analyzer System Manager IQ (SITRANS ASM IQ) is a PC system for monitoring, management and optimization of analyzers and offers comprehensive data collection, validation functions, maintenance planning and reporting functions, enabling enhanced data analytics. Benefit from ASM through optimized performance, reduced maintenance costs and higher data quality.

Harvest the fruits of digitalization with Analyzer System Manager and open the door for a new performance level of your analyzer measurement systems. Meet our digitalization solution for monitoring and optimization of analyzer measurement systems, enabling smart and predictive maintenance organization and supporting plant management.

**Key features**

- Centralized monitoring of all analyzer performance data of all analyzer-related assets (any technology, any manufacturer)
- Analysis of process data to identify unstable measurements
- Execution of validation/calibration and evaluation using statistical rules
- Analysis of diagnostic information of the connected devices to predict device downtime
- Maintenance planning, execution and documentation
- Gas bottle management
- Comprehensive reporting module to create data transparency
- Scalable and customizable solution for small or big plants

# COMOS **Mobile Worker**

The COMOS Mobile Worker takes your maintenance management to the next level. All plant information, from a wide range of sources such as ERP, engineering, or CMS, is available at all times – via just one mobile solution. It is a mobile data management solution developed to enable workers in industrial settings to access and interact with digital information in real time.

This allows workers to have hands-free access to important information, reducing the need for printed materials or manual searches. COMOS Mobile Worker can also capture data and feedback from workers in the field, which can be used to improve processes and prevent errors.

The augmented reality and navigation function of the COMOS Mobile Worker enables the field worker to easily find field devices and problem sources. On the mobile terminal device, the worker receives the information where the field device is located – and is brought there by the fastest route. At the same time, this ensures that the field worker is at the right source of error and is protected against making mistakes. The faster the source of the error can be eliminated, the faster the plant can get back in operation and continue to run without restrictions.

## Ensure Asset Uptime

| | | |
|---|---|---|
| Loop check | Safety checks | Utilization of digital twin |
| Plant digitalization | Data consolidation and redlining | Turnaround-management |
| Safer workinstruc-tions | Remote support | Work orders |
| Spare parts and material | Mobile process operations in the field | Decentralized 4-eye check |

## Use Cases covered:

| | | |
|---|---|---|
| Integrated Maintenance | Shutdown Management | Safety Checks |
| Loop Check | Digital Work instructions | Navigation, localization and Augmented Reality |
| Inspections Tours | Filling and drumming | |
| Turnaround Management | Shipment and dispatching | |

# Walkinside ITS

Immersive Training Simulator for field operator enabling learning from a safe environment

**Immersive Training Simulator**

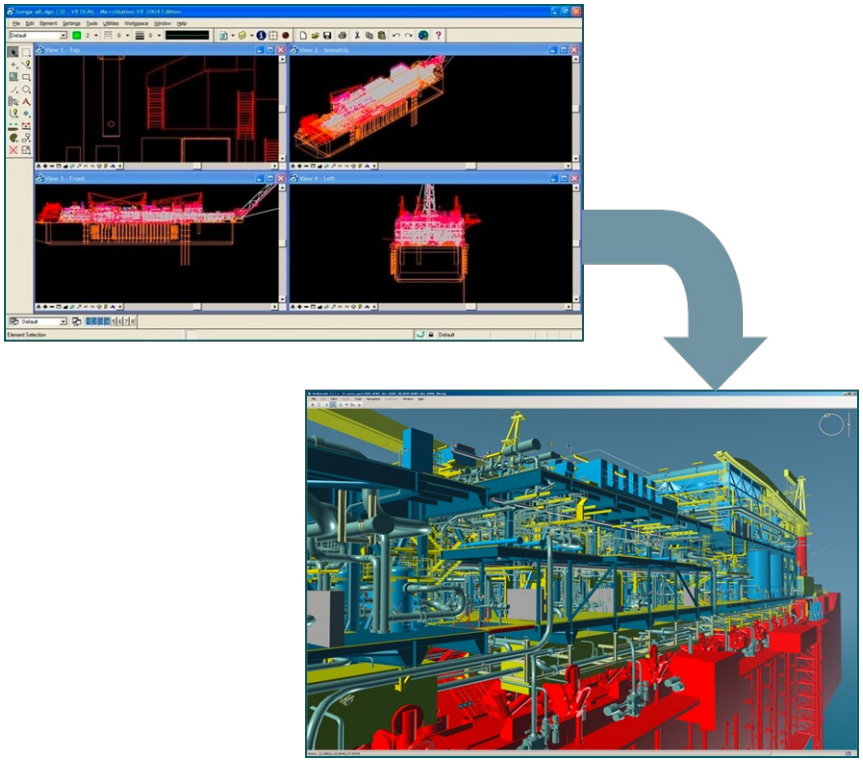
- Most Powerful & Easy-to-use 3D Real-Time Viewer for Owner Operators
- Leverage existing 3D data (CAD, Laser Scanning & Photogrammetry) for
  - 3D Design Reviews during Projects
  - C-Level presentations & Public Relations
  - VR Field Operator Training
  - 3D Real-Time visualization for Operations

**Benefits for Owner Operator**

- COMOS is the engineering tool from Reduce risk for lost time incidents & HSE incidents due to human error
- Increase efficiency
  - Personnel familiarized before going offshore
  - Save travel cost to ship yard
  - Onboard 3D equipment lookup for faster startup
- Increase personnel competency

**Create training scenarios – GUI based**
**Create scenarios without programming skills**

- Familiarization scenarios
- Standard Operating Procedures
- What if Scenarios
- HSE Scenarios
  – Out of the box HSE incidents
- Multi-User capabilities
- Light support for night training simulation



**Single Trainee session**
**Get ready for the work at any time**

- Familiarization scenarios
  - Asset start-up
  - Shift Change
- Standard Operating Procedures
  - Prepare for daily operations
- What if Scenarios
  - Get ready for unexpected known issues
- VR Support

**HSE Trainee session**
**Train emergency responses on safe environment**

- Out of the box incidents HSE incidents due to human error
  - Fire
  - High Pressure Fire
  - Liquid leak
  - Man down
  - Smoke
- Alarms
- Proximity zones
- Game objects
- Night training with lights

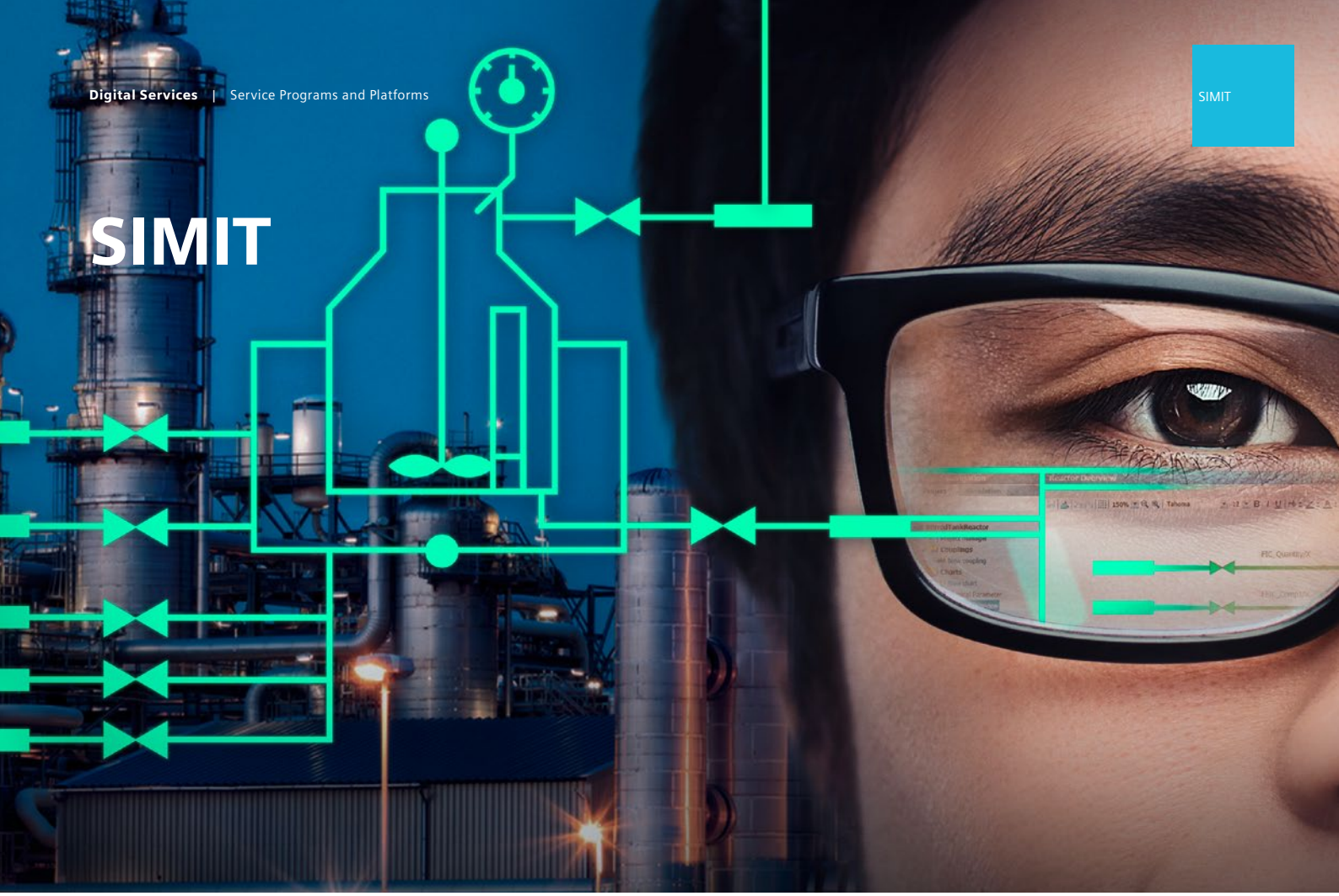
**Full Field Operator Team session**
**Work efficiently**

- Standard Operating Procedures
  - Real operations require team work
- Standard Operating Procedures
  - Combined response of HSE scenarios
- Instructor – Team based training
  - Manage the training session
  - Get team based reports
  - Ghost mode to observe trainees
  - Remote control of trainees' UI

**Unique Customer Benefits**

- Automatic conversion & update of massive 3D CAD models
- Training on complete 3D model
- Ease-of-use
- Create training content without programming skills
- Import existing training Scenarios like SOPs
- Use hybrid models including CAD data, Laser scanning & Reality Models

# SIMIT



**Virtual commissioning and operator training with SIMIT**

The simulation platform SIMIT enables comprehensive tests of automation applications and offers realistic training environments for operators before real systems go into operation. This creates opportunities for process optimization and know-how retention which results in reduced commissioning time and significantly shortened time-to-market. Simulated, tested – let's go!

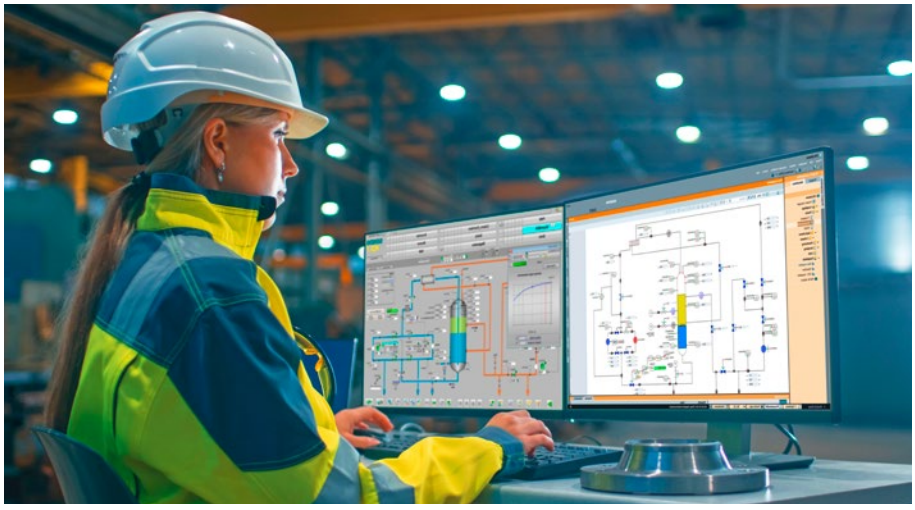
**Increased lifecycle efficiency by simulating reality**

Real-time simulation and virtual training creates opportunities for process optimization and know-how retention which results in reduced commissioning time and significantly shortened time-to-market.

With SIMIT, you can comprehensively test automation projects and commission systems, machines, and processes on a platform at a virtual level. The simulation platform can also be used to create realistic training environments for operating personnel.

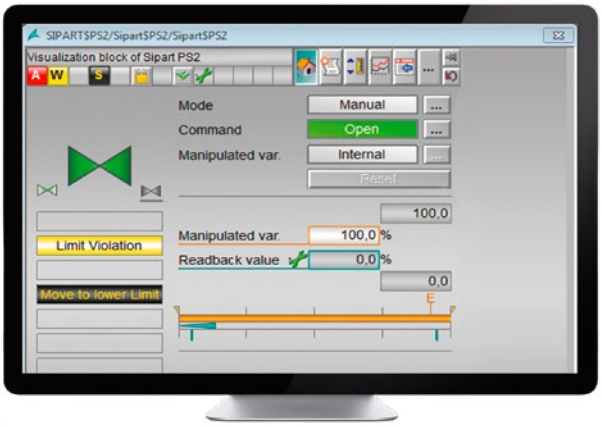
**Benefits at a glance**

- Direct integration of engineering data
- Increased quality
- Faster time to market
- High plant availability
- Increased operator know-how
- Reduced costly production or plant downtimes



# SITRANS Library

Optimize your process – SITRANS Library function blocks and faceplates for SITRANS field devices enhance SIMATIC automation and TIA Portal systems experience. They are an easy and effective interface between your field devices and operating system.




**SITRANS Library in action**

The demands on modern machines and plants are steadily growing in all industries. With the automation systems from Siemens, you can cover all requirements while benefiting from maximum efficiency, flexibility, and cost effectiveness. The benefits of accessing your field devices directly in your system is not disputed. See the benefits of how easy it is to add these to your system.

**Increase operational performance**

- More device data access for process optimization
- Proven stability

**Improve maintenance processes**

- Intuitive advanced device diagnostics data access
- Fast and failsafe intervention

**Increase operational performance**

- Centralized commissioning from automation system
- Reduction of manpower

**Maximize engineering and integration efficiency**

- Standard driver and technology function blocks
- User friendly faceplates and screens

**Enhance integration value**

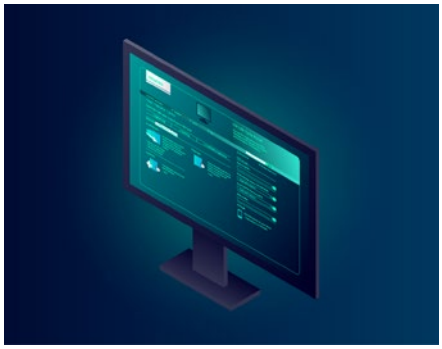
- Multiple process variables in one location
- Unique integration solution with SIMATIC platform

# PIA Lifecycle Portal

The PIA (Process Instrumentation and Analytics) Lifecycle Portal is a web-based platform designed to support the entire lifecycle of Siemens process instrumentation and analytics products. The portal provides a range of services and tools to help customers and partners manage their instruments throughout their operational life, from planning and procurement through to commissioning, operation, maintenance, and decommissioning.

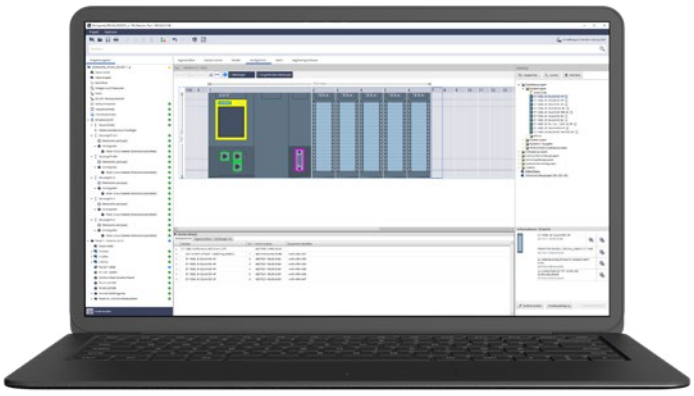
**Key features of the Siemens PIA Lifecycle Portal include:**

- Product selection and configuration: The portal provides detailed information about Siemens' range of process instrumentation and analytics products, helping customers select the right instruments for their specific applications. Customers can also configure their instruments online and generate detailed specifications.
- Order tracking and management: The portal allows customers to track their orders and manage their deliveries, including tracking information and delivery dates.
- Technical documentation and support: The portal provides access to technical documentation, including manuals, datasheets, and installation guides, as well as technical support and troubleshooting resources.
- Calibration and maintenance services: The portal allows customers to schedule calibration and maintenance services for their instruments, helping to ensure accurate and reliable performance.
- Asset management and decommissioning: The portal provides tools and services for asset management and decommissioning, including asset tracking and disposal services.
- Overall, the Siemens PIA Lifecycle Portal is designed to provide a comprehensive suite of services and tools to help customers and partners manage their Siemens process instrumentation and analytics products throughout their operational lifecycle.



# TIA Selection Tool

For your application Siemens offer the TIA Selection Tool to support all project planners, beginners and experts alike. No detailed portfolio knowledge is necessary. TIA Selection Tool is available for download as a free desktop version or a cloud variant.



**Use TIA Selection Tool online or as download**

Use the TIA Selection Tool cloud directly in your web browser – at any time and from any location. If you do not have an Internet connection and prefer to use the TST offline, you can download it to your PC.

Please note that an account in the Siemens Industry Mall is required for direct ordering of the recommended products.

**Quick: Time-saving configuration**

- Configure a complete project with just a few entries – without a manual and special knowledge
- Import and export of hardware configuration to TIA Portal or other systems
- Ideal visualization of the projects to be configured

**Easy: Everything in one tool**

- Tool download either as desktop version or web-based cloud version
- Always up to date technically about product portfolio and innovative approaches
- Highly flexible, secure, cross-team work in the cloud
- Direct ordering of the configured products in the Siemens Industry Mall

**Smart: Configuration support**

- Smart selection wizard for error-free configuration and ordering
- Configuration options can be tested and simulated in advance
- Library for archiving sample configurations
- Configuration is done virtually within the software, ensuring that the components are set up correctly and can work seamlessly in the real-world application.
- Users can export or generate configuration files that can be easily integrated into their automation systems. This ensures a smooth transition from the virtual design phase to the real-world implementation.

# Siemens Industry Mall

The Siemens Industry Mall is our online platform that serves as a digital marketplace for the industry products, solutions, and services offered. It is designed to simplify the process of finding and purchasing products, providing customers with easy access to a wide range of industrial automation and control components, as well as software solutions, energy management systems, and other industrial products.

The platform provides users with a range of features and functions that are designed to help them easily find the products they need. This includes a comprehensive product catalog, search filters, and product comparisons. The platform also offers detailed product information,including technical specifications,product documentation, and images, to help customers make informed purchasing decisions.

In addition to the online catalog, the Siemens Industry Mall also provides users with access to a range of other services, such as order tracking, product configuration, and pricing information. Customers can also create and save their own product lists and favorites, as well as request quotes and place orders directly through the platform.

The Siemens Industry Mall is available to customers worldwide, and is supported by local Siemens representatives in various countries. Overall, the platform is designed to provide a seamless and streamlined experience for customers looking to purchase Siemens industrial products, solutions, and services online.

# **Industry Online** Support App

**Mobile Use via App**
Get optimal support anywhere!

With the Industry Online Support App you have access to more than 300,000 documents about Siemens Industry products – anytime and anywhere.

The app supports you, for example, in the following fields:

- Problem solving during the implementation of a project
- Troubleshooting of failures
- Expanding or restructuring your system

It also provides you with access to the Technical Forum and to further entries created for you by our experts:

- FAQs
- Application examples
- Manuals
- Certificates
- Product notes and many others

**App Download**

Download on the App Store

GET IT ON Google Play

**The main functions at a glance:**

- Scan your product codes / EAN codes for a direct display of all technical and graphic data (e.g. CAx data) about your Siemens Industry product.
- Send your product information or entries per e-mail in order to process the information directly at the workstation.
- Send your requests to Technical Support at your convenience. Detail information can easily be added using the scan or photo function.
- Use the offline cache function to save your favorites to your device. In this way you can call these entries, products and conferences even without network coverage.
- Transfer PDF documents to an external library.
- The contents and surfaces are available in six languages (German, English, French, Italian, Spanish and Chinese) - including a temporary switching to English.

## Access our product data

# **Mobile Asset** Management Program

Our SIPIX-based Mobile Asset Management Program is your virtual service technician for flexible process monitoring and optimized maintenance. It enhances service efficiency in every phase of the plant life cycle: from data acquisition of the installed base and mobile processing of maintenance orders to augmented reality-supported remote services by Siemens or manufacturer-independent experts. The platform series is robust, powerful and preconfigured with many service apps, making it ready for efficient service operations at the field level or for remote service access.

### Engineering

If required, the project engineer can involve a Siemens expert in a specific task at short notice so that they can solve it together on the same screen. The Siemens expert also has the possibility to guide the project engineer through the engineering tool and to make entries independently.

### Commissioning

Devices that have already been installed are not yet connected to the higher-level control system. In addition, there are often no networks available for communication with the outside world. This is where our Remote Assisted Collaboration approach comes into play. The SIPIX SD Tablet offers numerous communication options.

### Maintenance

In general, maintenance is mostly carried out on site at the unit and in the installed state. This makes it particularly difficult to call in experts from outside during the maintenance phase. Here, Remote Assisted Collaboration based on SIPIX SD offers a wide range of options for technical support by a Siemens expert.

**Field device management**

Wireless connection via Bluetooth HART modem for parameterization and troubleshooting of process instrumentation with SIMATIC PDM

**Recurring mobile maintenance**

Targeted maintenance with the COMOS mobile app and standard checklists with the aid of the Lifecycle Management Suite

**Installation, commissioning, operation and modernization**

Versatile use of the SIPIX tool in every phase of the plant life cycle – in the PLC/control room, over networks via Wi-Fi, point-to-point directly to assets such as field devices, etc.

**Universally expandable**

Application-specific and customer-specific use cases are possible by installing additional software tools and using existing interfaces such as RFID HF readers, GPS and Bluetooth

**Remote services**

Fully integrated remote service solution for on-site support with the SIPIX RC video/audio app using the remote infrastructure of Siemens or customers

**PCS 7 process visualization and monitoring**

Process-level access to information and operation of the plant and asset management, including contactless identification of the assets (RFID scanner), even in hazardous areas

**Data recording**

Measuring point recording during service call or digitalization of the plant by means of app-driven manual data recording with SASDCmobile

**Calibration services**

Paperless solution for execution and documentation of calibration for process instrumentation with bMobile app and CMX cloud-based calibration management

# **Functional Safety** (SIL)

**Functional Safety for Process Instrumentation and Analytics**

Since the IEC 61508 and IEC 61511 standards for functional safety came into effect, demand has increased for process instrumentation and analytics devices conforming to the Safety Integrity Level (SIL) classification. You can find all the important information about our SIL-related products via the following link: Deliverable Products, Manufacturer Certificates, Safety Manuals and additional information brochures and links for the topic of Functional Safety.

www.siemens.com/sil

**Available SIL-products**

- For Process Instrumentation we have products in the following areas:
  - Pressure Measurement
  - Temperature Measurement
  - Flow Measurement
  - Level Measurement
  - Positioner
- For Continuous Process Gas Analytics we have products in the following areas:
  - Extractive
  - In-situ

**Who does the SIL classification apply to?**

In the case of plants that must meet safety technology requirements, the participants are affected for different reasons:

**Plant operators**

- Place the demands on the suppliers of safety technology components. These must provide proof of the remaining risk potential.

**Plant constructors**

- Must appropriately design the plant.

**Suppliers**

- Confirm the classification of their products.

**Insurance companies, authorities**

- Request proof of a sufficient reduction in the residual risk of the plant

**What devices can be used with which SIL?**

In order to achieve a level (SIL 1 - 4), the complete SRS (Safety Related System) must fulfill the demands for the systematic failures (particularly the software) and the random failures (hardware). The calculated results of the complete SRS must then correspond to the target SIL.

In practice, this primarily depends on the design of the plant or measuring circuit. In an SIL 3 plant, for example, devices with a lower SIL can also be used within certain limits.

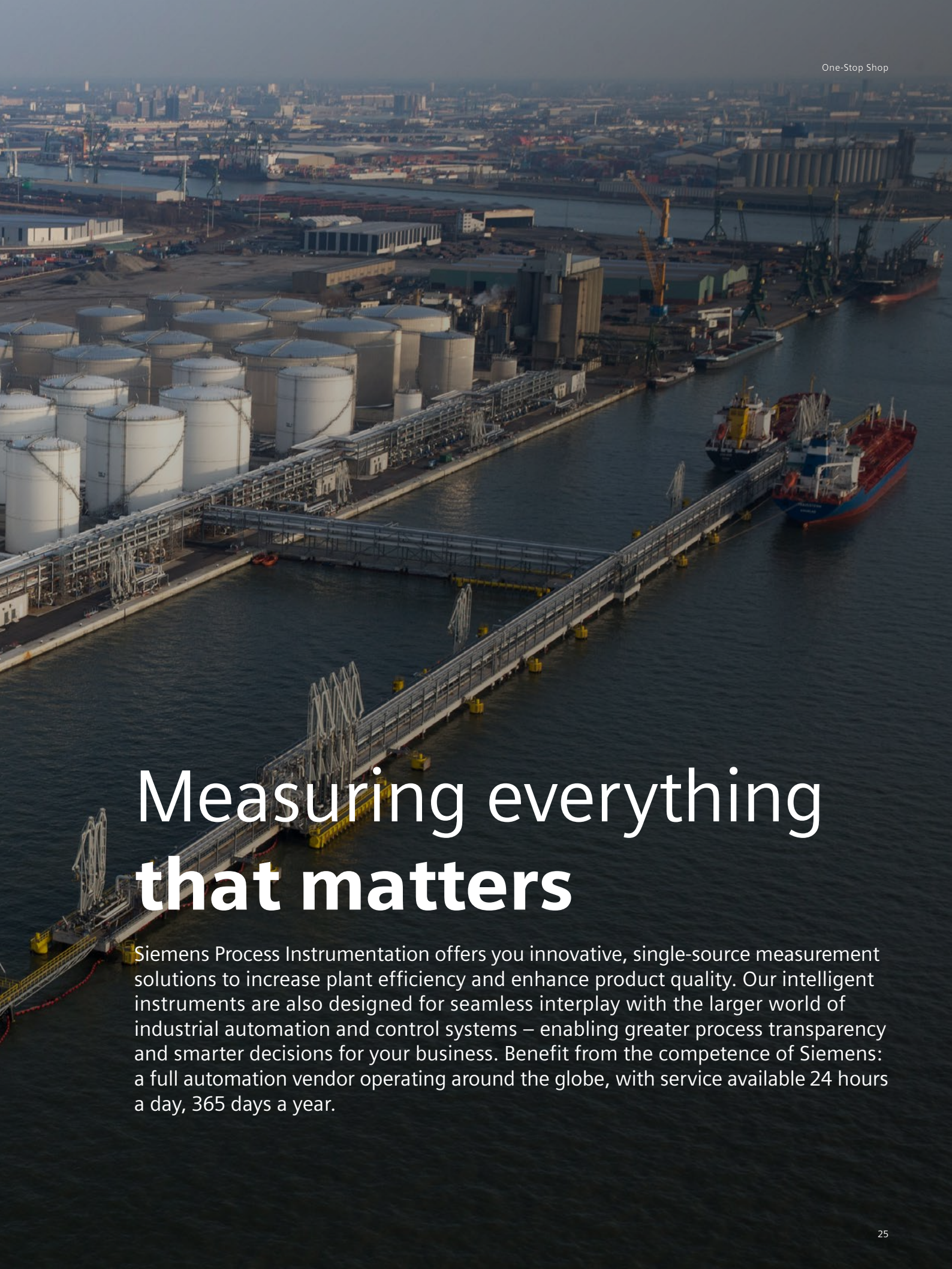
For safety reasons, it is more advantageous if at least two redundant devices are used. A small positive side-effect is that the cost of two SIL 2 devices is usually lower than that of one SIL 3 device.

SIL 4 cannot be implemented using conventional devices.

**If two SIL 2 devices are used in redundant mode, is this automatically SIL 3?**

No. It is always the case that the calculated failure probability of the complete SRS (Safety Related System) must result in SIL 3. Redundant operation of SIL 2 devices permits a reduction in the probability for random failures. Whether this is sufficient for SIL 3 must be determined by considering systematic and random failures. In terms of systematic failures (e. g. software), the entire system must also meet the requirements for SIL 3.

This procedure applies analogously to other safety integrity levels.



# Measuring everything **that matters**

Siemens Process Instrumentation offers you innovative, single-source measurement solutions to increase plant efficiency and enhance product quality. Our intelligent instruments are also designed for seamless interplay with the larger world of industrial automation and control systems – enabling greater process transparency and smarter decisions for your business. Benefit from the competence of Siemens: a full automation vendor operating around the globe, with service available 24 hours a day, 365 days a year.

# Takes pressure off your business: **SITRANS P**

SITRANS P is a complete range of measurement instruments for measuring relative pressure, differential pressure and absolute pressure. In addition to high measuring accuracy and ruggedness, the modular system features superb operating convenience and functionality as well as a perfect safety concept.


**SITRANS P320/420** – the first pressure transmitter for remote commissioning of functional safety

- Time and effort savings due to remote commissioning of SIL devices
- Developed in accordance with the IEC 61508 standard for use in SIL 2/3
- Reduced response time increases process efficiency by speeding up the control system's response to changing process conditions
- Ready for plant digitalization with the HART 7 pressure transmitter: Data logging functions and event control deliver users in-depth control and analysis.
- User-friendly display due to clear display and diagnostic icons in accordance with NAMUR NE107
- Maintenance cost reduction due to proof test interval of up to 10 years
- FM-approved

**SITRANS LH100/LH300**

- Suitable for applications ranging from drinking water or wastewater to corrosive liquids thanks to stainless steel enclosure
- Rugged submersible sensors for hydrostatic level measurement
- Installation possible in pipes with 1" inner diameter

**SITRANS P200/210/220**

- Single-range transmitter for relative, absolute and hydrostatic pressure
- Pressure sensors: stainless steel sensors (SITRANS P210 and SITRANS P220) as well as sensors with ceramic membrane (SITRANS P200)
- Conversion of measured pressure into either 4–20 mA or 0–10 V signal

**SITRANS P compact**

- Analog transmitter for absolute and relative pressure
- Hygienic design in accordance with EHEDG, FDA and GMP recommendations
- Stainless steel process connections and enclosure
- Measurement deviation ≤ 0.2%

**SITRANS P300**

- More than 90 different process connection variants offer the highest degree of flexibility
- Versatile communication connection via HART protocol, PROFIBUS PA or FOUNDATION Fieldbus
- Fulfills EHEDG, FDA and 3A requirements
- Maximum measurement deviation of 0.075%
- Can be combined with flushmounted absolute or relative pressure measuring cells

# Because every degree matters: **SITRANS T**

SITRANS T products are the temperature measurement champions, even in extreme conditions. Whether used in hot, cold or hazardous environments – the communicative SITRANS T product family meets all expectations. Not matter whether head, rail or field mounting – all transmitters or sensors are available individually or as complete measuring points. They offer high precision in every application and are quick and easy to connect to thermocouples or resistance thermometers. The SIMATIC PDM intelligent software package permits parameterization in just minutes, and input errors are avoided.

**SITRANS TS500** temperature sensors for pipes and vessels – from simple applications to solutions for harsh environments

- Modular system with thermowell made of tubular or barstock material, extension, connection head and optional transmitter or display
- Intrinsic safety, flameproof and nonsparking versions are available

## Transmitters for head mounting


### SITRANS TH100

- Pt100 single-input transmitter
- Supports four-wire Pt100
- 4–20 mA
- Low-cost and compact

### SITRANS TH100slim

- Pt100 single-input transmitter
- Supports four-wire Pt100
- 4...20mA output with M12 socket
- Low-cost and compact in stainless steel enclosure to weld on compact thermometer

### SITRANS TH320

- Universal single-input transmitter
- Diagnostics LED
- Supports four-wire RTD/TC/mV and resistances
- Supports Callendar-van Dusen
- HART 7 + SIL 2/3 (IEC 61508)
- 4–20 mA
- Interface for local HMI

### SITRANS TH420

- Universal dual-input transmitter
- Hot backup function
- Diagnostics LED
- Supports two four-wire RTD/TC/mV and resistances
- Supports Callendar-van Dusen
- HART 7 + SIL 2/3 (IEC 61508)
- Interface for local HMI

## Transmitters for rail mounting

### SITRANS TR320

- Universal and single-input transmitter
- Diagnostics LED
- Supports four-wire RTD/TC/mV and resistances
- Supports Callendar-van Dusen
- HART 7 + SIL 2/3 (IEC 61508)
- 4–20 mA

### SITRANS TR420

- Universal dual-input transmitter
- Hot backup function
- Diagnostics LED
- Supports two four-wire RTD/TC/mV and resistances
- Supports Callendar-van Dusen
- HART 7 + SIL 2/3 (IEC 61508)

## Transmitters for field installation

### SITRANS TS100

- For multiple applications
- Supplied with directly installed cable
- ATEX and IEC EX approvals; can be operated in Zone 0
- Wide range of options thanks to modular principle

### SITRANS TS200 compact design

- For multiple applications
- Compact design with directly installed fixed connection (M12, Lemo, etc.)
- ATEX and IEC EX approvals; can be operated in Zone 0
- Wide range of options thanks to modular principle

### SITRANS TF320/420

- Stainless steel or aluminum enclosure
- Temperature field transmitter for multiple applications
- Inclusive diagnostic
- Full redundancy via hot backup function (TF420)
- Inclusive for safety burner applications according to EN 50156-2
- HART 7
- 4–20mA
- Combined types of protection available, such as Ex d + Ex i


**SITRANS TS300**

- Clamp-on temperature sensor
- Design meets EHEDG recommendations and is therefore suitable for use in the food and beverage and pharmaceutical industries
- Replaceable measuring inserts

**SITRANS TS Thermowell**

- Wide range of lengths and materials
- Comprehensive coverage of applications
- Customer-specific options are possible
- High stability thanks to high-quality materials
- Comprehensive material and quality controls available

# Everything flows: **SITRANS F**

Whether measuring gases, liquids or steam – choosing the right flowmeter is decisive for productivity. This is where the SITRANS F line comes in. Our portfolio contains the fitting flowmeter for every application and medium, with five different flow technologies available to suit a wide range of operating conditions: electromagnetic, Coriolis, ultrasonic, vortex and differential pressure.


**SITRANS FCT070/FST070 transmitter: flowmeter solutions**

- Full control and parameterization via the control system
- Direct integration into SIMATIC S7, TIA Portal and PCS 7
- Coriolis or ultrasonic technology module for ET 200SP
- Selection via TIA Selector (secures easy integration in SIMATIC)
- Fast digital signal to sensor with 10 ms update rate
- Full advanced transmitter functionality via automation control
- Via PROFINET, the measurement data is transmitted to the automation system in real time
- Full hazardous area solutions with use of SITRANS I300 barrier
- Coriolis-specific flowmeter: SITRANS FC230
- Ultrasonic-specific flowmeter: SITRANS FS230
- Integration function blocs available for all Siemens automation systems

## SITRANS FC
## Coriolis mass flowmeters

Our multivariable devices measure the direct mass flow rate of liquids and gases in almost any application. They deliver reliable and repeatable information on mass flow, volume flow, temperature, density and concentration (for example, Brix or Plato). They are available in sensor sizes DN 1.5 to 150 mm with different flowmeter transmitter versions to fulfill requirements for high performance in oil and gas, chemicals, food and beverage, pharmaceuticals and automotive applications.

Full range of digital transmitters: The uniform sensor and transmitter platform offers solutions for sizes from Di 1.5 to DN 150 mm with three different transmitters.

The innovative and user-friendly FCT030, FCT010 and FCT070 transmitters feature audit trails, trend curves, data logger and advanced diagnostic functionalities.

**SITRANS FCT010 single digital channel transmitter**

- Full multiparameter Modbus output ideal for PLC integration
- Robust aluminum housing mounted directly on the different sensors, for most sensor sizes
- Small in size, ideal for skids and compact machines
- Full performance in a cost-efficient solution

**SITRANS FCT030 advanced full-range transmitter**

- Available as compact, remote field-mounting and remote wall-mounting enclosures
- Four I/O channels, freely configurable and programmable
- Full communication package: HART; PROFIBUS PA and DP; Modbus
- Advanced, large-size graphical display including trend curve and multilevel display views
- Integrated data logger, ideal for diagnostics on advanced applications
- Advanced diagnostic functionality
- Built-in programmable settings for optimizing pulsating flow and aerated flow
- 16+ integrated unique fraction tables for concentration measurements
- Built-in batch controller for two-stage batch applications

**SITRANS FCS300**

- Dual splitflow design in sizes from DN 15 to DN 150 in different versions, wetted material in AISI 316 as well as nickel alloy
- Remote- or compact-mounted
- Available with broad range of FCT030, FCT010 and FCT070 transmitters
- Solid performance with mass flow accuracy of 0.1% or 0.2% and density accuracy of down to 2 kg/m³
- Robust frame and housing isolate from external vibrations, allowing ideal measurement in difficult environments
- Ideal for the chemical, petrochemical and oil and gas industries

## SITRANS FM electromagnetic flowmeters

SITRANS FM electromagnetic flowmeters measure flow volumes of electrically conducting fluids such as water, chemicals, food and beverage, slurries, sludge, paper stock, and mining slurries with magnetic particles.

**SITRANS FCS low flow**

- Single-tube design in sizes from DI 1.5 to DI 15, with a wide selection of available connections
- High-performance accuracy: 0.1% on massflow and down to 0.5 kg/m³ density
- Available with broad range of FCT030, FCT010 and FCT070 transmitters
- DN 4 design withstands pressure rates up to 1000 bar
- Ideal for a broad range of low-flow applications within the automotive, chemicals, and food and beverage industries
- Easy installation using a plug-and-play interface
- Optimal hygiene and CIP cleanability for the food and beverage industry as well as pharmaceutical applications, thanks to single-tube construction without internal welds, reductions or flow splitters

**SITRANS FCS400**

- Dual splitflow design in sizes DN 15 to DN 50
- Most compact design on the market
- Available with all common process connections including a variety of common sanitary connections
- Available with broad range of FCT030, FCT010 and FCT070 transmitters
- High-performance accuracy: 0.1% on massflow and down to 0.5 kg/m³ density
- Ideal for OEM, skids, machine builder, marine, sanitary and chemical applications

**Modular pulsed DC meters: SITRANS FM MAG (DN 2 to DN 2200)**

- Full transmitter program includes MAG 5000/MAG 6000/MAG 6000 I; compact- or remote-mounted
- Multiple I/O as standard and communication modules PROFIBUS PA/DP
- DeviceNet, FOUNDATION Fieldbus, HART and Modbus RTU are available
- MAG 5100 W sensor for water and wastewater applications
- MAG 3100 P sensor for process industries and the harsh requirements in the chemical industry
- MAG 3100 P available as quick ship variant
- MAG 3100/MAG 3100 HT sensor for general process industries
- MAG 1100/1100 HT sensor for general process industries
- MAG 1100 F sensor for food and beverage and pharmaceutical industries

**Battery-operated water meters: SITRANS FM MAG 8000/MAG 8000 CT (DN 25 to DN 1200)**

- Battery lifetime of up to 15 years*
- IP68 (NEMA 6P) enclosure and sensor painting in accordance with ISO 12944 class C5M (up to 15 years protection) corrosivity for burial and submerged applications
- Easy installation without straight inlet/outlet
- Rich add-on communication modules: Modbus RTU, encoder card, 3G/UMTS module and IIoT Wireless communication module
- IIoT Wireless Communication Module consisting of a hardware part and a Web-hosted application for device management and measurement data transfer
- Remote configuration of all parameters, remote diagnostics

**SITRANS FM MAG 8000 with 3G/UMTS module**

- Built-in Remote Qualification Certificate enables comprehensive device diagnostics and off-site audits
- Configurable analog input for external ratiometric pressure transmitter
- MAG 8000 clock synchronization with Internet NTP server

*for 4 D-cell external battery pack

**High-powered AC meters: SITRANS FM TRANSMAG 2 / (DN 15 to DN 1000)**

- Specially designed for heavy mining slurries with or without magnetic particles as well
- Also suitable for the most difficult applications in the pulp and paper industry
- Low conductive medias ≥1 µS/cm (0.1 µS/cm depending on medium)
- No movable parts
- Stable zero point/pulsed alternating field for accurate flow signal and excellent signal strength
- SmartPLUG concept
- Comprehensive self-diagnostics


**Threaded SITRANS FM100: Making engineering and design even simpler**

- Measuring and monitoring small and medium flows. Robust stainless steel design (threaded: 1/2”, 3/4”, 1”, 2”)
- Generation of two process values, simultaneous flow and temperature measurement
- Dosing function with external control input
- Four optical buttons, easy local operation in the field possible with gloves
- The display can be electronically rotated in 90° steps
- Bidirectional measurement
- Integration in many standard applications possible, since there are two individually configurable outputs (pulse/frequency/alarm and analog output)
- Total and partial volume counters to track flow rates
- IO-Link communication available

## SITRANS FS – Flow Sonic

Our ultrasonic flow measurements work as inline systems or with clamp-on.

### Inline systems

Inline systems come into contact with media and are mostly complete and calibrated pipe segments. Suitable for operational measurements in industrial areas and heat quantity measurements that are subject to billing, but can also be retrofitted in existing systems.

**SITRANS FS SONO 3100 / SONO 3300**

- Suitable for water applications in sizes DN 50 to DN 500
- Available as 1- or 2-path systems in combination with SITRANS FUS060 transmitter
- Choice between mild steel and stainless steel on request
- Sensors can be exchanged without interrupting operation

**SITRANS FS SONOKIT**

- The SONOKIT system is designed for inline retrofitting on existing water pipelines up to DN 1200 as a 1- or 2-track flowmeter
- For use with the dedicated SITRANS FUS060 transmitter (up to DN 500) or battery-powered FUS080 transmitter (up to DN 1200)
- The unique design enables installation on empty pipes or pipes under pressure without process shutdown
- Robust version can be buried and withstands constant flooding
- Outstanding accuracy; the bigger the pipe, the more accurate the result

**SITRANS FUS380 and FUE380**

- FUE380 for billable energy measurements according to MID004
- FUS380 for industrial billing measurements without MID004 requirements with more extensive measuring ranges available
- FUS/FUE380 in dual-track version for measuring water flow in district heating systems, local networks, boiler stations, substations and other general water applications
- Also suitable for chiller plants (including glycol mixes without type approval)
- Suitable for pipe diameters from DN50 to DN1200 and approved for billable heat measurements with official approval (MID MI-004)
- With SITRANS FUS 080 transmitter for battery or mains power supply, battery life up to 6 years
- Ideal for energy metering together with the SITRANS FUE950 energy calculator
- With heat meter type approval for FUE380 (MID MI-004)

## SITRANS FS – clamp-on ultrasonic flowmeters

Clamp-on is the ideal technology for retrofits in existing systems. Sensors can be strapped onto existing pipes without disrupting or stopping the process. Since these sensors measure without direct contact with the liquid, this type of measurement is also becoming increasingly important for new systems. The transmitter is designed for very fast and highly accurate measurements. Up to four measuring paths per pipe enable significantly better flow-profile recording even under non-ideal measuring conditions and thus results that only calibrated measuring devices actually deliver.

**SITRANS FSS200 –**
**clamp-on sensor family**

- Available as high-precision, universal and high-temperature sensor
- High-precision sensor: typical Lamb-wave sensors, working in harmony with steel pipes; selection according to pipe wall thickness; mandatory for oil and gas as well as other liquids when accuracy is required; different sizes with different frequencies for wall thickness up to 35 mm
- High-temperature sensor: for applications up to 230°C
- Universal sensor: for portable purposes and non-steel pipes, but also for steel pipes with lower performance and accuracy requirements; available in five basic sizes for pipes up to DN 6000 and special versions for difficult applications
- Suitable material for simple and permanent mounting, even with different requirements

**SITRANS FS290 –**
**portable clamp-on system**

- With FSS200 ultrasonic flow sensor family 200 (clamp-on) and FST090 ultrasonic flow transmitter
- For quick and easy checking of the flow in pipes
- Portable SITRANS FST090 transmitter in use with SITRANS FSS220 clamp-on sensors
- For pipes up to DN5000 and a wall thickness up to 40 mm, for temperatures of 120°C or higher
- Operation with mains unit or alternatively with rechargeable batteries for more than 24 hours
- Time-limited measured value monitoring and control measurement to validate built-in flow meters
- Four pushbuttons, illuminated graphical display, 240 x 160 pixels
- Inputs/outputs, Communication Modbus RTU RS 485, USB service port, 4GB SD-Card


**SITRANS FS230 with FSS200 sensors and FST030 transmitter**

- Designed as a wall housing (Ex zone 2) or as an industrial housing (Ex zone 1) with external DSL
- External Digital Sensor Link (DSL) contains 4-path measured value electronics and generates the measured value directly with the FSS200 sensors
- High-precision measurement of slightly viscous liquids (industrial version), different crude oil mixtures or petroleum products with temperature, pressure and viscosity consideration (oil version), natural and industrial gases from approx. 8 bar (gas version)
- WideBeam® transit time technology with FSS200 high-precision sensors for high accuracy and the best signal quality in all areas of use
- Transmitter electronics for billable measurement accuracy better than 0.15%
- Anomaly tool, patented bi-directional flow profile correction for anomalies in the upstream and downstream areas of the pipe
- High EMC security and secure digital data transmission to the transmitter, up to 150 m and more


**SITRANS FS220 – with FSS200 sensors and FST020 transmitter**

- For simple measurement tasks with one pair of sensors (single-path) and a practical accuracy of 1%.
- Highly reliable, cost-effective system for simple accuracy
- Enhanced zero stability results in minimal need to set a zero point, ideal for use in municipal utilities for network monitoring and leak detection
- Frequently used in the water and wastewater sector, for energy and HVAC as well as in the chemical industry (non Ex)
- WideBeam® transit time technology with FSS200 universal and high-precision sensors

## SITRANS FP differential pressure flow measurement

The SITRANS FP product line offers a complete solution for differential pressure flow measurements. SITRANS FP330 and SITRANS FPS230 are both suitable for a vast range of different applications under various process conditions and parameters.

**SITRANS FPS230/FP330**

- Flexible mounting
- One pressure transmitter for all applications
- Single source supplier for the hole measuring point
- Pre-mounted flowmeter delivered in “one box”
- Easy traceability throughout the ordering process

**Differential pressure flowmeters: SITRANS F O**

- Universal flow measurement for liquids, gases and vapors
- Always provide accurate results, even with large bores, high temperatures and extreme pressure

**SITRANS FX330**

- Accurate measurement of steam, gas, and both conductive and non-conductive liquids
- Available in sizes DN 15 to DN 300 mm
- Integrated pressure and temperature compensation for lower installation costs and increased accuracy
- Integrated reduction of nominal diameter results in a large turndown ratio, reducing installation costs and potential for leakage
- Provides redundant storage of all calibration and configuration data within the display memory and the electronics module
- Designed from the ground up to be fully compliant with the IEC 61508 SIL 2 safety standard
- Cost-efficient energy calculation including net heat measurement
- Remote version available with cable length up to 50 m

# A new level of experience: **SITRANS L and more**

Siemens provides a complete range of level measurement devices for every application built on its global experience in the field. With the knowledge that no single technology can address the needs of all industrial challenges, Siemens offers a full range of contacting and non-contacting instrumentation for continuous and point level measurement.



**SITRANS LR100 series –**
for hassle-free level measurement

- Compact 80 GHz radar transmitter for liquid and solid applications
- Featuring Bluetooth® wireless technology for easy and quick setup with Siemens SITRANS mobile IQ App
- Ideal for chemical storage vessels, bulk solids hoppers, produced water and drilling mud

## Continuous level measurement

Continuous level measurement constantly monitors dynamic processes. The measurements are transmitted as an analog signal or digital value. We offer a wide range of transmitters based on a variety of technologies, including ultrasonic, radar, guided wave radar, capacitance, gravimetric and hydrostatic.

## Process intelligence

The signal processing technologies differentiate between the true echo from the material and false echoes from obstructions or electrical noise. The sophisticated software is supported by field data gained from more than a million applications. This in-depth knowledge and experience is built into the software's advanced algorithms to provide intelligent processing of echo profiles. The result is a repeatable, fast and reliable measurement.

**SITRANS LR250**

- 2-wire, 25 GHz pulse radar level transmitter up to a range of 20 m
- For liquids and slurries in storage and process vessels with high temperatures and pressures
- 316L stainless horns, flanged antenna with PTFE facing and budget-friendly polypropylene lens and flange options for versatile applications

## Radar level measurement with intelligent signal processing

- Non-contacting and low-maintenance
- Microwaves require no carrier medium for precise measurements even under harsh process conditions
- High performance and easy implementation using just a few parameter entries

**SITRANS LR560**

- The world's first 78 GHz level transmitter
- 2-wire, 78 GHz FMCW for ranges up to 100 m (328 ft)
- Very narrow 4-degree beam angle with 3" lens antenna
- Aiming flanges with purge, easy to install
- Integrated Process Intelligence and plug-and-play performance

**SITRANS LR200**

- 2-wire, 6 GHz pulse radar level transmitter for liquids with a range of up to 20 m
- Ideal for process vessels with turbulence and heavy deposit, as well as high temperatures and pressures with a range of up to 20 m

## Ultrasonic level measurement

Our market-leading ultrasonic level measurement is an extremely cost-effective solution. The self-cleaning face makes it suitable for harsh environmental conditions. The non-contacting technology is used in numerous industries to monitor liquids, bulk solids and slurries.

**SITRANS Probe LU240**

- Cost-effective, compact, intelligent level solution for liquid chemical inventory, monitoring small process vessels and level monitoring measurement in the environmental industry

**Echomax transducers**

- Fully encapsulated robust ultrasonic transducers for use with Siemens ultrasonic controllers
- Various approvals for use in hazardous applications
- Self-cleaning face for harsh applications with buildup

## Level controllers

Our product portfolio of level controllers feature intuitive navigation via the local user interface and are ideal for applications in all industries. Whether you need the world's highest accuracy in your open channels, rugged wet well pump control or dual point monitoring, Siemens controllers have you covered.

## Continuous capacitance

Our unique inverse frequency shift approach to capacitance technology ensures accurate, reliable and repeatable measurements, even in dusty, turbulent and vaporous environments or in situations with product buildup. Because even a small level change creates a large change in frequency, our instruments provide better resolution and consistently outperform conventional devices. With special features such as Active-Shield technology, they protect the measurement from the effects of moisture, vapors, foam, temperature and pressure variations, and buildup. Together with the modular probe options available on various models, they offer practical solutions to a wide variety of continuous level and interface applications.

**SITRANS LC300**

- Ideal for standard and industrial applications in the chemicals, hydrocarbon processing, food and beverage, mining, aggregate and cement industries

## Guided wave radar

SITRANS LG guided wave radar transmitter for a range of contact level and interface applications from general to harsh conditions and everything in between. With little to no configuration necessary you'll be operational in minutes, saving you time and money.

Extreme process conditions don't stand a chance, and these transmitters feature SIL options for applications requiring functional safety. Advanced diagnostics including trending, profiles and event logging give you the data you need at every step of your process. Rapid response times and advanced echo processing deliver accurate and reliable readings over the full application range, even in small containers and in low dielectric constant material. And with field-replaceable and adjustable probes, if your process changes, your measurement device can, too.

**SITRANS LG240**

- For use in hygienic and corrosive applications

**SITRANS LG250**

- Highly flexible solution for liquid level and interface applications. Extremely versatile for many applications

**SITRANS LG260**

- Ideal for measuring the level in medium-range solids applications, including grains, plastics and cement

**SITRANS LG270**

- Offers configuration options for extreme conditions, including high-temperature and high-pressure applications

**All versions include:**

- Automatic buildup adjustment
- Remote display and electronics options
- 2 mm accuracy
- Backlight with full graphic display, top- or side-mountable
- SIL 2/3 approval options
- Field-replaceable probes
- Quick setup wizards
- USB service port option

## Hydrostatic

Low-cost level measurement for direct mounting or mounting with remote seals on tanks and vessels

**SITRANS LH100 and SITRANS P DS III**

- Suitable for a wide range of applications in the chemical and petrochemical industries
- Highly resistant to extreme chemical and mechanical loads as well as electromagnetic interference

## Gravimetric

Gravimetric level measurement with SIWAREX weighing technology offers highly precise measurement without material contact independent of medium temperature, tank shape, built-in parts or material characteristics.

**SIWAREX WP321**

- Technology module for the SIMATIC ET 200SP distributed I/O system
- For level measurements in silos and bunkers; convenient and seamless integration of platform scales directly into the automation environment

## Point level detection

We offer you a comprehensive portfolio for extremely reliable and precise point level detection. Our wide selection includes ultrasonic, rotating and vibrating level switches as well as RF capacitance switches with inverse frequency shift technology that are cost-effective and suitable for point level, interface detection, dry run and safety back-up applications including bulk solids, liquids and slurries.

**Vibrating, rotary paddle**

- Especially suitable for low bulk density applications
- Ideal for use in harsh and abrasive environments, thanks to their rugged design
- For detecting high, low and demand levels in solids, liquids and slurry applications
- A wide variety of configuration options makes them suitable for any environment
- Simple to use with no complicated setup or configuration
- Stainless steel, aluminum and plastic enclosure options and highgrade steel process connections provide exceptional resistance to mechanical forces, a long service life and low cost of ownership
- Options for SIL 2 / redundant SIL 3

**SITRANS LPS200**

- Rotary paddle switch that detects solids with densities as low as 15 g/l
- Motor protection
- SIL 2 certification for best-in-class reliability and performance
- Options for fail-safe rotation monitoring and alarming

**SITRANS LVL100 and LVL200**

- Vibrating level switches for liquid and slurry applications, including high, low and demand level alarms and pump protection
- Wide application range including high temperatures and pressures, hygienic versions, large variety of enclosure materials, SIL 2/redundant SIL 3 options and remote testing

**SITRANS LVS100, LVS200 and LVS300**

- Vibrating level switches that detect solids with densities as low as 5 g/l
- Best-in-class sensitivity detection
- Ability to handle and monitor buildup
- Options to detect solids interface within a liquid

## RF Capacitance

Pointek RF capacitance point level switches measure interfaces, solids, liquids, slurries and foam. The inverse frequency shift technology provides accurate and reliable measurement results even in dusty, turbulent and vaporous environments or in applications with product buildup. Small changes in level create large changes in frequency. Consequently, Pointek devices have greater sensitivity and consistently outperform conventional devices. With their rugged aluminum or chemically resistive plastic enclosures and wide variety of process connections, Siemens Pointek switches are compatible with most applications

**SITRANS LCS050 and Pointek CLS100**

- Suitable for level detection in constricted spaces
- Ability to ignore build-up
- Starting from 1/2 inch process connections
- IO-Link communication
- M12 connector
- Sensguard protection of probe for harsh and abrasive environments and chemically resistive probe types available

**Pointek CLS200 and CLS300**

- Suitable for level detection in demanding conditions with high pressures and temperatures
- Suitable for aggressive applications including very high temperatures and pressures
- SIL 2 options
- Smart PROFIBUS versions with digital display
- Remote operation via PROFIBUS for status and function testing
- Remote detection of buildup and monitoring of other process condition changes

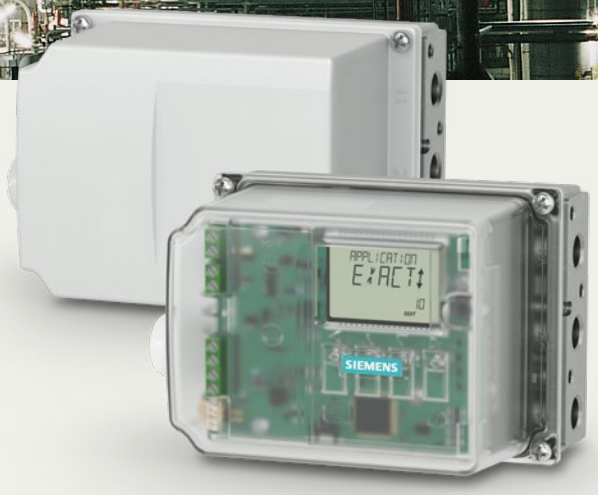
## Ultrasonic

**Pointek ULS200**

- Non-contacting ultrasonic level switch with two switch points
- Ideal for sticky materials and an effective solution for bulk solids, liquids and slurries

# Always in pole position: **SIPART Positioners**

As the interface between control system and valves, positioners play an important role in ensuring reliability and optimal performance in process plants around the world. Our proven portfolio with the SIPART PS2 and SIPART PS100 precisely controls the entire range of valves and masters even special tasks with absolute reliability.




**SIPART PS100** – easy to use, fast to commission and simply robust

- One-push initialization: fast commissioning at the push of a button
- Application parameters to select different modes of valve positioning, such as exact, fast, on-off or booster
- Internal non-contacting sensor: non-wearing and vibration-resistant
- Non-corrosive sound absorber for use in harsh environments
- Plain-text display with status icons in accordance with NAMUR NE107 and four operation buttons
- Remote operation via smartphone or tablet with retrofit-table Bluetooth adapter and SITRANS mobile IQ app

**SIPART PS2 – the all-around positioner**

SIPART PS2 has grown to become the most widely used positioner for linear and part-turn actuators. It is constructed to meet a wide variety of requirements:

- Polycarbonate, aluminum or stainless steel enclosure
- 316L stainless steel enclosure for nearshore, offshore as well as oil and gas applications in hazardous areas
- Ex d explosion-proof version
- Communication via PROFIBUS PA, FOUNDATION Fieldbus or HART
- Integrated booster option for quick control of large drives
- Low operating costs thanks to minimal air consumption
- Simplified commissioning with new position detection design

**More functions, more possibilities**

SIPART PS2 comes with an extensive range of functions and diagnostic capabilities, which we have improved even further:

- Optional pressure sensors: improved valve diagnostics and parameter monitoring
- Ready for digitalization: fast and predictive determination of valve maintenance requirements using the valve monitoring app
- Regular partial stroke tests: ensured movement of emergency shutdown (ESD) valves and other open/close valves in the event of an emergency
- Fail in Place: the valve remains in its last position upon loss of electrical and/or pneumatic power
- Fail Safe: the valve moves to the safety position; also suitable for SIL2 applications
- Valve perfomance tests (VPT): immediate, on-site assessment of valve maintenance requirements

**Positioner with remote control electronics**

- Suitable for use in environmental conditions with high-energy radiation

**Positioner with various external position transmitters**

- Easier access to positioner for valves at not easily accessible locations

# **Early detection protects** your process

Process protection devices can be used as early-warning systems to avoid costly interruptions and breakdowns of equipment. They detect flow problems, blockages, screen faults, machinery slowdowns or burst filter bags. Their rugged construction makes them impervious to dust, dirt, buildup and moisture.


**SITRANS WM300 MFA –** detects changes in the motion and speed of rotating, reciprocating or conveying equipment. It warns of equipment malfunction and signals through contacts to shut down machinery in case of a slowdown or failure.

- Motion failure alarm (MFA), differential speed detection (DSD) and non-contacting tachometer (NCT)
- Multiple alarms powered by four relays for overspeed or underspeed conditions from the sensors
- Intuitive programming thanks to a simple menu structure, along with an on-board display and push buttons

## Acoustic sensors

Non-invasive acoustic sensors detect inaudible, high-frequency acoustic emissions generated by friction and impact, caused by materials in motion.

**SITRANS DA400**

- Acoustic analyzer for condition monitoring of oscillating displacement pumps
- Simultaneous and continuous monitoring of up to four independent delivery valves
- Easy system operation and configuration either locally by LCD and keyboard or via PROFIBUS DP/PA


**SITRANS AS100**

- Detection of high-frequency acoustic emissions from friction or the impact of dust, powders, granulates and other solids
- Signaling of flow/no flow or high/low flow
- Compatible with SITRANS CU02, which processes signals from the sensor
- Provision of relay and analog outputs for connection into a process or direct connection to a PLC analog output

## Motion sensors

Non-contacting motion sensors detect changes in motion and speed of conveying, reciprocating and rotating machinery.

**SITRANS WM100**

- For detecting the absence or presence of motion of rotating, reciprocating and conveying equipment
- Heavy-duty alarm switch


**Milltronics MFA 4p**

- Plant protection through the detection of absence of motion, as well as underspeed or overspeed conditions
- Probes usable in hazardous, high-temperature and harsh conditions, thanks to their superior design
- With MSP or XPP probes

## Process controllers

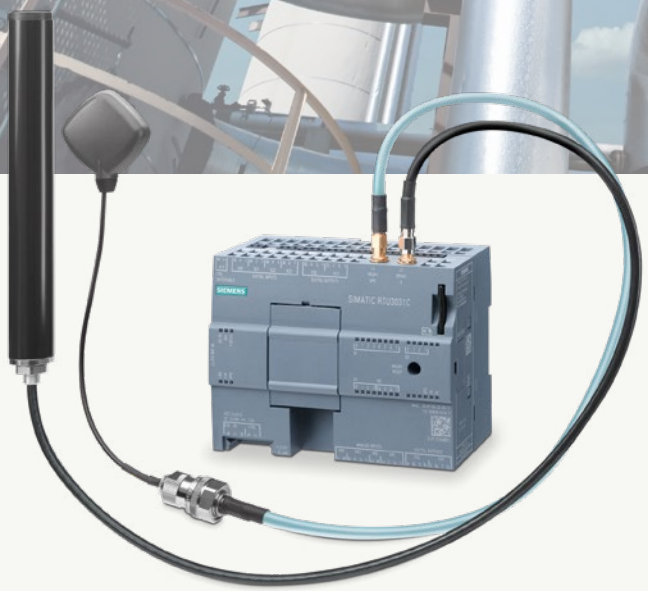
SIPART DR controllers are outstanding thanks to their extreme reliability and ease of use. Various software packages are available to make their handling easy and intuitive and to extend their scope of application. The standard version already offers comprehensive controller hardware that can be upgraded quickly and easily for specific applications by means of a large number of optional input and output modules. Plug-in modules for communications over RS 232/RS 485 or PROFIBUS DP are also available.

## Process recorders

SIREC D200, 300 and 400 display recorders are used for continuous monitoring of process quantities, plant maintenance, process optimization or troubleshooting. Our complete range of process recorders offers state-of-the-art solutions for the most demanding requirements.

# Information **where it is needed**

Supplementary components enhance your operations through seamless wireless communications, remote displays and remote monitoring solutions. Data capturing and alarming anywhere, at anytime? Remote monitoring is your answer. Opening up new communications options? WirelessHART meets that challenge. Whatever your need, Siemens' supplementary components are here to help.



Two versions are available:

- RTU3010C – only IE interface
- RTU3041C – 4G modem and GPS modem integrated

**SIMATIC RTU3000C**

The compact remote terminal unit enables remote measuring points, even when no local power grid is available

- Easy configuration using a Web browser instead of programming
- Flexible power supply from batteries, solar energy or 24 V DC
- Connection of process instrumentation by means of integrated digital or analog inputs (4...20 mA) or HART and Modbus RTU devices via Extension Board HART/RS485
- Works with every instrumentation via 4...20mA, HART and Modbus RTU
- Secure communication via integrated mobile wireless modem or via LAN port and industrial router such as SCALANCE M
- Extended temperature range from –40 °C to +70 °C as well as an optional enclosure meeting the IP68 standard
- Perfect companion for SITRANS serve IQ (csv files & emails) or direct interaction to Insights Hub apps (such as SITRANS store IQ) with MQTT native communication

## Remote digital displays

The universal remote digital displays allow users to view and access measurement data remotely from a convenient location. Our advanced range of remote displays includes options for pump control with communications including HART and Modbus RTU with flexible output options.


**SITRANS RD150**

- Remote display for 4 to 20 mA and HART devices
- Easy-to-use basic configuration of HART instruments using HART commands
- Ease of use through backlit menu-driven display with four buttons and flexible mounting options

**IE/PB Link**

- The network transition IE/PB LINK can constitute the gateway between PROFINET and PROFIBUS
- From the IO-controller viewpoint, all DP slaves are treated like IO devices with a PROFINET interface
- Use as a data records router for parameter assignment of field devices via SIMATIC PDM (Process Device Manager) in all plants with PROFIBUS DP

Two versions are available:

- IE/PB LINK PN IO - Gateway with PROFINET IO functionality, S7 routing and data record routing for standard ambient conditions.
- IE/PB LINK HA - Gateway optimized for use in the process industry due to the possibility of deployment in harsh ambient conditions and the connection of PROFIBUS field devices to a redundant AS as PROFINET IO controller.


**SITRANS RD200 and RD300**

- Universal and full-featured versions
- Ideal for flow rate, total and control applications as well as for use with most field devices
- Data logged and displayed on the PC with the free RD software
- Sunlight-readable display
- Standard serial communications output (Modbus RTU)
- Pump alternation control, linearization and square root and math functions


**SITRANS RD100**

- Loop-powered display
- Suitable for level, flow, pressure, temperature and weighing applications
- Can be used in a large variety of environments (low/high temperatures, hazardous areas)
- Simple setup and installation

# First-class solutions **for almost any weighing task**

Weighing and dosing processes are of great significance in many areas of industrial production. Whether for filling food and beverage containers or preparing recipes for chemicals and pharmaceutical products: With our solutions, you can count on absolute reliability and highest precision.

# **Available for all** requirements

The flexible design of our products makes it possible to implement weighing solutions from simple platform scales and gravimetric level measurement up to highly complex automatic scales with minimal conversion costs. Using SIWAREX load cells and electronic modules for weighing systems together with Siemens Milltronics belt scales and SITRANS weigh feeders and solids flowmeters, you can design an optimal system for practically every task.


**TM SIWAREX WP341 HF** – weighing electronics electronic for maximum precision

- Ultra-compact: 20 mm wide, 65 mm high
- Seamlessly integrated in ET 200SP system; works with S7-300, 400, 1200 and 1500 controllers
- Fast: 1,000 Hz sampling rate, digital output response time < 1 ms
- Intelligent firmware enables the weighing process to be controlled and optimized entirely from the weighing module
- Offers a compact and extremely versatile solution for continuous belt weighing applications
- Optionally the WP341 can be used for operation of solids flowmeters.
- Advanced diagnostic features in combination with SIWAREX DB
- Easy connection to Profinet, Profibus, Ethernet IP- and Modbus TCP/IP-based controllers via SIMATIC ET 200SP Interface Modules

**TM SIWAREX WP351 HF**

- Possible weighing applications include filling, bagging, checking, dosing and totalizing
- Fast: 1,000 Hz sampling rate, digital output response time < 1 ms
- Seamlessly integrated in ET 200SP system; works with S7-300, 400, 1200 and 1500 controllers
- Also integrated into PCS 7 by ET 200SP or ET 200SP HA dedicated add-on library
- Ultra-compact: 20 mm wide, 65 mm High
- Certified according OIML R-51, R-61, R-76 and R-107

**SIWAREX WP241**

- Electronic weighing system especially designed for belt scale applications
- Simulation mode allows for a full function test even without a connected belt scale
- Full integration into SIMATIC
- S7-1200 and TIA Portal; standalone operation without SIMATIC CPU is possible
- Factory-provided interfaces such as Modbus TCP/IP and Modbus RTU as well as digital and analog interfaces

**TM SIWAREX WP321 ST**

- For level measurements in silos and bunkers; convenient and seamless integration of platform scales directly into the automation environment
- Up to 600 Hz sample rate
- Technology module for the SIMATIC ET 200SP distributed I/O system
- Easy commissioning by HMI or by SIWATOOL (no prior knowledge of SIMATIC required)
- The ready-to-use sample application enables fast development and implementation of customer- and industry-specific solutions
- Seamless integration into PCS 7 by ET 200SP or ET 200SP HA and dedicated add-on library

**SIWAREX WP231**

- Weighing module for level monitoring of silos and bunkers, use in platform scales and weighing in hazardous areas
- Can be fully integrated into SIMATIC S7-1200 and therefore also programmed in the TIA Portal
- Can be operated without SIMATIC CPU
- Certified according to OIML R-76 – legal for trade as NAWI

**SIWAREX WP251**

- Electronic weighing system for completely independent control of dosing and filling tasks
- Full integration into SIMATIC S7-1200 and TIA Portal; standalone operation without SIMATIC CPU is possible
- Factory-provided interfaces such as Modbus TCP/IP and Modbus RTU as well as digital and analog interfaces
- Certified according to OIML R-51, R-61, R-76 and R-107 – legal for trade as NAWI, AGFI, ACI, DTI
- Multi-range/multi-interval scale with up to 3x3000d

**TM SIWAREX WP521 ST/WP522 ST**

- Optimal for use in platform scales as well as for level monitoring of silos and bunkers and in hazardous areas
- Technology module for the SIMATIC S7-1500 Advanced Controller family
- Two versions: SIWAREX WP521 ST single-channel design for one-scale systems and SIWAREX WP522 ST two-channel design for two-scale systems

## Stand-Alone Electronics

Standalone solution independent of automation solution and therefore ready to use

**Milltronics BW500/L / SIWAREX WP241 / WT231 / WT241**

- Milltronics BW500 and Milltronics SF500 (for solids flowmeter) are advanced integrators with additional control functions such as PID or batch controllers. BW500 also offers legal-for-trade options for belt scales like MID or NTEP.
- Milltronics BW500/L offers economical and basic operation for belt scales, including display of flow rate, load, speed and totalized material for belt scales and weigh feeders. The integrated keypad allows easy and convenient operation and programming.
- SIWAREX WP241 is a SIMATIC S7-1200-based integrator with high functionality for belt scales, fully integrated into PLC. Programming and visualization can take place via existing HMIs of the PLC or by notebook.
- SIWAREX WT231 is for stand-alone solutions and is also ideal for silo, platform and hopper scales.
- SIWAREX WT241 is for stand-alone solutions and is also ideal for belt scales.

## Digital junction box

**SIWAREX DB**

- Simplification of service via remote diagnostics for individual load cell
- Connection to SIMATIC automation system via SIWAREX WP weighing electronics
- Comprehensive monitoring of the weighing process down to the single load cells
- Access to specific error states such as wire break, overload, etc.
- Connection of up to four standard strain gauge load cells per scale
- Digitalization of proven strain gauge technology
- Rugged due to IP66
- Retrofit of existing plants easily possible by exchanging analog junction box against SIWAREX DB
- Digital corner load compensation

## IIOT Weighing solutions

SIMATIC IOT2000 SG-Shield offers an easy way to digitalize your weighing application, also for very specific industries with special requirements. Values measured by strain gauge cells can easily be viewed via remote. The system digitalizes the analog data and sends it to the cloud via the SIMATIC IOT2050 gateway. At the same time, the recorded measured values can be saved in Insights Hub, our cloud-based, open IoT operating system, and retrieved using an app, such as SITRANS Store IQ. For OEMs, SIMATIC IOT2000 SG-Shield is optionally also available with an RS485 interface with standard protocol.

## Weighing Mechanics

### Belt scales

Milltronics conveyor belt scales are the best choice for reliable, continuous in-line weighing of bulk solids.

- Weighing of raw materials, inventory checking and monitoring of production processes
- Market-leading performance under harsh conditions
- Easy installation and low maintenance overhead (no moving parts)
- Repeatable accuracy in productive operation, as well as minimal hysteresis and maximum linearity independent of horizontal forces thanks to unique parallelogram design of the load cells
- Integrated overload protection for the load cells
- More approvals than any other belt scale in the world


### Weigh feeders

- Maximum weighing accuracy for optimization of mixing, process sequences and balance calculations
- Reliable and continuous performance
- Virtually maintenance-free
- Various designs engineered to customer requirements


### Solids flowmeters

- Dust-tight inline weighing
- For continuous measurement of dry bulk materials, free-flowing powders or granulates throughput
- Also for critical functions such as batch loading processes and mixing processes

### SIWAREX WL200 load cells

The field-proven SIWAREX WL200 load cells are the perfect choice for reliable weight measurements.
A wide range of designs, capacities and certificates guarantee a perfect fit for all requirements.

- Suitable for operation in hazardous areas
- Large measuring range from 0.3 kg to 500 t
- Hermetically sealed for maximum service life
- Options with redundant design and for high temperature ranges are available
- Smart-design fastening parts for simple and safe installation
- High degree of protection (IP)
- Certified in accordance with OIML R-60

# For efficient **gas composition analysis**

The analysis of process gases is very complex. To obtain exact results on the composition of the gases, the measurement results must be very precise. Whether innovative analysis technology or in-depth knowledge of your application – we support you when it comes to efficient process analysis in compliance with strict legal requirements.

# Continuously and in a **matter of seconds**

From flue gas monitoring in waste incineration and power plants to gas analysis in the chemical industry or monitoring of rotary kilns in cement works – our high-precision, reliable analyzers get the job done. Our comprehensive range of process analytics products meets all your requirements for complete measuring instrument solutions. Device operation is menu-driven and designed in accordance with NAMUR guidelines.

**SIPROCESS GA700 –** the new standard for flexibility in gas analytics. Depending on the measuring task, SIPROCESS GA700 can be individually adapted to the respective requirements of the process by fitting selectable modules.

- A simple plug-and-measure operating concept
- Reliable measurement, optimized for numerous applications with internal correction of cross-interference
- An analyzer consisting of a basic device and one or two analyzer modules is ready for measurement
- The basic device can be operated in a 19" rack with three height units or in a wall-mounted version
- The communication interfaces present in the basic units can be adapted to the respective process environment or process control system using optional interface adapters

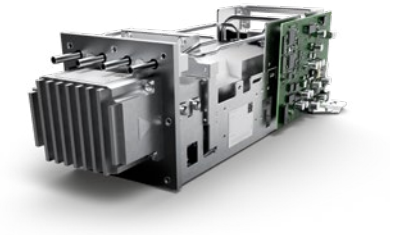
## SIPROCESS GA700 series wall- and rack-mounted enclosure options

The new SIPROCESS GA700 series for gas analysis lets you accommodate up to two modules in a single enclosure: either in a housing for wall mounting or in a 19" rack with three height units.

- Wall and rack enclosure with IP65 degree of protection as well as ATEX and IEC Ex approval
- Pressurized wall unit with Ex p degree of protection operational in combination with approved purging unit in Zone 1 and Zone 2, with flammable and occasionally explosive samples or non-combustible sample gases
- Wall unit with Ex eC degree of protection operational in Zone 2 with sample gases with concentration below the lower explosive limit (LEL)
- 19" rack-mounted enclosure with Ex eC degree of protection operational with suitable outer housing in Zone 2 with combustible or non-combustible gases

**SIPROCESS GA700 – Ex-field device**

- Pressure-resistant enclosure
- For Zone 1 and Zone 2 applications (only OXYMAT 7)



**SIPROCESS GA700 – ULTRAMAT 7**

- For boiler control measurements in incineration plants or process gas measurements in chemical plants
- High measurement accuracy with complex gas mixtures based on a dual-beam NDIR method
- Integrated option for interfering gas correction
- Equipped with preventive maintenance function

**SIPROCESS GA700 – OXYMAT 7**

- For measurement of oxygen concentrations
- Measuring range 0–0.5% (smallest measuring range) or 0–100% (largest measuring range)
- Extremely high measuring accuracy based on a paramagnetic alternating pressure principle
- For ambient temperatures up to 50 °C

**SIPROCESS GA700 – CALOMAT 7**

- With thermal conductivity detector for quantitative determination of $H_2$ and He in binary or quasi-binary gas mixtures
- Measuring range 0–0.5% (smallest measuring range) or 0–100% (largest measuring range)

**CALOMAT 6**

- Suitable for installation in Ex Zone 1 or Ex Zone 2
- For all areas of gas purity measurement up to use in processes for controlling production methods
- Approved to Safety Integrity Level 1 (SIL 1)
- For measuring the concentration of gas components such as $H_2$, $Cl_2$, HCl or $NH_3$ in binary or quasi-binary mixtures

**CALOMAT 62**

- Specifically designed to measure hydrogen and noble gases in corrosive environments, such as chlorine
- Uses the principle of thermal conductivity (TCD) and is designed specifically for measurements in corrosive gases, such as chlorine

**FIDAMAT 6**

- Measures total hydrocarbon concentration in the air or in gas mixtures with high boiling points
- Ideal solution for almost all measurement needs – from emission control to measurement of hydrocarbon traces in pure gas analysis or high hydrocarbon concentrations even in the presence of corrosive gases

**OXYMAT 6/61**

- Oxygen analyzer for standard applications
- Can be operated with ambient air as the reference gas that is passed to the analyzer unit by the built-in pump
- Approved to Safety Integrity Level 2 (SIL 2)

**OXYMAT 64**

- Special analyzer for measurement of trace oxygen in the ppm range
- For air-separation systems or technical gas production

**ULTRAMAT 23**

- For standard applications in various industries
- Benchmark for emission monitoring tasks
- Innovative multi-component gas analyzer with unique combination of UV and IR in one device
- For measuring UV-active and/or infrared-sensitive gases by means of the NDIR, as well as oxygen through the use of electrochemical or paramagnetic oxygen measuring cells
- Calibration with ambient air – no extra calibration gases needed
- Minimal maintenance effort guarantees high availability

**ULTRAMAT 6**

- Can be used from emission monitoring to process control, even with highly corrosive gases
- Analyzer in 19" rack design or field housing
- Measurement of up to four infrared-sensitive components in a single unit
- Approved to Safety Integrity Level 2 (SIL 2)

**ULTRAMAT/OXYMAT 6**

- Combines the features of ULTRAMAT 6 and OXYMAT 6 in a 19" analyzer
- Extremely space-saving and compact design
- Approved to Safety Integrity Level 2 (SIL 2)

**Ex versions**

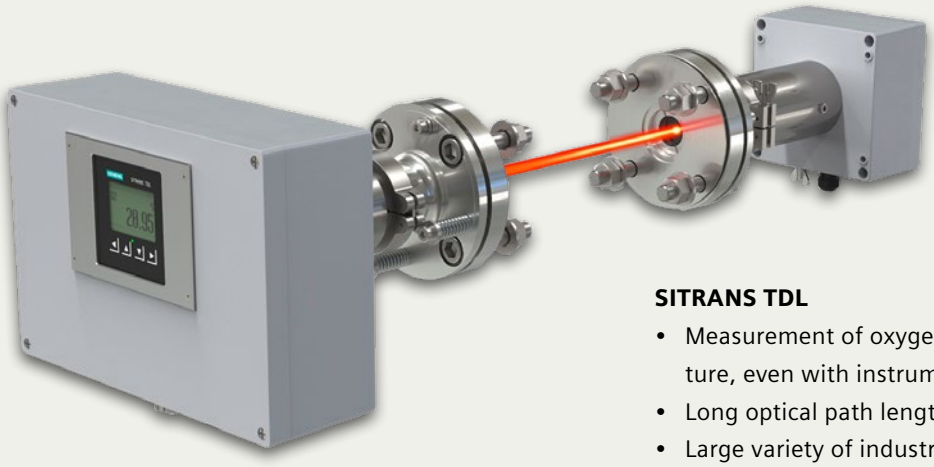
- Possible with an additional monitoring unit for CALOMAT, OXYMAT and ULTRAMAT gas analyzers in field housings
- Measurement of non-flammable and flammable gases

**SIPROCESS UV600**

- Particularly suitable for measurement of very low concentrations of NO, $NO_2$, $SO_2$ or $H_2S$
- UV gas analyzer
- Measurement of up to three components simultaneously
- Simultaneous measurement of NO and $NO_2$ allows determination of the total NOx concentration without need for additional devices such as $NO_2$ converters or CLD analyzers

# **Physical measurements** in the flow

In situ analyzers enable the measurement of physical properties directly in the flow of the actual process gas line. This means gases can also be measured under extreme conditions. Gas measurements with diode lasers are characterized by exceptional selectivity and flexibility. Integrated reference gas cells for line locking ensure extremely stable operation and long maintenance intervals.



**SITRANS TDL**

- Measurement of oxygen at up to 1100°C process temperature, even with instrument air for process purging
- Long optical path length of up to 30 m
- Large variety of industrial communication protocols
- Easy configuration and monitoring via intuitive HMI and Ethernet connection (integrated web server)
- Ready for future applications and customized solutions

**SITRANS SL**

- Ideal for oxygen measurements in harsh environments
- Reliable measurement of oxygen concentrations even with values in the zero range through patented technology
- Suitable for use in SIL 1 safety systems according to IEC 61508/IEC 61511

**LDS 6**

The LDS 6 gas analyzer consists of a central unit and up to three in-situ optics housings.

- Measurement of $NH_3$, HCl, HF, $H_2O$, CO or $CO_2$ in flue gas, for example before and after gas purification

# Measuring the **chemical composition**

The application of Siemens' MAXUM gas chromatographs provides the user with a number of benefits resulting from our innovative technologies combined with years of experience in the field of process gas chromatography. The flexibility of our products enables us to custom engineer the perfect solution for any application. The powerful and efficient chromatographs solve a wide variety of measuring tasks in various sectors including the chemicals, petrochemicals, refining, natural gas, gas processing and LNG industries.


**MAXUM Ed. II** is the result of decades of experience and technological developments. It sets the standard in the industry when it comes to flexibility, versatility and reliability.

- The modular design enables fast maintenance and higher analyzer availability during measurement and process optimization
- New thermal conductivity detector for MAXUM airbath/airless GC
- Simplification of even the most complex analytical systems with significantly reduced measuring times

**MAXUM Ed. II – type modular oven**

Our highly adaptable MAXUM Ed. II process gas chromatographs are the perfect match for a wide variety of process analytics applications, even with varying user requirements for each analyzer.

- Measures the chemical composition of gases and vaporized liquids
- Extremely rugged with specially designed hardware and software, simultaneous applications, parallel chromatography and reduced analysis times
- Valveless column switching
- Smart Sampling System Interface (SSSI)
- Ethernet TCP/IP network for multi-purpose communication between gas chromatographs, workstations and the process control system
- Meets the requirements for reliable on-line measurement in harsh process environments

# **Standardized system solutions** for various industries

The same application is required time and again in different branches of industry. To minimize effort, we have developed standardized system solutions for industry-specific applications. These complement the range of individual system solutions. Ready-to-use systems also help minimize the technical risk for customers.

**Set CEM CERT**

- Reliable, continuous emission measurement of the components CO, NO, $NO_2$, $SO_2$, $CO_2$ and $O_2$
- Modular analysis system for cold-extractive measuring tasks
- Simple operation and calibration by means of an operator panel integrated in the cabinet door
- The innovative CEMS is tested and certified in accordance with EN 15267 and EN 14181 and is suitable for IED 2010/75/EU applications
- Up to three analyzers possible, based on IR, UV, paramagnetic and electrochemical sensors

**Continuous Emission Monitoring: Set CEM 1**

- Efficient emission measuring system for continuous measurement of CO, NO, $NO_2$, $N_2O$, $SO_2$, $CO_2$, $O_2$, HCl, HF, $NH_3$ and $H_2O$
- The proven ULTRAMAT 23 and LDS 6 analyzers are at the core of the system
- Attractive price-performance ratio
- High degree of flexibility through system integration of all ULTRAMAT 23 modules

**Energy: Set GGA**

- Efficient emission measuring system for continuous measurement of CO, NO, $NO_2$, $N_2O$, $SO_2$, $CO_2$, $O_2$, HCl, HF, $NH_3$ and $H_2O$
- The proven ULTRAMAT 23 and LDS 6 analyzers are at the core of the system
- Attractive price-performance ratio
- High degree of flexibility through system integration of all ULTRAMAT 23 modules

**Biogas: Set BGA**

- The BGA set is based on the four-component ULTRAMAT 23 gas analyzer with selectable equipment and I/O components
- Safe monitoring and measurement of the major biogas components $CH_4$ and $CO_2$, and critical associated components $O_2$ and $H_2S$
- TÜV-tested design with high safety standard
- Modular sample preparation for interfacing of multiple measuring points can be configured
- Very rugged and durable industrial design

# Project support **right from the start**

Specification, installation and commissioning of analytical measurement systems are challenging. As your partner for process analytics solutions and products, we help you meet higher demands with fewer resources, tighter delivery deadlines, stricter specifications and more accurate documentation. Take advantage of our unique combination of analytical expertise, expertise in process technology and system integration.

**Individual solution concepts –** Continuous planning from the sampling point, including sample preparation, through to the complete analysis system in a cabinet or large shelter.

**Overview of our services portfolio**

- Service experts advise you during the entire lifecycle, starting with the selection of the right analyzer to emerging operational challenges
- Commissioning and start-up in the field by contract specialists all around the world
- Service contracts tailored to your individual needs
- Comprehensive training courses in our worldwide training centers or on site
- Provision of rental equipment
- On-call services to ensure fast support through experts in case of need
- Siemens AP offers customers extended warranty coverage for up to 5 years
- Remote services with proactive checks and rapid reactive assistance through remote access
- Fast, dependable, worldwide supply of spare parts ensures optimal availability


SIEMENS
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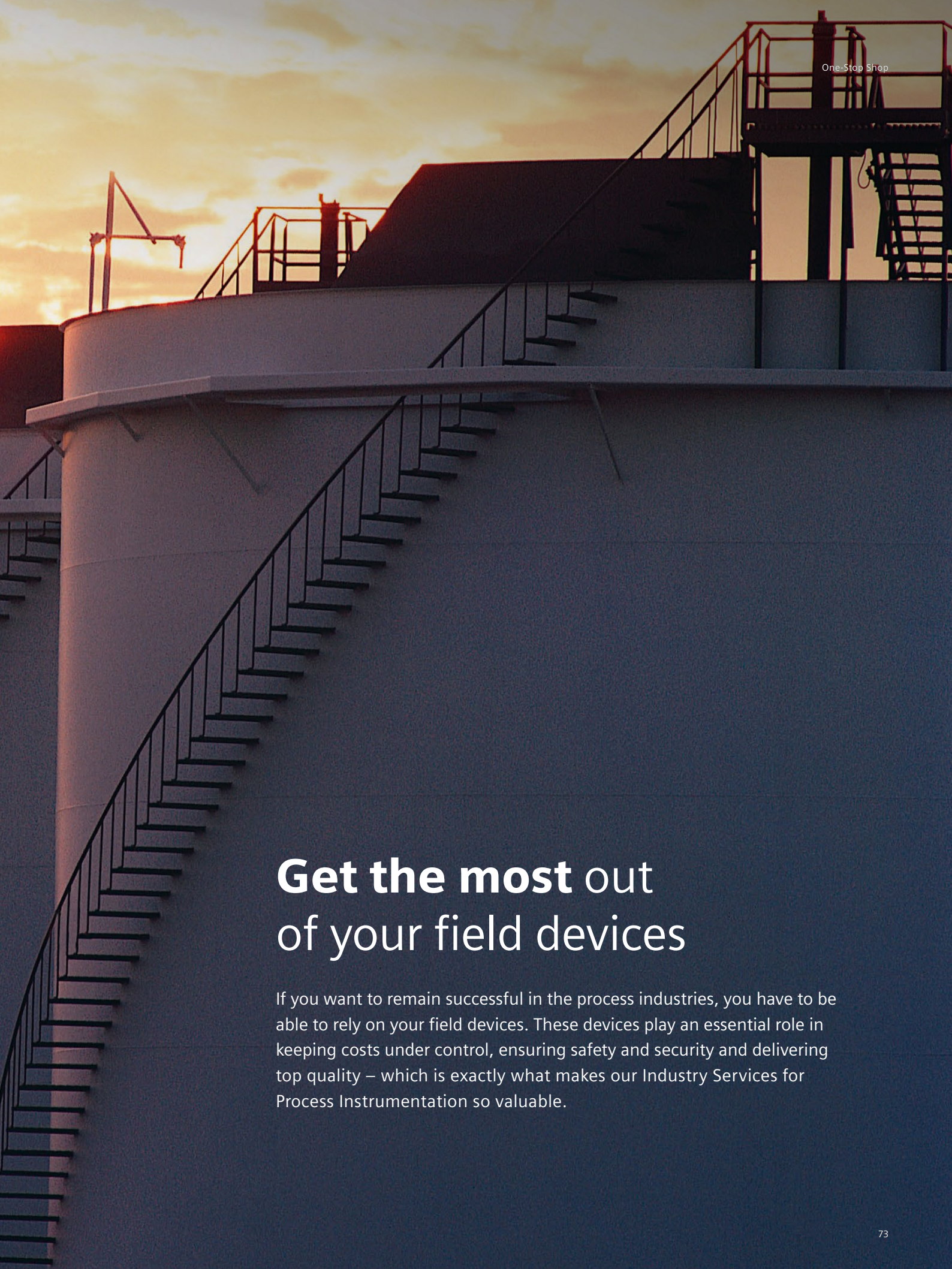
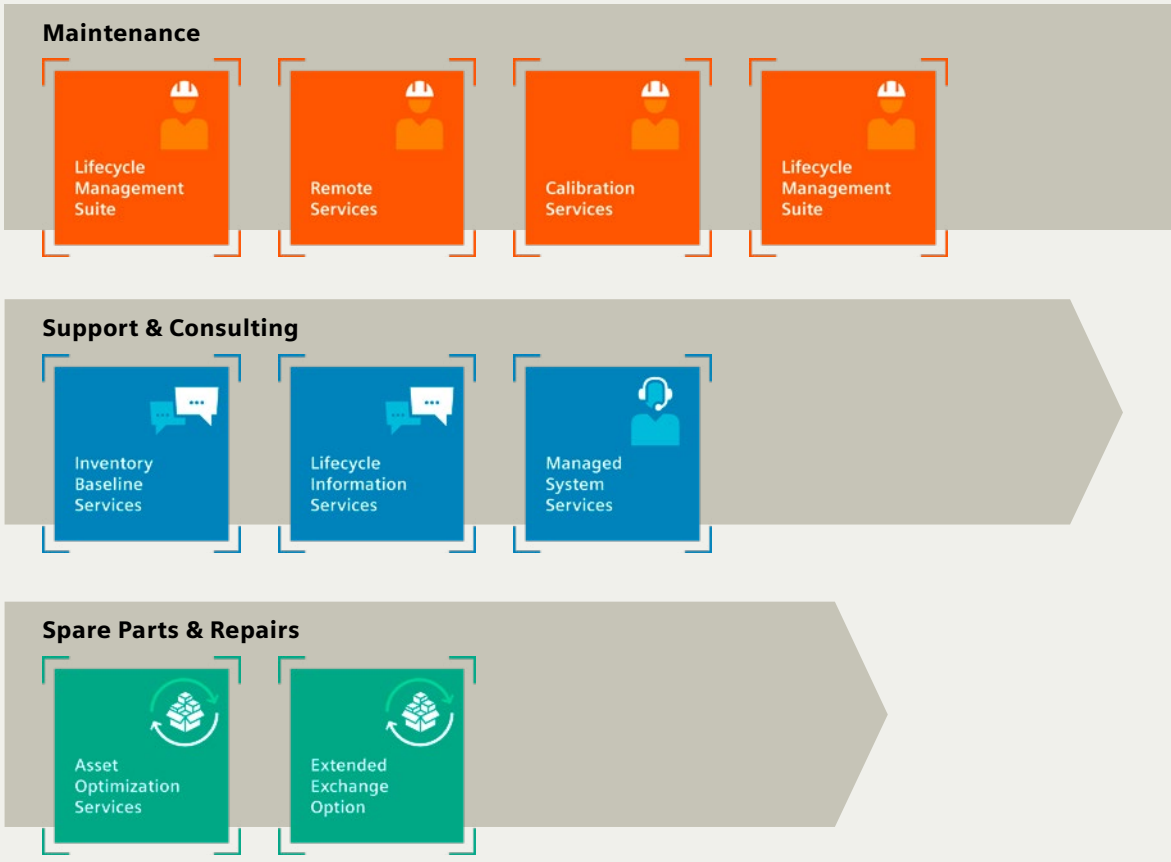


# **Get the most** out of your field devices

If you want to remain successful in the process industries, you have to be able to rely on your field devices. These devices play an essential role in keeping costs under control, ensuring safety and security and delivering top quality – which is exactly what makes our Industry Services for Process Instrumentation so valuable.

# Individually adaptable range of **expert services**

Whether you want to protect your investments, ensure the availability of your plant, plan your maintenance costs over the long term or modernize your plant at optimized costs – with our comprehensive range of services and support for all aspects of process instrumentation, we provide you with an efficient lever for achieving these goals. Our modular service portfolio can be tailored precisely to your specific requirements.

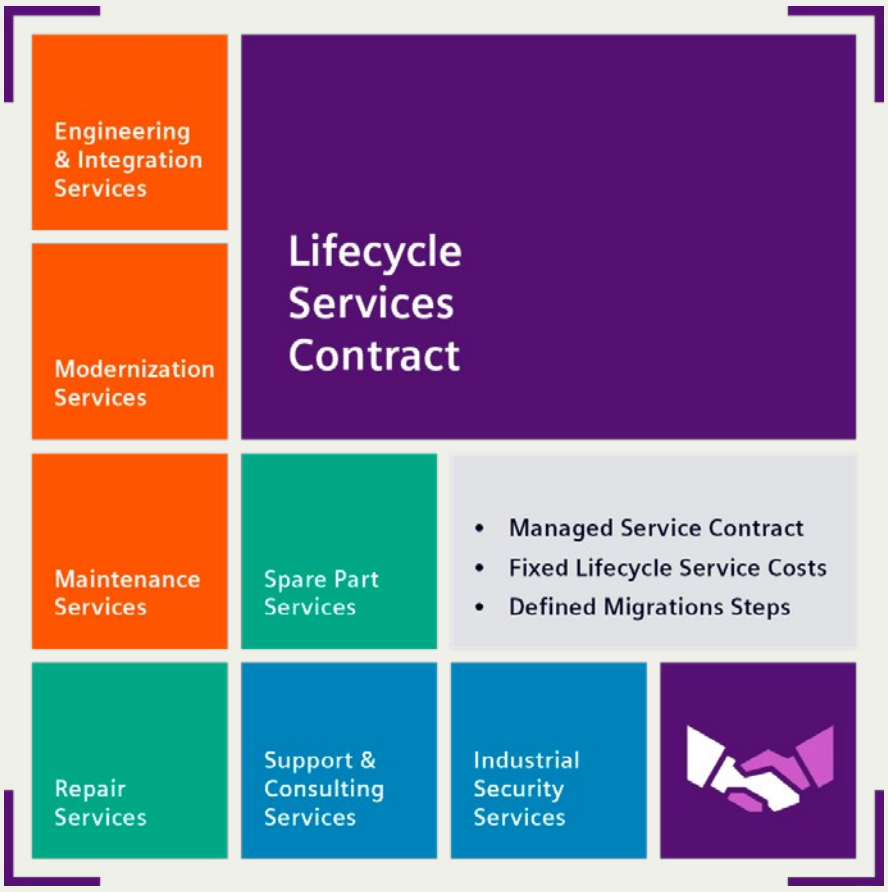


**Maintenance**
Maintaining field instruments is time-consuming, labor-intensive and – depending on whether it's performed inside or outside explosion-risk zones – involves a substantial outlay. In addition, the ever-growing demands for IT security play an increasingly important role. Our range of on-site services, platform-based remote services and comprehensive calibration services supports you in all your activities, from engineering and commissioning to maintenance.

**Support and consulting**
Siemens' Inventory Baseline Services and Lifecycle Information Services provide convenient and powerful portfolio elements for your installed base. We offer a comprehensive training program for design, operation and maintenance personnel that can take place either at the Siemens Training Center or on your premises. Managed System Services are focused on the efficient, centrally coordinated processing of complex support requests. They not only make all service and support activities transparent, they also significantly reduce service time.

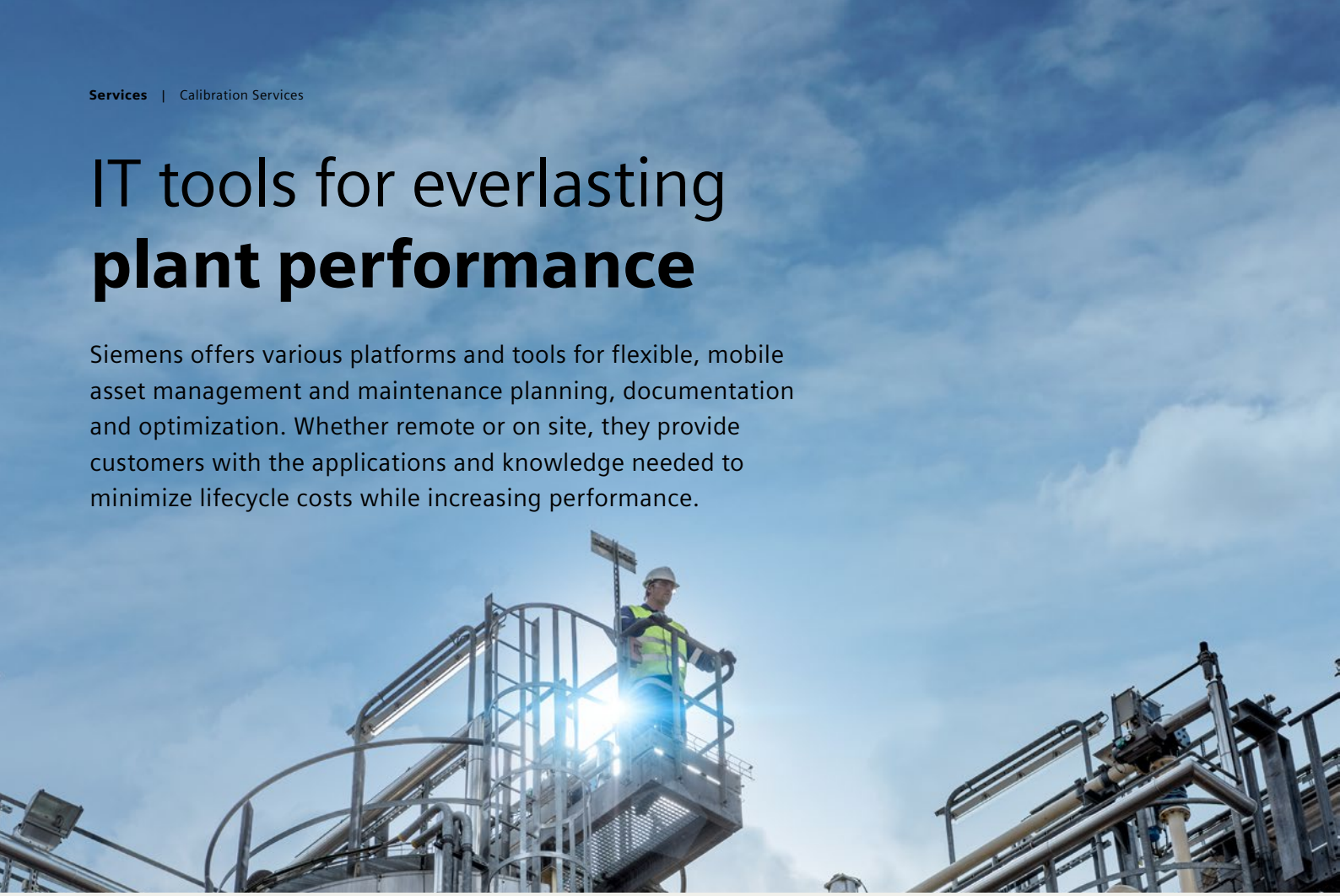
**Spare parts and repairs**
Asset Optimization Services take a structured, systematic approach to the comprehensive optimization of your supply of spare parts. With the Extended Exchange Option, you can protect any Siemens process instrumentation products you order from unforeseeable repair costs.

**Lifecycle services contracts**
A modular lifecycle services contract is composed of defined service elements and contract-specific parameters. Long-term investment protection and assured of serviceability are the essential benefits of a contract solution.



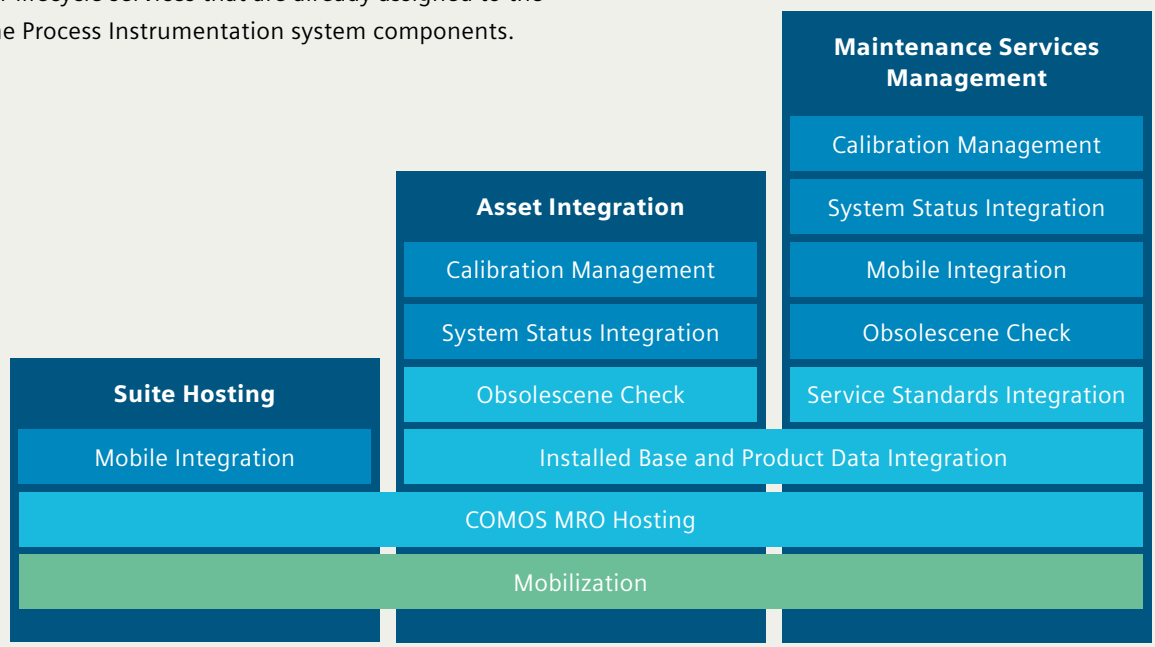
# IT tools for everlasting **plant performance**

Siemens offers various platforms and tools for flexible, mobile asset management and maintenance planning, documentation and optimization. Whether remote or on site, they provide customers with the applications and knowledge needed to minimize lifecycle costs while increasing performance.



**Lifecycle Management Suite**

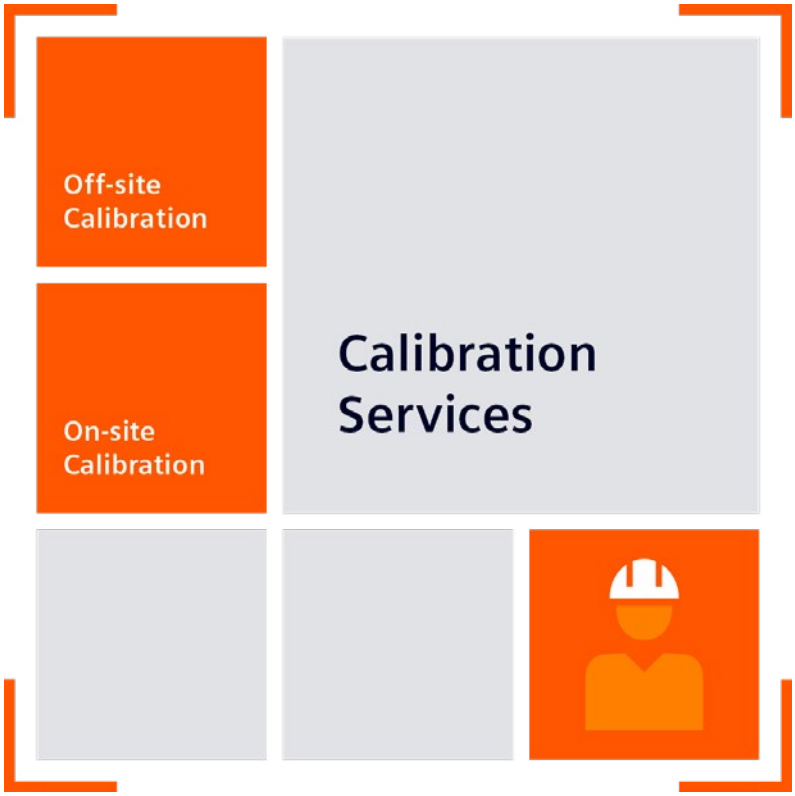
The Lifecycle Management Suite optimizes plant maintenance during the planning, execution and documentation of all service activities. The pre-configured, COMOS MRO-based system provides Standard Operating Procedures (SOPs) for lifecycle services that are already assigned to the SIMATIC PCS 7 and the Process Instrumentation system components.




**Lifecycle Management Suite** – Module structure

# Ensuring the highest level of **precision and process quality**

Calibration of the measuring and inspection equipment used is vital for precision, quality assurance and compliance in production, maintenance and service. Calibrating measuring and inspection equipment, like any precision engineering activity, requires proper expertise: This is the only way to ensure that equipment performs to long-term expectations and can be trusted for the job at hand.




**Off-site Calibration**
Make sure your measuring equipment meets industry standards and remains operational throughout its lifecycle. Regular certification of the accuracy of your measuring instruments provides peace of mind.
Our DIN EN ISO/IEC 17025:2018-accredited lab is fully equipped with state-of-the-art precision instrumentation providing a broad range of calibrations for dimensional, electronic and process equipment.

**On-site Calibration**
Maintaining and calibrating measuring equipment in time is an important matter during the operational phase of a plant's lifecycle. In selected regions, we can also provide our calibration services directly at your facility to ensure your processes do not suffer from extended downtime.

| | Pressure | Temperature | Flow | Dynamic Weighing |
|---|---|---|---|---|
| Off-site Calibration according to ISO 9001 | x | x | x | |
| Off-site Calibration according to ISO 17025 | x | x | x | |
| Off-site Domestic Custody Transfer Verification | | | x | |
| On-site Calibration according to ISO 9001* | | | | x |

* On-site services will be performed by local Siemens Customer Services. Please contact the Siemens office in your region for further information.

# Our global **support database**

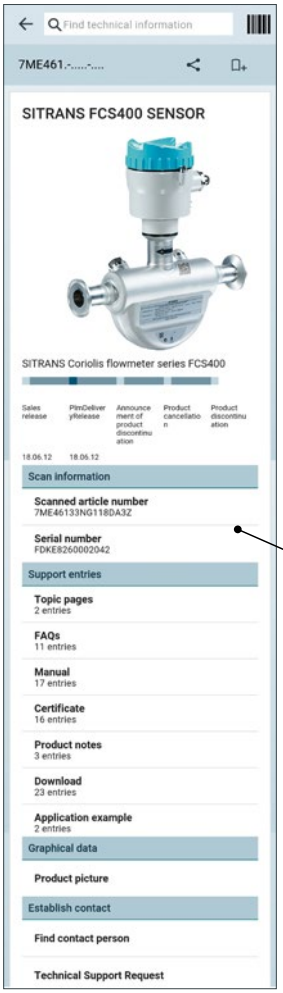
Access to accurate information is a huge asset in the field. Siemens Industry Online Support (SIOS) provides up-to-date information about specific products quickly and easily. Available in the online portal or in the downloadable smartphone app for maximum convenience.

**SIOS Portal**

24 hours a day, 365 days a year – this portal provides comprehensive information on the entire Siemens portfolio for process and discrete industries.

Find information on automation, communication and process instrumentation under:

- Product support: handbooks, manuals, FAQs, product notes, certificates
- Services: the service portfolio
- Support request: help – just state your issue and we will contact you within four working hours
- My support: activate notifications according to your needs

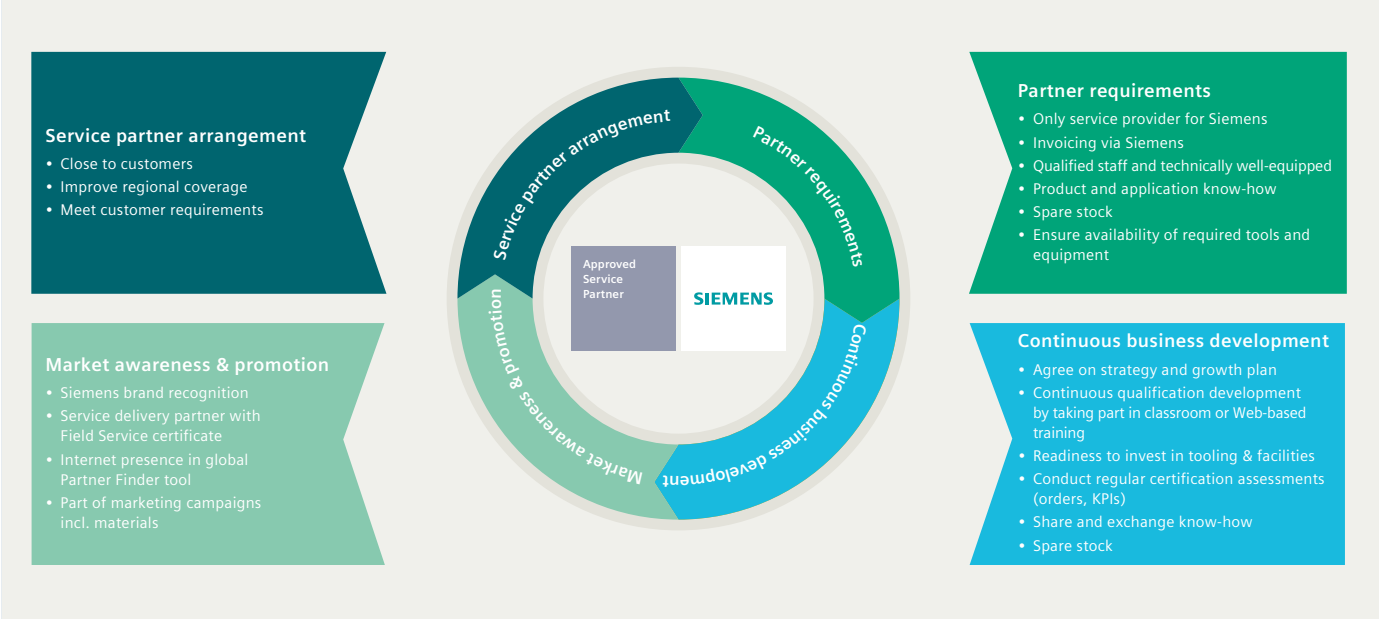



**Industry Support App**

- Download and install the app on your smartphone
- Scan the QR code of any device in the field
- Access comprehensive information including device-specific information like handbooks, manuals, FAQs, product notes
- Submit a support request and we will contact you within four working hours (even quicker with a premium service contact)

# **Approved and certified** – near you

Siemens partners stand for proven expertise and excellent customer support. The companies we accept as partners have proven their capabilities and been certified in accordance with rigorous standards. At the same time, we support our partners with the same criteria we apply to the training of our own employees.




**Role of partners**

- Act as a competent service provider on behalf of Siemens
- Regional on-site support
- Bring expertise and service capability
- Secure ongoing development of new service offers together with Siemens
- Win new service customers

**Siemens delivers quality**

- Based on shared interest (Siemens and partner)
- Partners attend Siemens training programs on a regular basis
- Build on existing long-term relationships between Siemens and partners
- An extensive and standardized process for selection, onboarding and management of partners provides globally uniform quality and standards

**Your benefits**

- Competent service delivery
- Close to customers (short reaction time)
- Fast access to critical spares (partner stock)
- Increased flexibility
- Partners typically enjoy a high degree of regional acceptance

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