

SIEMENS



Process Instrumentation and Analytics

With you all the way through the process for optimized productivity

Glass

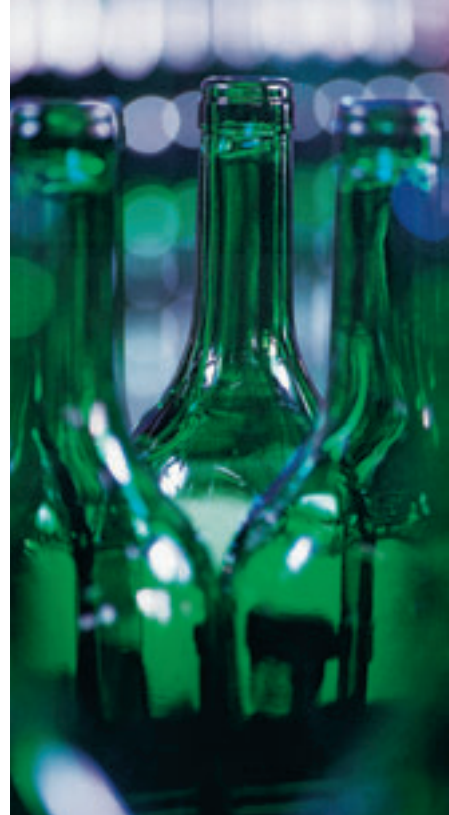


Answers for industry.



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Matching glass industry needs with Siemens solutions

Innovation and continuous improvement, reduced energy consumption, greater plant efficiency and reduced waste, the quest for better quality, the development of new markets and new glass products. These are just a few of the challenges and developments that characterize today's glass manufacturing sector.

In a world of high energy and commodity prices and where end user market pressure is tight, glass manufacturers need to be sure that their production processes are as efficient as possible.

Siemens delivers world-class solutions to meet the challenges faced by glass manufacturers, original equipment manufacturers (OEMs) and system integrators that work with glass manufacturers. We are able to address the full range of process instrumentation and analytics requirements – helping companies to:

- ensure a high level of **availability** of the production plant
- maximize **productivity**, ensure required quality and minimize rejects
- **optimize energy and resource consumption**, react quickly to changing market demands
- **reduce emissions** to meet local environmental directives in cost-effective ways
- have **integrated automation** of the production plant from the batch preparation to the cold end, enabling considerable cost reduction over the complete lifecycle of glass plants.

The key to optimizing a company's entire production process – from glass quality all the way to energy efficiency – is found in plant-wide automation solutions. Siemens process instrumentation and analytics products, fully integrated into the process control system SIMATIC PCS 7, enable a stable production process and thus highest plant efficiency.

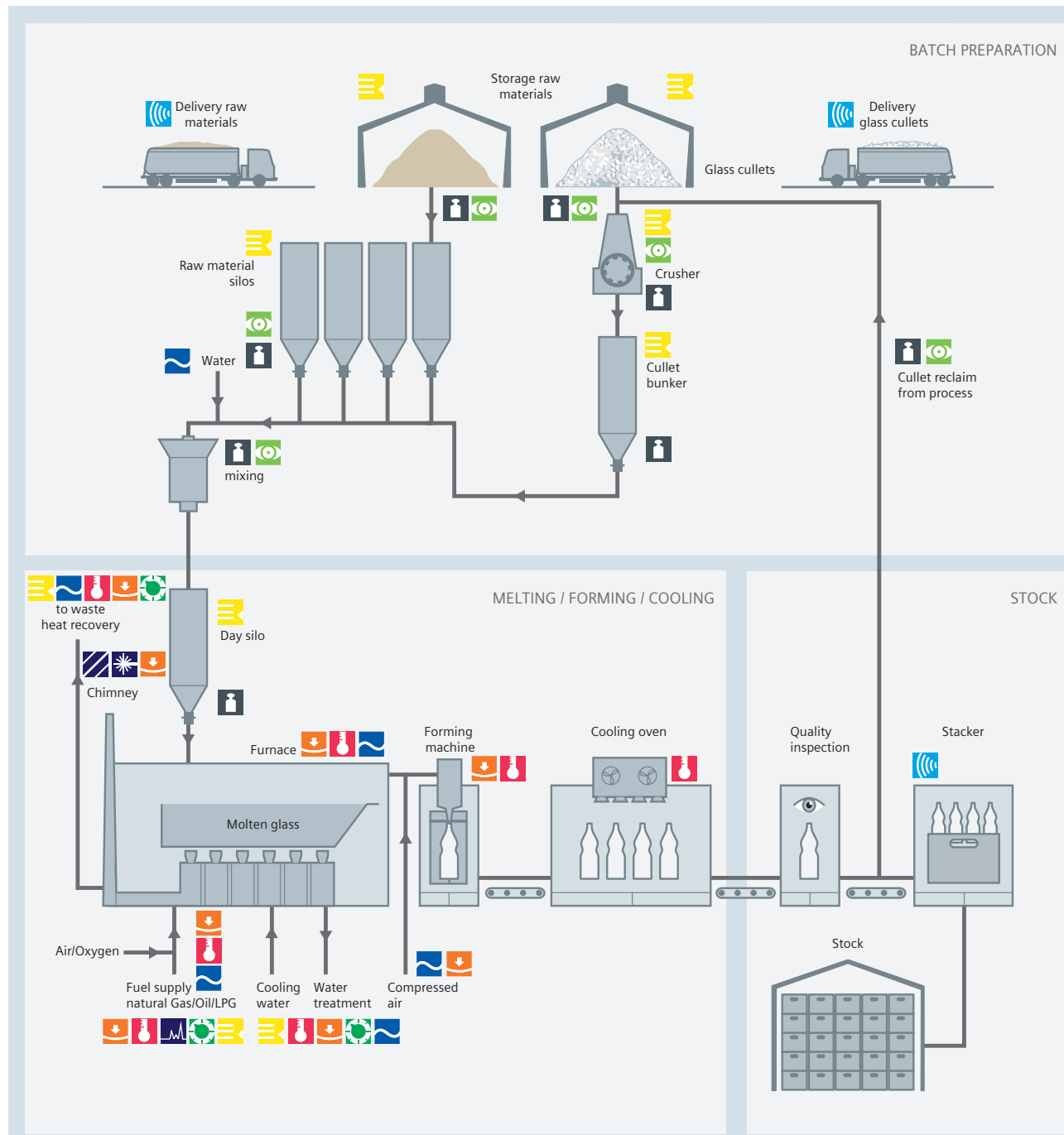
Our global reach and product scope, ranging from the enterprise level right down to the single instrumentation device, means that you can look to us for plant-wide integrated automation solutions.

In this brochure we show how Siemens process instrumentation and analytics are contributing to advantages for companies all the way through the glass manufacturing line.

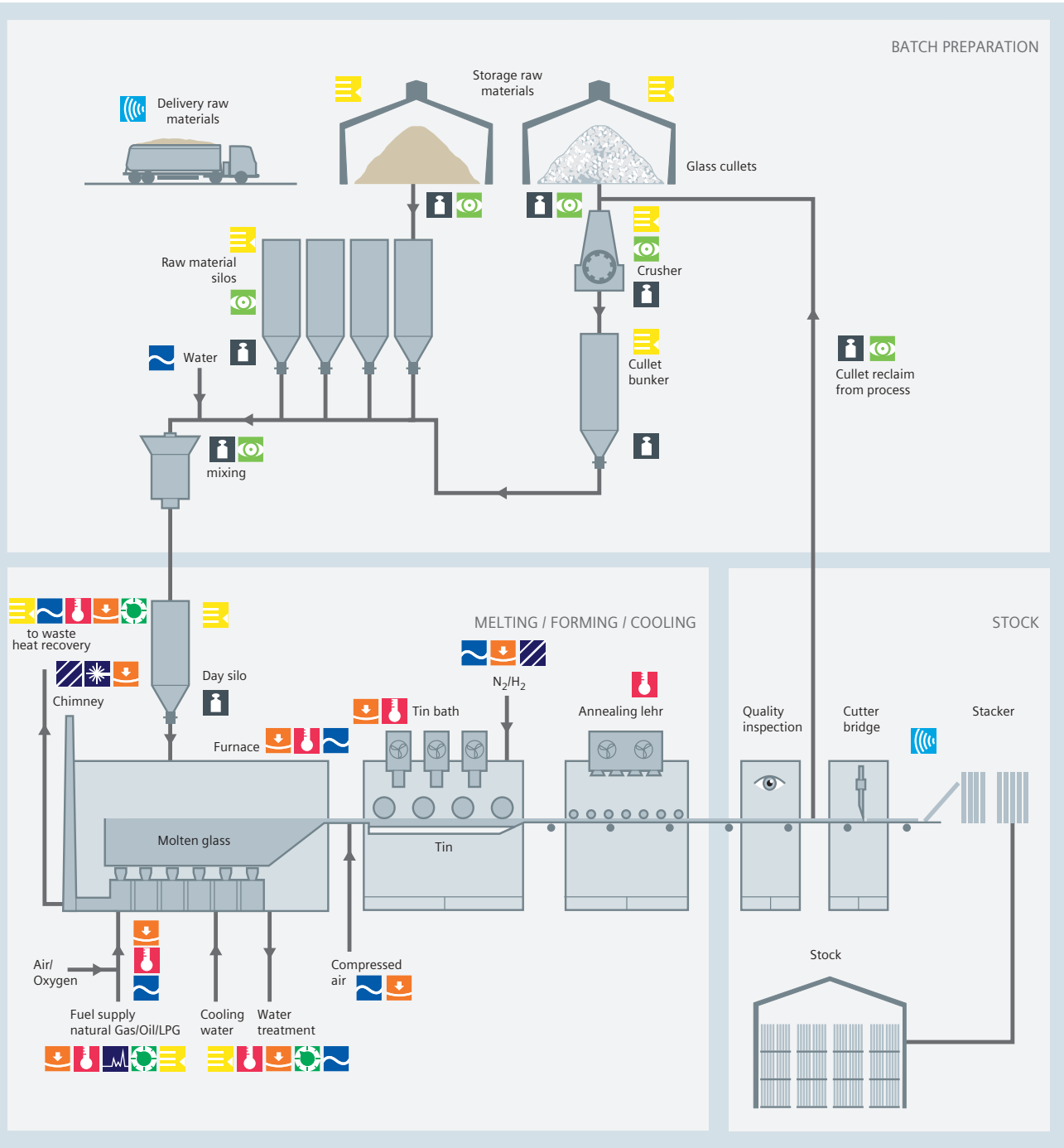
Glass process

Siemens offers process instrumentation and analytics, as well as weighing systems and identification products for a wide range of applications in float glass and hollow glass production processes.

Hollow glass



Float glass



Identification



Process protection



Gas chromatography



In-situ gas analytics



Continuous gas analytics

Preparation of raw materials

Sampling, weighing, measuring, mixing. Getting glass materials preparation right at the batch house is critical for total plant efficiency. End product quality relies on precise recipe and batch management, from unloading all the way through to mixing and despatch to the furnace. Spillage and other losses are to be avoided in order to keep raw material costs at a minimum. Wasted materials or wrong mixing also adds to already high energy costs. Siemens offers a perfectly matched weighing and instrumentation product portfolio for the preparation of the glass batch and improvement of batch house operations.

Weighing systems

Accurate raw material delivery and inventory management

The weigh bridge load cells, which register the amount of raw material being delivered by trucks to the plant, can be connected to a SIWAREX FTA. This is a SIMATIC module that allows direct integration in a SIMATIC PCS7 control system. The SIWAREX FTA is certified for trade approval and is extremely accurate.

Hopper weighing and precision in batch preparation

The accurate weighing, dosing and mixing of raw materials in the batch station is vital for product quality. Knowing the precise hopper content is essential to ensure product availability for processing. Siemens SIWAREX WL compression load cells offer a high resolution and high accuracy for even the highest loads.

Flow rate monitoring and control

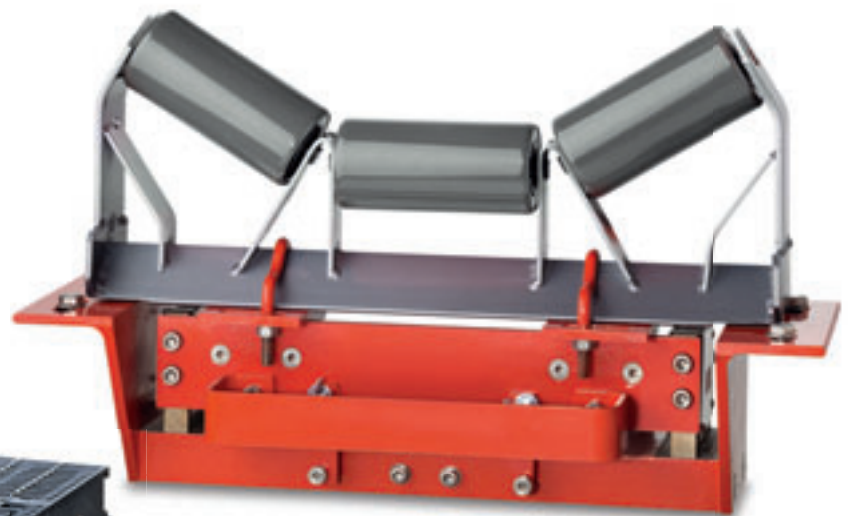
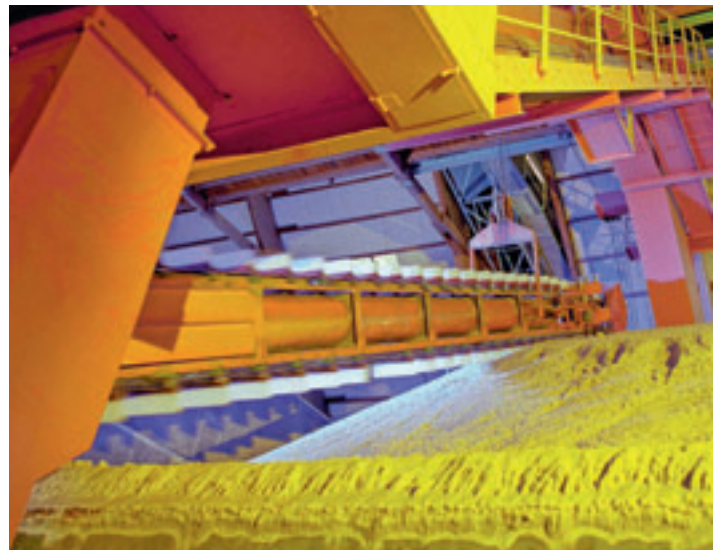
Siemens offers a wide range of belt scale devices for the weighing of solid raw material flows and cullet glass flows during conveyor belt transfer. Milltronics belt scales provide high accuracy weighing flows and combine high accuracy, low maintenance and a proven weigh frame with no moving parts. Calibration is easy using test weights.

In addition to belt scales, SITRANS WW weighfeeders with various belt widths are also available. Siemens weighfeeders measure and control the rate of material flow into or out of a process. These intelligent systems continuously measure the load on the belt and the belt velocity, from which they calculate the current delivery rate. They compare the quantity actually measured with the set point and control the belt velocity accordingly.

For applications involving continuous measurement of the throughput of free-flowing bulk materials and powders, Siemens offers low-maintenance SITRANS WF solids flowmeters.

Seamless integration into the control system

Our SIWAREX PLC-based weighing electronics provide a comprehensive range of weighing processors for force measurements, hopper, batching, differential batching, bagging, belt scales and solids flowmeters, this makes it easy for integration into the SIMATIC control system. Alternatively, stand-alone solutions with Milltronics BW500, BW500L and SF500 are also available.



At a glance – weighing technology in the batch house

- **Load cells** for precise hopper weighing – SIWAREX WL
- **Belt scales** to control the flow of raw materials on conveyors – Milltronics MSI, MUS, MCS
- **Solids flowmeters** for the measurement of free flowing bulk materials – SITRANS WF300
- **PLC-based weighing module and stand-alone integrators** to register the amount of raw material – SIWAREX FTA, SIWAREX FTC, Milltronics BW500, Milltronics BW500L



Level measurement

Accurate inventory management in the batch house

Siemens offers a wide range of contacting and non-contacting instrumentation for continuous level and point level measurement. Our intelligent level measurement devices give you the extreme precision and reliability you need. They are, proven in a range of hostile process conditions such as dust, high temperatures and abrasive environments encountered in glass manufacturing.

Exact bin and silo level measurements

Continuous, reliable level measurement of materials in bins and silos is essential for 24-hour operation. The SITRANS LR560 is a solids level measurement device with plug and play performance, making it ideal for most solids applications, including those with extreme dust and high temperatures. Operating at 78 GHz frequency, it emits a short wavelength to provide exceptional signal reflection even from solids with a steep angle of repose, like sand. The lens antenna of the SITRANS LR560 is highly resistant to product build-up and it is equipped with an air purge connection for self-cleaning of extremely sticky solids.

SITRANS LU ultrasonic technology is a highly cost-effective solution for general level applications in the glass industry. For precise level measurement of short- to long-range open air solids, SITRANS LUT400 combined with Siemens Echomax transducers are an ideal fit. These transducers have self-cleaning faces and their robust design can handle tough applications.

Overfill protection

The Siemens range of level switches uses a wide choice of ultrasonic, rotating and vibrating as well as Inverse Frequency Shift capacitance technology.

The Pointek CLS unit comes with the technological innovations suited to the requirements of glass production processes, such as high sensitivity and resistance to product build-up. If wear is a concern, particularly in the cullet bin, the non-contacting Pointek ULS level detection switch is the right solution.

At a glance – level measurement in the batch house

- **Radar level** device to measure level of raw materials in bins and silos – SITRANS LR560
- **Ultrasonic level measurement** on stockpiles and short-range solids – SITRANS LUT400
- **Level switches** for overfill protection – Pointek CLS and Pointek ULS



Melting, forming, cooling

Process analysis and control are at the heart of glassmaking efficiency at the furnace, forming and cooling stages. Parameters such as temperature, pressure and gas analysis are vital not just for improving glass quality but also for protecting and maintaining assets, e.g. the furnace, and minimizing energy consumption and emissions. Careful monitoring and control of the temperature profile is vital at the cooling stage.

Siemens' process instrumentation and analytics is helping companies optimize heating and cooling conditions. Our instrumentation and analytics devices are designed to give reliable, accurate information and are able to withstand the intense heat of the furnace environment. We also have equipment suited to a range of requirements during the forming process, such as gas monitoring of the atmosphere in the tin bath.

Gas monitoring

Monitoring of the fuel gas

Around 75% of the energy for glass manufacturing is used in the melting process, and natural gas is commonly used to heat the furnace. The quality of the fuel gas will affect the efficiency of the burners. Gas suppliers guarantee the gas quality within specified limits but even fluctuations within these limits have an impact on burning efficiency. By monitoring gas quality online, the process control system can adjust the burners accordingly.

Process gas chromatography

Using SITRANS CV gas quality monitoring through chromatographic determination of the calorific value allows the burning process to be optimally managed within the process control system. This ensures that the exact amount of natural gas is being fed in, significantly reducing fuel consumption. It also results in a more stable burning temperature, which extends the service life of the furnace and considerably improves glass quality. And the flue gas emissions of gas-fired furnaces can be significantly reduced.

The SITRANS CV rapidly and precisely determines all the necessary information on the quality of natural gas such as its calorific value or gas composition. Its rugged and explosion-proof design means the analyzer can be installed close to the sample point without any shelter.

Continuous gas analysis in-situ

Siemens' LDS 6 and SITRANS SL are based on diode laser technology which allows a fast measurement directly at the process. No sample extraction or sample preparation is required. The LDS 6 is a well proven in-situ analyzer, able to withstand high temperatures and operate under harsh environmental conditions. A typical application is to monitor HF and/or HCl emissions in stack gas. The SITRANS SL is a compact transmitter-like designed gas analyzer for fast in-situ measurement of oxygen and carbon monoxide concentrations in process gases.

Online monitoring of protective atmosphere in the tin bath

One of the major concerns in the float glass production line is to prevent oxidation of the tin bath. Oxygen may enter by leaks or diffusion from the glass sheet and may cause various defects on the glass sheet surface. In this case minimum quantities of oxygen will react to tin oxide, which will in turn lead to a reaction with the melting glass. A nitrogen/hydrogen protective atmosphere prevents oxidation but needs careful monitoring.

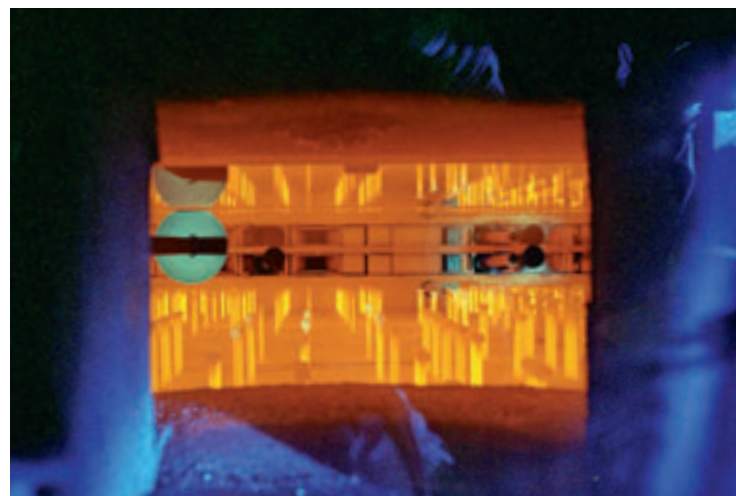
Siemens' OXYMAT64 is based on ZrO₂ technology to measure the smallest oxygen concentrations in pure gas applications such as in nitrogen purge gas for the tin bath. It enables corrective measures to occur in time to avoid any oxygen-related damage to the glass surface and the need for time-consuming extra hydrogen purging of the bath atmosphere. In addition, the CALOMAT6 uses a thermal conductivity detection (TCD) method to measure the hydrogen concentration, offering the opportunity to optimize the nitrogen/hydrogen protective atmosphere.



Emission monitoring

Emissions reporting is an important legal requirement for glass manufacturers in many regions. The Ultramat 23 is a cost-effective multi-component analyzer for the measurement of up to three infrared sensitive gases (NDIR principle) such as CO, NO_x and SO₂ plus oxygen electrochemical or paramagnetic cell. The analyzer is suitable for a wide range of standard applications including continuous emission monitoring such as of flue gas from the furnace section. Calibration using ambient air eliminates the need for expensive calibration gases.

Siemens offers with SET CEM a complete monitoring solution based on ULTRAMAT 23/LDS supporting the efforts to fulfill negotiated environmental agreements in conjunction with national ambient air quality regulations.



At a glance – process analytics for furnace, tin bath, emission monitoring

- **Gas analysis** to measure CO, CO₂, O₂, H₂ for process optimization – Ultramat 23, Oxymat 6 and SITRANS LDS6, SITRANS SL
- **Gas chromatography** to optimize gas consumption and increase lifetime of furnace – SITRANS CV
- **Emission monitoring** to comply with environmental legislation – CEMS analytical package

Pressure and temperature measurement

Pressure control in the furnace

Furnace pressure control can have a significant effect on energy consumption and refractory wear. Energy efficiency and environmental emissions are influenced by air/fuel ratio control. The SITRANS P pressure transmitter family provides an ideal solution in several applications across the glass production line.

The SITRANS P DSIII series are highly accurate and user-friendly digital pressure transmitters for measuring gauge pressure, absolute pressure, differential pressure, flow and level. Even the standard devices offer comprehensive communication, diagnostics and simulation functions with high reliability.

The SITRANS P500 ensures accuracy, extensive diagnostics, long term stability and sets new standards in pressure management. With a measuring accuracy of 0.03% and total performance of 0.09%, the SITRANS P500 offers measuring results which meet the highest requirements. The long-term stability of 0.05 %/5 years and 0.08 %/10 years ensures measuring results you can trust over the long term, which reduces maintenance costs.

Temperature measurement in the furnace

Whatever you are looking for in a temperature transmitter, SITRANS T temperature measurement devices give you an answer. Ideal for use all around the furnace, the SITRANS TH300 with HART-protocol is designed to support all common thermocouples, resistance and millivolt sensors. Setup is quick and easy with SIMATIC PDM or a hand-held communicator.

Control in the float bath and annealing Lehr

Siemens' pressure and temperature measurement don't stop at the furnace.

In the cooling oven, Siemens instrumentation gives manufacturers the information to control reheating and cooling that is needed to follow a precise temperature profile and eliminate inner material tension. Exact, reliable temperature measurement is prerequisite.

Rail mounted SITRANS TW temperature transducers are ideal for installation in glass manufacturing control rooms with very high ambient temperatures. These units are applicable for all common types of temperature sensors and current/voltage/resistance measurement. Galvanic protection of all circuits is guaranteed. Siemens offers suitable thermocouples and temperature sensors.





At a glance – furnace, tin bath, annealing lehr process control

- **Pressure measurement** in the furnace, of water and gas – SITRANS P DS III, SITRANS P500, wireless HART SITRANS P280 pressure transmitter
- **Temperature measurement** to control heating and cooling, and temperature water and gas – SITRANS TF, SITRANS TW, SITRANS TH300, thermocouple, wireless HART SITRANS T280
- **Flow measurement** of combustion air, gas, fuel, cooling water and compressed air – SITRANS P DSIII differential pressure transmitter
- **Flow measurement** of fuel, cooling water – SITRANS FM magnetic, SITRANS FC coriolis flowmeter
- **Valve positioner** SIPART PS2 to control all types of valves

Tracking and tracing at the cold end

At the 'cold end', Siemens has a range of products to track and trace all the individual processing steps. These include code reading systems with OCR (optical character recognition) that are particularly advantageous for quality control as they integrate fully into the manufacturing execution system (MES) via Siemens' SIMATIC PLC.

Optical character recognition for tracking & tracing and quality control

Siemens' SIMATIC Ident is a comprehensive product portfolio for industrial identification. It comprises RFID systems as well as optical code reading systems. The stationary 1D/2D code reading systems, SIMATIC MV420 and SIMATIC MV440, are characterized by their high-speed and reliable reading performance – even under severe environmental conditions in industrial use. They read easy, high-contrast codes as well as the difficult-to-read DPM codes (direct part marking).

Renowned glass companies have chosen the stationary 1D/2D code reading system SIMATIC MV440 for installation on the production line of their thin film solar power

modules. Thanks to the short exposure times and the enormous light intensity, the code reading systems can read at the full operating speed of the production line. This solution also supports the preventive maintenance of the lasers.

The integration of the reader into the visualization system of the plant can be performed by calling the ready-made user interface from the web server of the reader. Apart from an HTML browser, such as Internet Explorer with Java Runtime Environment, no other software is required.





At a glance –
tracking and tracing systems at the cold end

- **Code reading systems** for identification and traceability of the end product – SIMATIC MV420, MV440

Minimize utility consumption

Glassmaking is a highly energy-intensive process. Managing energy and other utility costs is vital for competitiveness and margin enhancement. Burning fuel, electricity, water, compressed air, hydrogen and nitrogen are all important utility inputs for glass manufacturers. Pricing pressures are affecting all these inputs. In an era of high energy costs, giving top priority to effective energy control is more important than ever.

Exact and reliable information, linked into an effective control system, ensures minimum consumption of gas, electricity and other inputs such as compressed air and water. It also reduces maintenance costs through preventive maintenance functions. For all units we provide you with the best instrumentation solution for your application.

A range of water applications

For the vast majority of chilled water applications, the electromagnetic flowmeter SITRANS F M is the best choice. An integral self-monitoring circuit surveys all functions and gives an alarm in the event of any mal-function. In combined heating and cooling applications, the ultrasonic flowmeter SITRANS F US is the best choice. It provides high accuracy energy measurements and measures all water types including special treated water with low electrical conductivity and magnetite.

Advanced pump control

SITRANS LUT400 series ultrasonic controllers also contribute to water treatment energy savings thanks to advanced pump control routines that allow users to minimize pumping during peak energy periods.

Optimized burner control

In many glass production plants combustion fuel is used for melting the raw material. Increasing energy prices makes fuel more and more a substantial part of the total production costs of a plant. Exact measurement of fuel flow rates is therefore crucial for saving energy costs. SITRANS FC430 coriolis flow meter has a very high accuracy of 0.1% with low pressure loss and saves fuel consumption through precise and reliable measurement. In addition, more exact measurement enables the control of optimal melting conditions and protecting the assets.

Easy retrofitting with clamp-on technology

SITRANS F US allows retrofitting of transducers under pressure with clamp-on or hot-tap technology – very cost-effective solutions. The utilization of externally mounted sensors that are quickly and easily mounted on the outside of the pipe is also a perfect solution for applications where corrosive, toxic or high-pressure liquids rule out the option of cutting the pipe.

Energy saving by reduced pressurized air consumption

The SIPART PS2 valve positioner saves energy and maintenance costs through its lower air consumption and, in turn, lower compressor use. This intelligent device is equipped with comprehensive diagnostic capabilities, giving diagnostic data on itself, its environment, the valve and actuator. This diagnostic capability sets standards for cost efficiency, reduces maintenance requirements in the plant, guarantees safe process control and provides high functional safety in emergency situations.

At a glance – minimize utility consumption

- **Coriolis flow measurement** in gas and liquid applications – SITRANS F C
- **Electromagnetic flow measurement** in water and wastewater applications – SITRANS F M
- **Ultrasonic flowmeters** to measure liquids – SITRANS F US
- **Vortex flowmeter** to measure steam, gas (e.g. compressed air) and liquids – SITRANS FX
- **Differential pressure** transmitter as a basic flow measurement option – SITRANS P
- **Valve positioner** for reduced air consumption – SIPART PS2



Waste heat recovery

Waste heat is a major efficiency and energy production opportunity. Large amounts of waste heat with temperatures between 400°C and 800°C are produced from glassmaking. But many companies are still failing to make use of the energy generation potential of such heat. The electrical energy from waste heat could cover up to half a glass manufacturing plant's total electricity needs. Siemens, together with well-known plant constructors, can provide innovative and cost-effective heat recovery systems.

Successful glassmaking waste heat recovery

Siemens process instrumentation helps monitor the waste heat recovery equipment like boiler, turbine, condenser and the cooling water circuit.

Control of the heat recovery equipment can be easily integrated in the SIMATIC PCS 7 process control system for glass production. Control and monitoring are therefore carried out from the central control room, and uniformity of automation is thus ensured throughout the entire plant.

At a glance – exact control of waste heat recovery equipment

- **Flow measurement** at the boiler, condenser and cooling water circuit – SITRANS F M MAG 3100, SITRANS F M MAG 5100 W, SITRANS FX300, SITRANS FUE380
- **Level measurement** of the condenser storage tank, waste water collection tank, cooling tower and feed water system – SITRANS Probe LU, SITRANS LR250, SITRANS LVL200 and SITRANS LG200
- **Pressure measurement** at the boiler, condenser and turbine – SITRANS P DS III
- **Temperature measurement** at the boiler, condenser and turbine – SITRANS T





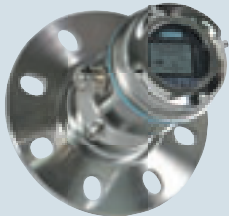


Product range

Siemens offers the most comprehensive product range for the glass industry and has a solution for even the most difficult measurements.






Continuous level measurement

Radar

		
Non contacting for solids	Non contacting for liquids	Guided wave
SITRANS LR560 2-wire, 78 GHz FMCW radar level transmitter measures virtually any solids material to a range of 100 m (328 ft), and provides exceptional signal reflection even from solids with a steep angle of repose, like sand. The 4° beam allows installation on tall nozzles or even on narrow silos. Highly resistant to product build-up; integrated self-cleaning function.	SITRANS LR250 is a 2-wire, 25 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage and process vessels including high temperature and pressure, to a range of 20 m (66 ft).	SITRANS LG200 is a 2-wire, guided wave radar transmitter for short- to medium range level measurement of liquids and solids. It can be used with a variety of different sensors and it is unaffected by high temperature, high pressure, or steam.



Flow measurement

			
Electromagnetic flowmeters	Clamp-on ultrasonic flowmeters	Coriolis flowmeter	Vortex flowmeters
SITRANS F M is a full series of AC/DC electromagnetic flowmeters for measuring the flow of electrically conductive liquids and slurries in a wide range of applications.	The key feature of the SITRANS F US clamp-on ultrasonic flow technology is the externally-mounted sensor which is quickly and easily installed on the outside of the line, without having to cut the pipe. The technology provides highly accurate measurement of liquids and gases on pipes of all different sizes.	SITRANS FC430 is the market's most compact Coriolis solution for gas and liquids, delivering reliable information on mass flow, volume flow, temperature, density and concentration. The highly accurate measurement is unaffected by variations in pressure, temperature, density, electrical conductivity and viscosity.	The SITRANS FX300 vortex flowmeter provides accurate standard volumetric and mass flow measurement of steam, gases and liquids as an all-in-one solution with integrated temperature and pressure compensation.

		 Point level
Ultrasonic		
		
Level controllers and transducers	Compact transmitter	Point level switches
<p>SITRANS LUT400 ultrasonic controller provides reliability and precision in your applications. With exceptional ease of use, this controller is ideal for level measurement of liquids and short- to long-range open air solids, offering relays, a suite of built-in alarms, pump and other control routines. Siemens Echomax transducers feature self-cleaning faces and a robust design for tough applications.</p>	<p>SITRANS Probe LU is a short-range 2-wire, loop powered ultrasonic transmitter for level and volume of liquids in storage and process vessels.</p>	<p>Pointek CLS and ULS200, SITRANS LPS200, SITRANS LVS100/200, SITRANS LVL100/200 offer a wide range of level detection options for liquids and solids applications.</p>
 Pressure measurement	 Temperature measurement	 Valve positioner
		
Transmitter	Transmitters and sensors	Electro-pneumatic positioner
<p>SITRANS P DSIII and SITRANS P500 transmitters are standard measuring instruments for relative, differential and absolute pressure, flow and level with highest reliability, accuracy and comprehensive diagnostic functions.</p>	<p>SITRANS TR/TH/TW transmitters for installation in field or control room. Siemens offers a wide range of temperature sensors.</p>	<p>SIPART PS2 positioner controls linear and rotary actuators. Particularly flexible stroke range, intelligent diagnostics and communication either via HART, PROFIBUS PA or Foundation Fieldbus.</p>







Weighing










Dynamic weighing & Batching Systems

			
Belt scales	Weighfeeders	Solids flowmeters	Weighing integrators
Milltronics MSI heavy-duty, high accuracy single idler belt scales are used for process and load-out control. Milltronics belt scales provide continuous in-line weighing for monitoring the flow of raw materials on conveyors.	SITRANS WW medium- to high-capacity weighfeeders reliably control and monitor feed rates and blending of raw materials.	SITRANS WF solids flowmeters are used for the material throughput measurement of free flowing bulk materials. These low- to medium-capacity flowmeters are suitable for various product sizes, densities, and flow properties.	Milltronics BW500 and BW500 / L stand alone integrators work with load cell-based belt scales. Milltronics SF500 operates with any solids flowmeter based on load cells or LVDT sensor. SIWAREX FTC is used for seamless integration into Simatic control systems.

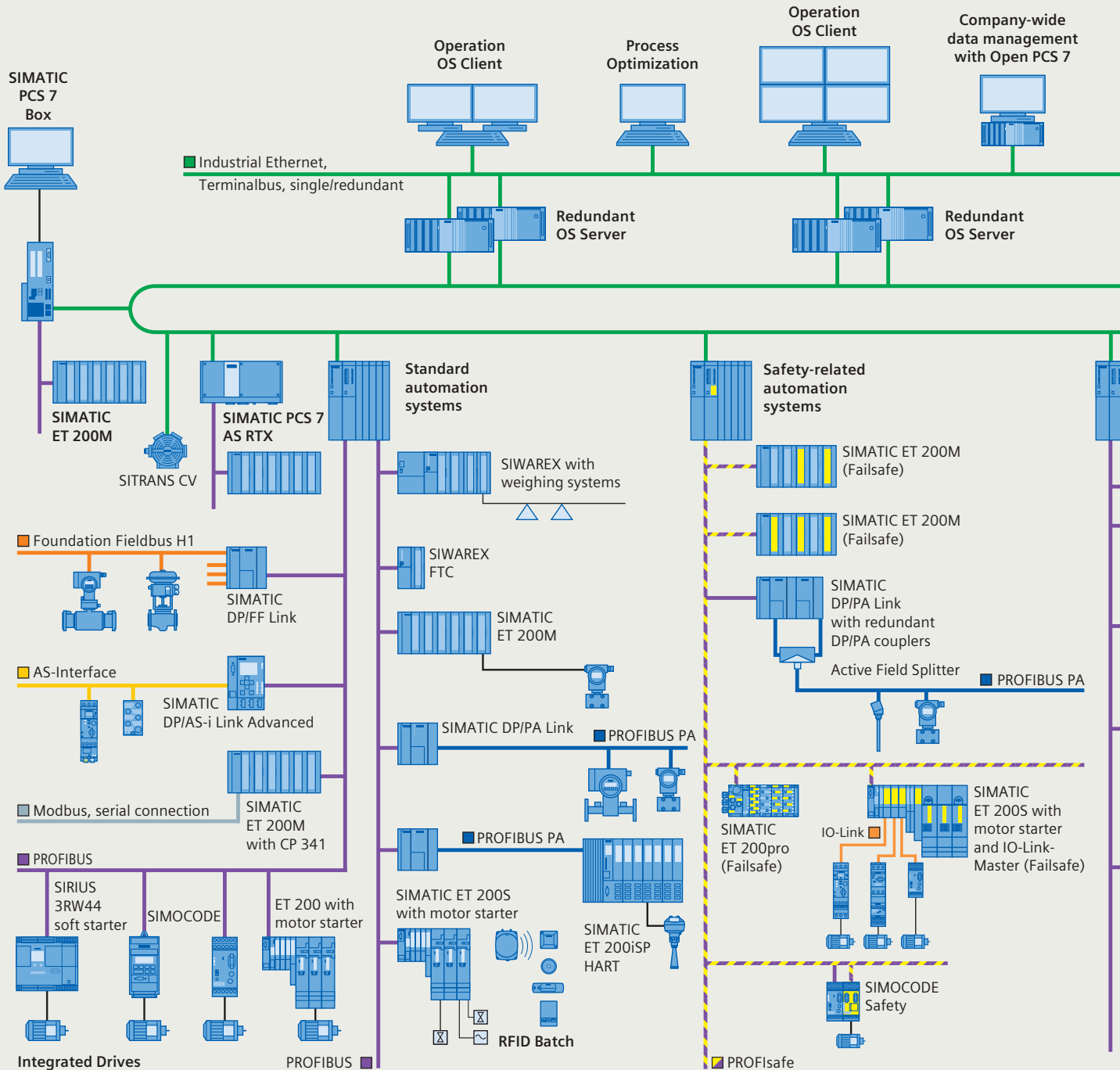
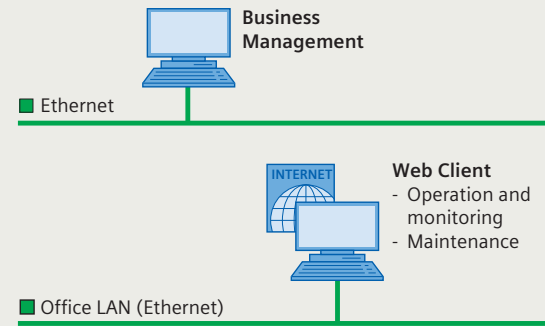


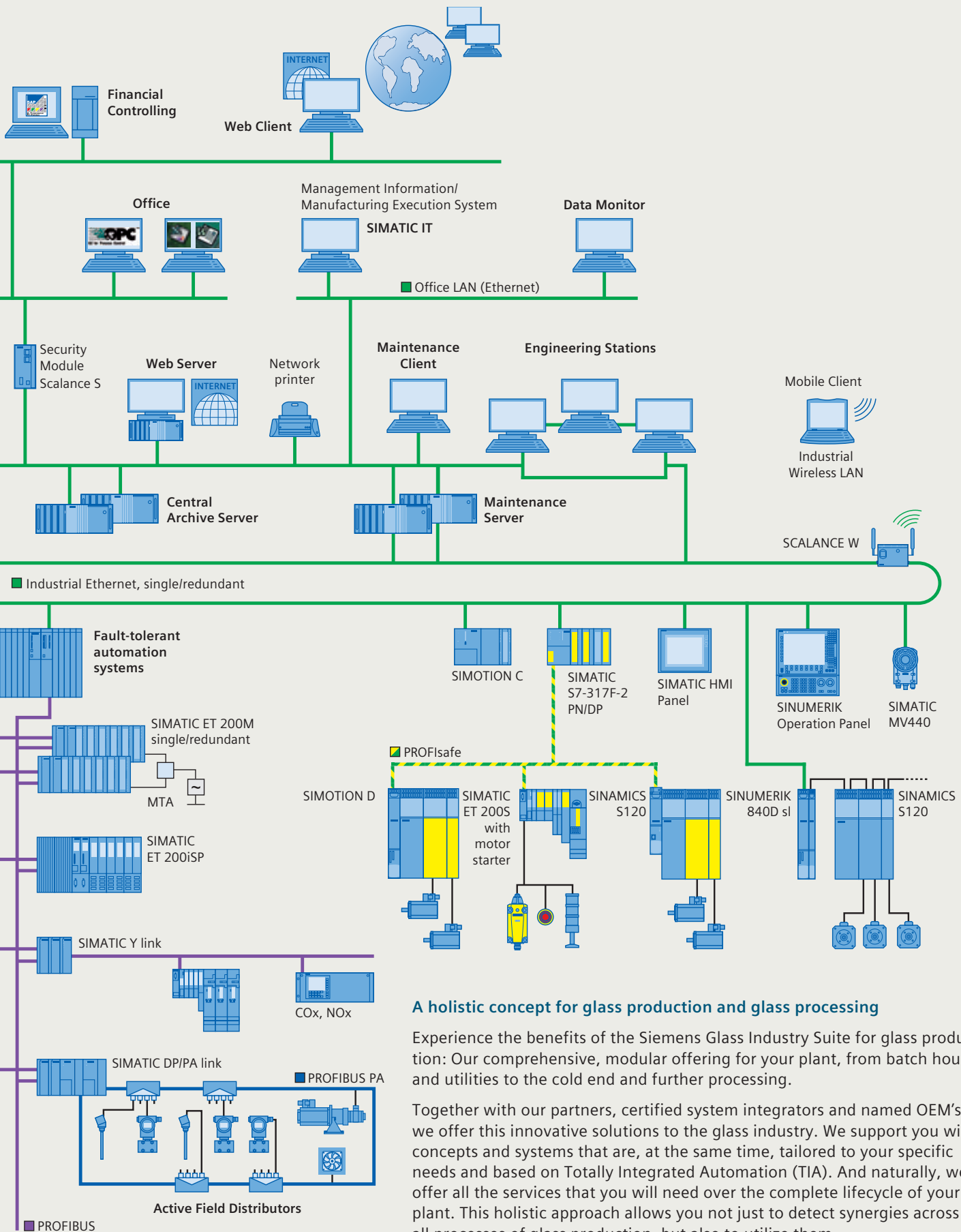
Gas analysis

			
Continuous gas analysis	Tuneable diode laser spectrometer (TDLS)	Process gas chromatography	Analytical application sets
A practical combination of the ULTRAMAT 6 and OXYMAT 6 analyzers in a single enclosure. The ULTRAMAT channel measures oxygen and 2 infrared-active components, such as CO, CO ₂ , NO, SO ₂ , and NH ₃ , as well as CH ₄ and other hydrocarbons. The OXYMAT channel measures the oxygen content of gas. Cleanable sample cells and optional corrosion resistant materials in the gas path make measurement of highly corrosive sample gases possible.	SITRANS SL and LDS6 are fast in-situ gas analyzers for process control and an innovative solution using laser absorption spectroscopy to measure gas concentrations within the main process.	The MicroSAM is a miniaturized process gas chromatograph. The design particularly enables installation close to the process. Ideal for the analysis of O ₂ , N ₂ , CO ₂ and water. SITRANS CV provides all information to the natural gas quality and its physical properties such as calorific value and density.	Set CEM (Continuous Emission Monitoring) is a standardized system that fulfills the requirements from sampling probe through the sample conditioning system to the gas analyser. It is possible to determine the concentrations of the gas components CO, CO ₂ , NO, NO _x , SO ₂ , O ₂ , HCL, HF, NH ₃ and H ₂ O.

		 Process protection	
Static weighing			
			
Load cells and weighing integrators		Motion sensors	Acoustic monitoring
<p>SIWAREX WL/R load cells cover a wide range of nominal loads from 3 kg (6.61 lb) up to 280 t (275.58 tn. L.) SIWAREX PLC-based weighing moduls provide a comprehensive range of weighing processors, for optimal integration into the SIMATIC automation system.</p>		<p>Most MFA 4p motion sensing probes as well as the Millpulse 600 can be mounted up to 100 mm (4") from the ferrous target, reducing the chance of damage to the probe and the equipment. SITRANS WM100 zero-speed alarm switch provides equipment protection.</p>	<p>Acoustic sensors detect high frequency accoustic emissions from friction or impact of dust, powders, granuals and others solids in motion. It signals flow/no flow. SITRANS CU02 is an alarm control unit for use with SITRANS AS 100 unit.</p>
 Industrial Identification		WirelessHART	 Software
			
Code reading systems		WirelessHart	SIMATIC PDM
<p>SIMATIC MV420 and SIMATIC MV440 code-reading system reliably and quickly recognize every type of 1D/2D code – on the widest variety of surfaces and even under difficult ambient conditions. These compact devices are extremely flexible and scalable.</p>		<p>Reliable RFID solutions from Siemens offer flexibility and versatility due to compact designs and remote antennas. SIMATIC RF600 is the preferred choice for extended range applications.</p>	<p>The Siemens WirelessHART product family includes battery-powered WirelessHART transmitters, WirelessHART adapters and the WirelessHART gateway.</p>
			
<p>The Process Device Manager (SIMATIC PDM) software, available as point-to-point or as an integrated part of SIMATIC S7 / PCS7, allows the user to access any instrument or field device. It permits the plant to back-up parameters as well as access programming information or diagnose potential problems from a handheld, a field PC or a workstation connected to the central control system.</p>			

Plantwide integrated solutions for glass







Totally Integrated Automation (TIA) builds the foundation for “Plant-wide automation”

Based on Totally Integrated Automation, Siemens implements solutions that are perfectly tailored to your special requirements in the Glass Industry and which are characterized by their excellent integration. In this way, TIA makes an essential contribution to the optimization of your production processes.

“With the approach of plant-wide automation, Siemens is providing optimal support to us as glass plant operators. For the first time, the wishes of an operator for standardization and simple integration were taken into account and made a reality. The central engineering and standardized reporting support efficient operation – we can now tell at a glance how much energy and raw materials we are using where in the plant. This data also provides us with important information about the state of the plant in critical areas of our glass production such as in the melting furnace. In this way, repairs and maintenance can be adapted to the actual requirements.”

Wolfgang Rübiger, CTO of f | glass GmbH

“How would we as specialists for batch houses benefit from this approach?” Reports Dr. Holger Zippe, CEO of ZIPPE Industrieanlagen GmbH.

“In the months that followed, we studied the concept intensively. Today we know that this approach provides real support to us in the acquisition of orders – because ultimately our plants are sought after due to the added value they provide to the operator.”

Find out more about plant-wide automation:

[siemens.com/glass-solar-industry](https://www.siemens.com/glass-solar-industry)

Service and support

Siemens offers field-proven concepts for process instrumentation and analytics from a single source, providing you with development continuity and a high level of security.



Our services range from consulting and engineering, connection to the control system and comprehensive after-sales service:

- System and schedule planning
- Complete design planning and engineering of the field devices
- Consultation on the selection of process instruments and analytics
- System documentation
- Installation, testing and commissioning
- Comprehensive after-sales service

Service around the world

Plants must function reliably around the clock. Efficient and effective process instrumentation and analytics are an indispensable prerequisite to this end. You also need to be certain of fast and competent service from your supplier. Siemens is a global company that reacts locally. Whether you require consulting, quick delivery or installation of new devices, the Siemens network of specialists is available to you around the world, whatever your location.

Service around the clock

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