# Extracting Value

Process Instrumentation and Analytics for the Mining, Aggregates and Cement Industries

primary INDUSTRIES

SIEMENS

# Contents



# Your challenge is our passion



**Market forces, energy prices, environmental concerns, competitive pressure. The global mining, aggregates and cement industries face a host of challenges. Market forces are changing the competitive landscape. Environmental concerns are increasing regulatory vigilance. Energy prices are intensifying the pressure on the cost base and reinforcing the momentum toward alternative fuels.**

Companies that rise to the top under pressure have the controls to monitor risk, maximise efficiency and deliver the forward view to plan effectively. As a trusted automation supplier to the primary industries, Siemens provides comprehensive, field-proven solutions to the unique challenges faced by our customers, regardless of their size. With the right solutions in place, companies can turn pressure to their advantage.

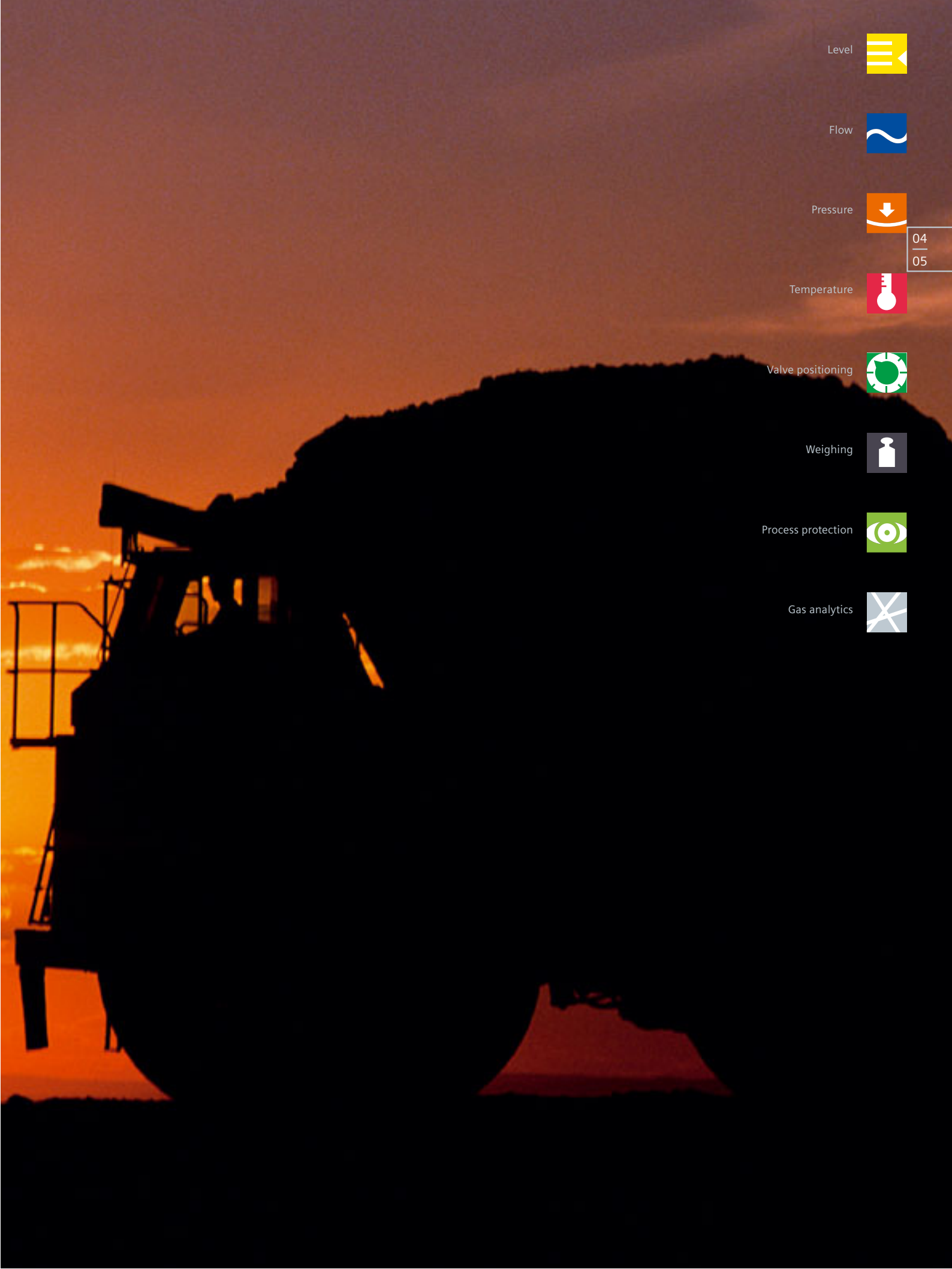
Getting control and measurement right at the heart of extractive or processing operations is key to unlocking value, leveraging competitive advantage, boosting profitability and maintaining reliability. Whether it is having appropriate technology in place to streamline processes, improve quality or reduce downtime, we have the industry process and application knowledge to keep customers on the success curve.

# Maximize your potential

- Reduced operating costs
- Improved quality
- Ease of maintenance
- Increasing efficiency
- With you every step of the way

Siemens can supply and support customer needs in the mineral, aggregates and cement industries – from power generation and distribution, through to plant automation, low voltage switchgear, drives and building technologies. Whether an individual device or complete solution, with Totally Integrated Automation (TIA) Siemens reduces the number of interfaces in the process. Siemens is the only supplier able to provide a complete set of products, systems and solutions, designed to work seamlessly together – increasing transparency and availability of the process and helping customers to concentrate on their daily business. Our acquisition of Milltronics and Danfoss Flow enables us to offer an even more specialised and comprehensive product range.

Reliable products are however, only one part of the solution. People who understand your industry needs and are able to configure solutions to match your operating conditions are equally important. Many of applications are easily retro-fitted, avoiding the need for wider equipment upgrade and specialist training. But, where specialist training or change is needed, we have the insight into your industries to deliver the people as well as the technology side of your requirements.


Level
Flow
Pressure
Temperature
Valve positioning
Weighing
Process protection
Gas analytics

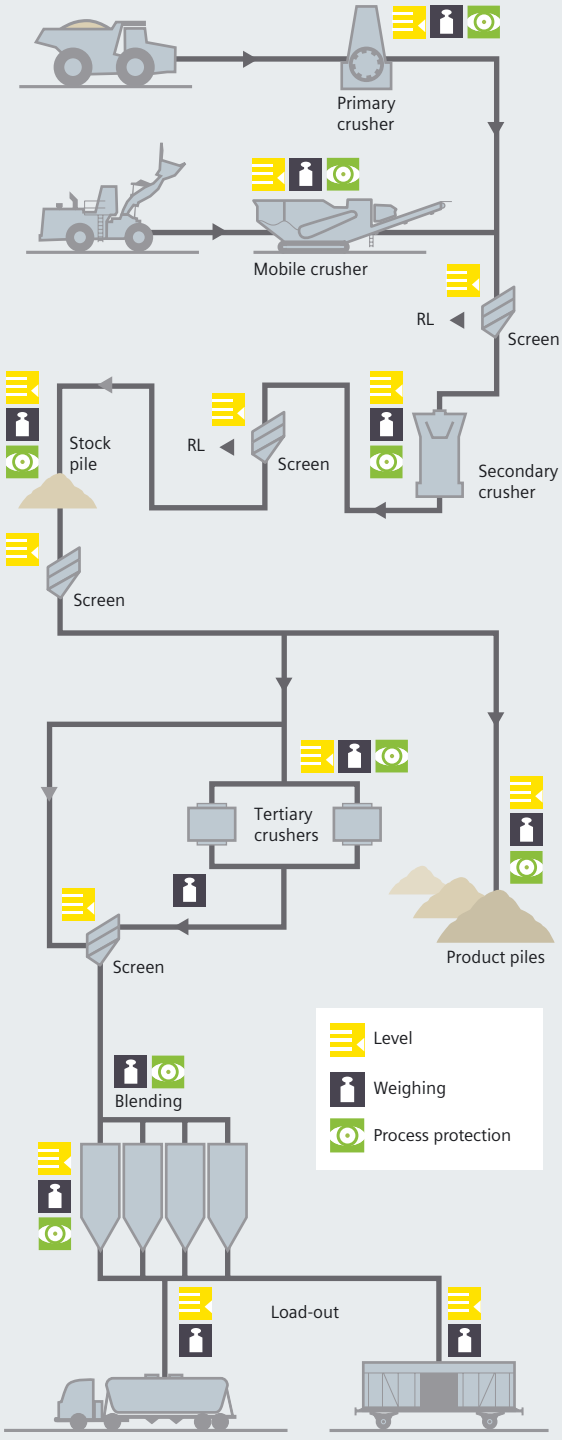
# Aggregates and cement process

**Measurement technology overview**

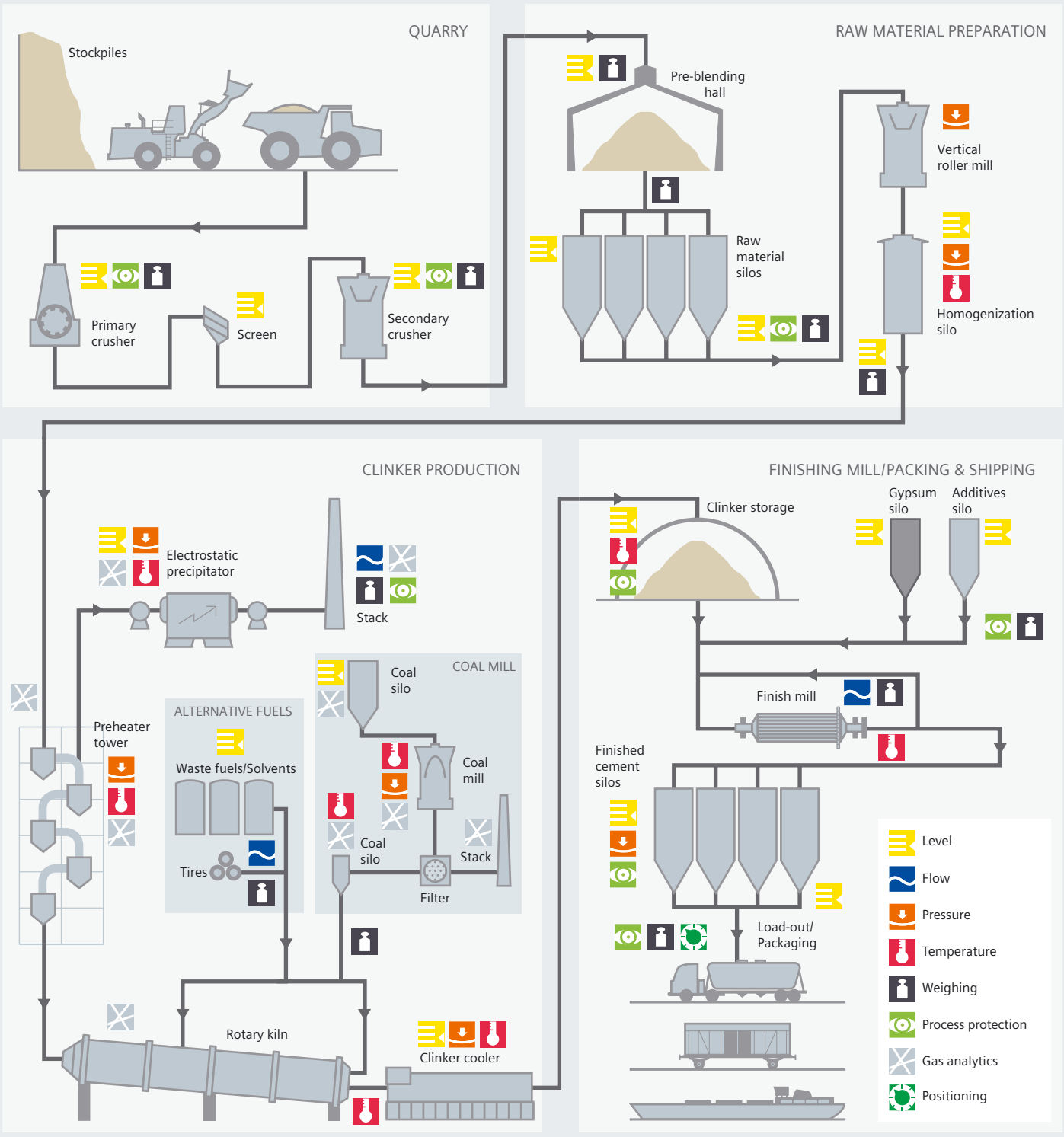
**Fluctuating demand, intense global competition, rising energy costs. These terms may seem more relevant to an annual report presentation but they also go to the heart of the cement and aggregates process chain. Efficiencies and good performance all along the chain can make the difference when it comes to your annual and half year results.**

From the quarry to the kiln, from the cooler to load-out, precise monitoring of production rates, accurate dosing and pinpoint measurement are all vital for maximum productivity. Ensuring effective measurement and control is in place at each stage of the production process increases availability, reduces waste, saves time and increases output.

## Aggregates process



# Cement process



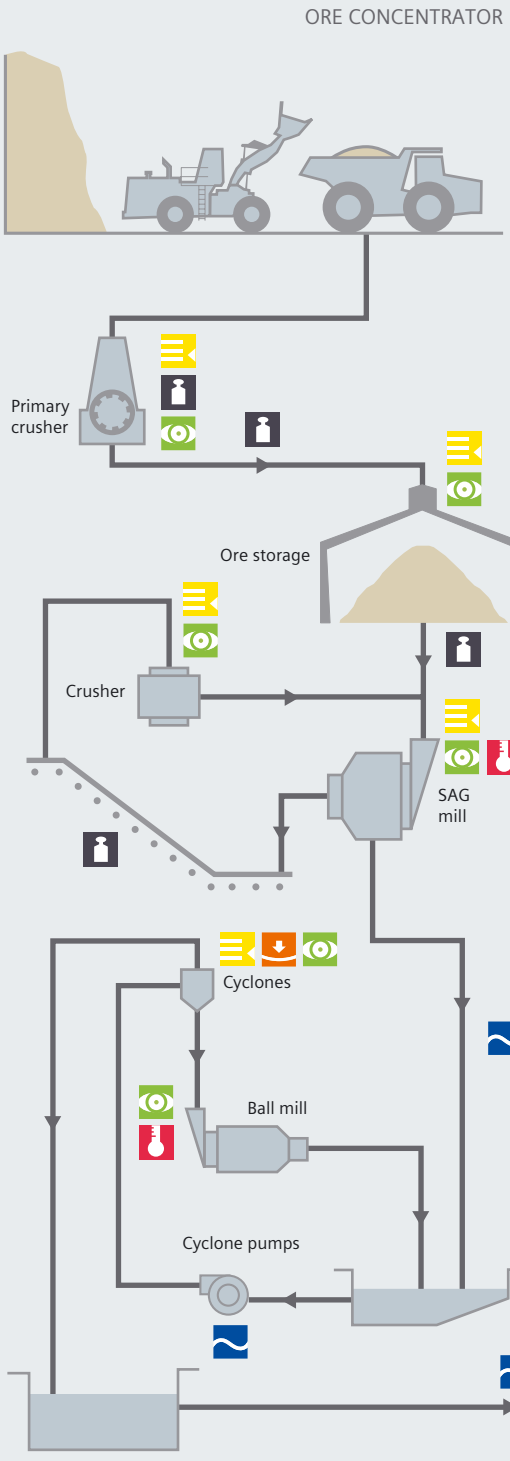
# Mining process

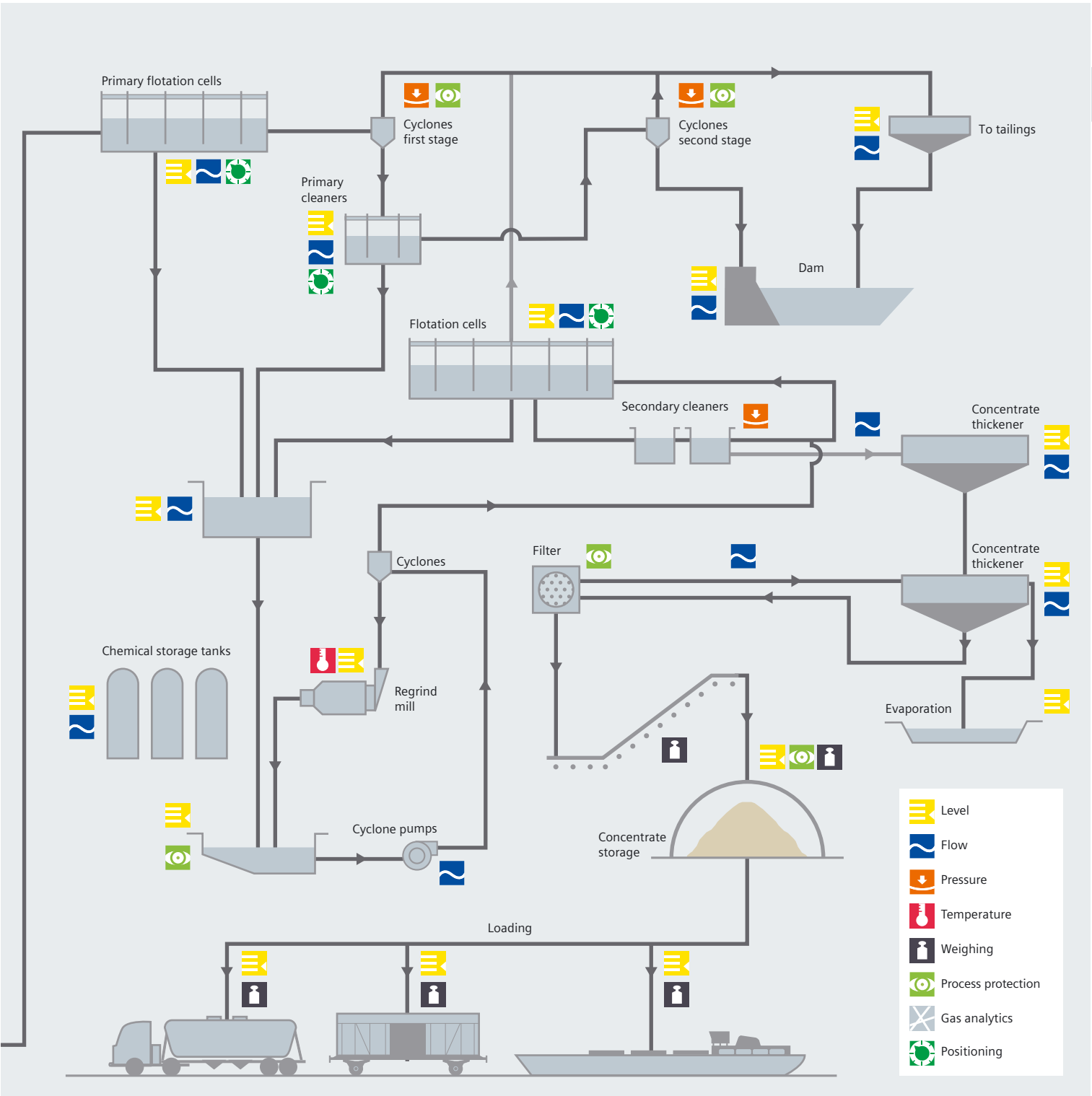
**Measurement technology overview**

**Rising commodity prices, increased demand for precious metals, scarcity of resources, new mineral reserves, stringent regulations. The pressures on the mining industry are many and sometimes contradictory. In a complex global environment, mining operations require clarity, precision and automation as prerequisites for competitiveness.**

With end-users requiring ever more rigid specifications and global demand increasing, the need for on-spec products and heightened productivity is greater than ever. From accurate control of chemical dosage to integrated control of widely dispersed operations on a remote site, the right process controls are essential for increasing yield rates and enabling mining companies to stay ahead of the global competition.

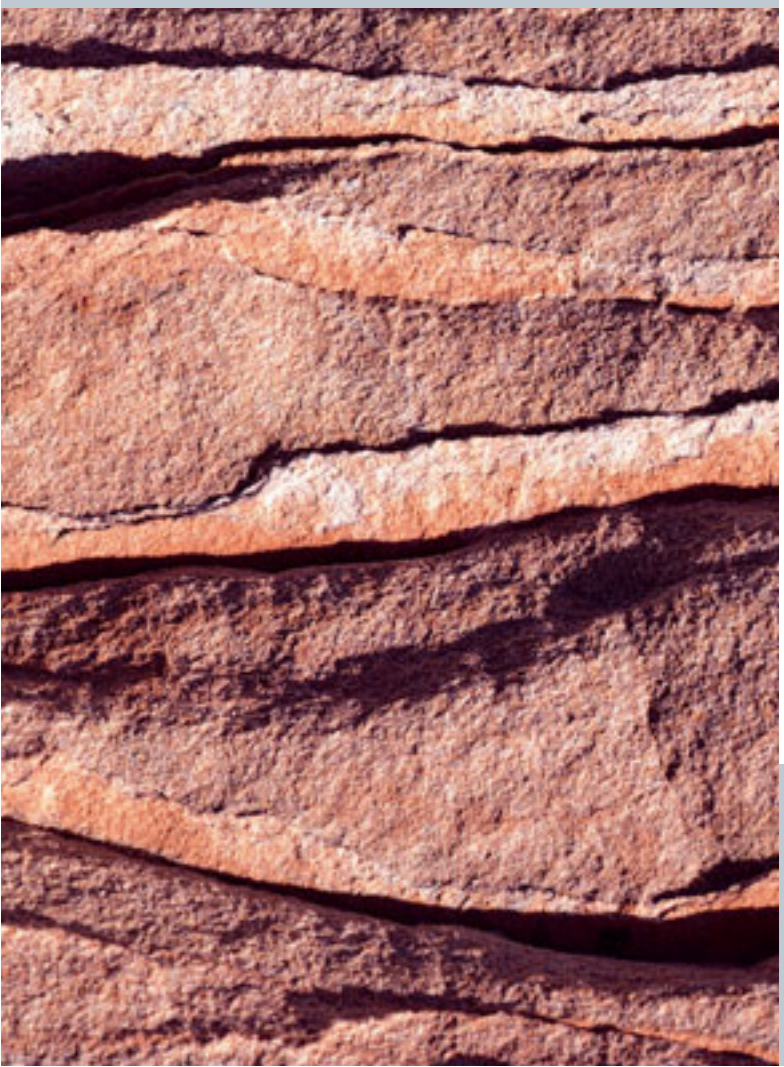
## Mining process




Primary flotation cells
Cyclones first stage
Cyclones second stage
To tailings
Primary cleaners
Dam
Flotation cells
Secondary cleaners
Concentrate thickener
Cyclones
Filter
Concentrate thickener
Chemical storage tanks
Regrind mill
Evaporation
Cyclone pumps
Concentrate storage
Loading
Level
Flow
Pressure
Temperature
Weighing
Process protection
Gas analytics
Positioning

# Level applications

**Intense heat, vibration, dust, unstable or difficult materials. All pose challenges for level measurement in the mineral processing industry. Precise and accurate measurement is vital for efficiency and continuity of operations.**



### Bitumen level monitoring

Asphalt production requires continuous monitoring of the quantity of bitumen on site. Too high a level can mean costly rejection of deliveries. Too low a level can endanger production schedules. The thick viscous nature of bitumen and delivery temperatures close to 200 °C make traditional contact technologies unreliable because of high adhesion build-up.

**SITRANS LR 200 non-contacting microwave level measurement device**

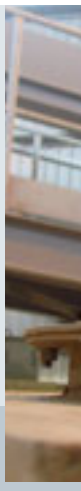
- A cost effective solution using either a horn antenna for large openings or a PTFE rod antenna for openings as small as 50 mm (2")
- Low frequency microwave transmitter offering high immunity to build-up, condensation, vapour and steam
- Sonic Intelligence and Auto False-Echo Suppression as standard, giving superior performance in process vessels
- 2-wire, loop-powered device cutting down on installation costs and a PROFIBUS PA option available for bus-enabled sites

### Optimal crusher control

The depth of material in cone crushers is critical for plant efficiency. Any variation outside of tight boundaries directly affects material size and product quality. With end-customers demanding ever increasing product consistency, tight and accurate depth measurement is vital. Limited volumetric capacity combined with high material flow rates mean levels can vary extremely quickly inside the crusher bowl. Instrumentation has to cope with high levels of noise, vibration and dense airborne dust.

**MultiRanger and XPS transducer combination**

- A reliable continuous level device using ultrasonic technology
- A separated transceiver/transducer overcomes extreme vibration
- The high frequency, non-contacting ultrasonic transducer is free of additional electronics and fully potted to provide long-term reliability
- Sonic Intelligence and Auto False-Echo Suppression are standard, allowing for superior performance in harsh conditions



## Waste fuel logistics

Liquid waste fuels, such as solvents, used oils and combustible liquids, pose both a hazard and an opportunity. Spillage or combustion can be highly damaging. On the other hand, these substances also provide a resource as an inexpensive alternative to traditional fossil fuels. Accurate level measurement not only ensures safer handling of waste fuels, but also improves inventory management through better forecasting of fuel migration demands. On-site storage can be more optimally utilised and companies can take advantage of more flexible delivery patterns.

### SITRANS LR 200

- Uses a non-contacting microwave so that measurement reliability is not distorted by build-up or vapours emissions
- Built-in Sonic Intelligence prevents interference from the agitators and vessel obstructions commonly found in waste fuel tanks
- Design resistance to a broad range of chemicals and applications allows for instrument standardisation, providing companies with cost and training benefits
- 2- wire, loop-powered device scales back installation costs and a PROFIBUS PA option available for bus enabled sites

## Clinker cooler bed depth

After clinker exits the kiln, clinker cooler systems force air through the clinker to reduce temperatures from 1200 °C and above to around 200 °C so that it can be handled and stored using conventional equipment and silos. The bed depth needs to be measured as soon as the clinker is stable on the cooler but temperatures can still register in excess of 1200 °C posing difficulties for traditional measurement devices. Often the cooler is under the burner hall with floor depths of just one meter making large diameter entries uneconomical.

### SITRANS LR 400

- A 24 GHz high power continuous microwave transmitter enables measurement through the dust and vapours found in the enclosed cooler space
- An exceptionally narrow beam angle enables use in access diameters as small as 150 mm
- The standard device is able to operate at very high temperatures, reducing or eliminating the need for ancillary cooling
- PROFIBUS PA option enabled for bus-enabled sites

## Hot clinker storage level

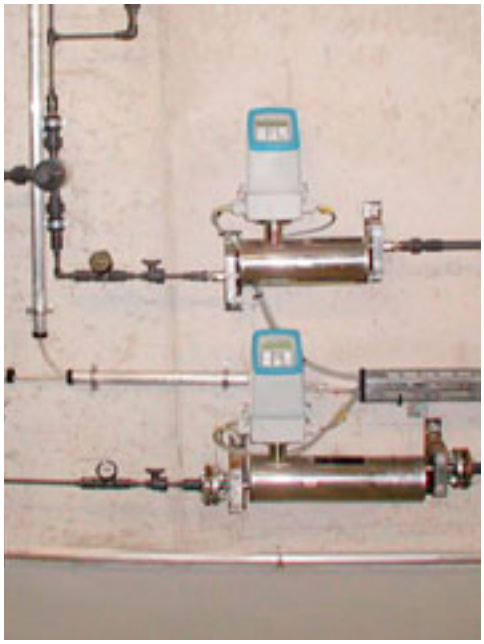
Once transferred from the cooler to storage silos, residual heat in the clinker combined with very high dust levels, continues to pose problems for traditional measurement devices. The use of continuous non-contact microwave technology, capable of operating in conditions in combination with a contacting level switch, offers a reliable and accurate solution.

### SITRANS LR 400 and CLS 300

- Both devices are capable of operating in temperatures in excess of 200 °C, safeguarding instrument life expectancy, with high temperature options also available
- Non-contact microwave technology with hi-hi alarm contacting technology back-up for ultimate security
- Predictive maintenance functions on both devices ensure that maintenance demands are kept to a minimum

# Flow applications

Many minerals, aggregates and cement processes rely on the maintenance or adjustment of flow both to deliver optimal product quality and ensure continuity of production. The variable density and changing characteristics of slurry and other materials mean that instrumentation must be robust as well as accurate.



**Additive dosage flow**

The quality of the final product relies on accurate dosing of chemical additives. At the end of the cement production process, for example, clinker is ground together with additives such as gypsum, slag and lime to form finished cement. Grinding mill additives improve the mill operation by increasing the efficiency of the grinding process and reducing energy consumption. Accurate dosage of the grinding additive can only be obtained if flow rates are in direct ratio to raw material flow.

**SITRANS F C coriolis mass flow meter**

- Offers high accuracy over a range of flow rates
- Multiparameter measurement enables simultaneous monitoring of density leading to higher dosage quality
- Coriolis measuring principle enables measurement of non-conducting media
- Advanced communications allow access to the multiple measuring parameters being measured

**Slurry volumetric flow measurement**

Flow measurement is critical for many minerals, aggregates and cement processes. But in some situations, for example mining, ore slurries containing up to 85 % solids are not unusual. Solids, metal particles and other hard objects render traditional flow meters unstable and inaccurate. Using pulsed AC technology, Siemens overcomes these challenges, and delivers a flow meter with a signal twice as strong as conventional AC flow meters.

**SITRANS FM TRANSMAG 2**

- Operators benefit from reliable readings, even during process upset conditions, enabling continuous control of the process
- All SITRANS FM TRANSMAG 2 use the SmartPLUG technology. Specific sensor calibration data is stored directly in the meter body not in the electronics
- A secondary automatic compensation coil prevents the effect of magnetic fluctuations arising from the measured medium

# Pressure, temperature and positioning

**Many arduous processes require accurate temperature measurement or the monitoring of pressure. Having the right controls in place enables companies to achieve minimal maintenance, near-zero downtime and enhanced finished product quality.**

**Process temperature monitoring**

Fluctuations in temperature provide an early indication of variation in process conditions. It is vital that temperature movements are monitored continuously, not just to maintain product quality but also to avoid damage to production equipment. The smooth running of operations is safeguarded by measuring temperature in the process at points such as the preheater tower, the kiln, the clinker cooler, the coal mill, electrostaic precipitator and clinker silo.

**Siemens offers a range of temperature transmitters, suited for use in a number of process environments:**

- Remote mounting capability allows isolation from high temperatures and vibration sources
- Local display and local programming
- Advanced communications and predictive maintenance functions enable optimisation of maintenance cycles

**Accurate process response**

Hydroclassification of pure silica sand is critical for a variety of high-grade industrial operations such as float glass, fused silica and quartz crystal lenses. Hydroclassifiers use water pumped at a fixed rate from the bottom while sand is added from the top. The upward water flow causes the lighter sand to pass out at the top while heavier sand sinks to the bottom to be removed by a valve for subsequent drying and transport. The valves on the water input and the classifier outlet must be able to respond to small process and pressure changes respectively.

**SIPART PS2 valve positioner**

- Suitable for both inlet and outlet valve positioning tasks, offering a range of advantages when used to control the hydroclassifier
- Compatible with both rotary and linear actuators, enabling standardisation on one device, saving costs relating to training and spare parts
- Advanced diagnostics including predictive maintenance allow operators to plan maintenance in advance of failure
- Local or remote set-up possible on every unit
- Robust design for the primary industries

**Intelligent cleaning cycles**

Exhaust air filtration systems depend on regular cleaning of filters and equipment. Most dust collectors clean or backwash the filters at pre-determined times irrespective of whether the filters need cleaning. As well as wasting plant air and increasing energy costs, the increased strain on the filter reduces its life. Indeed, a certain amount of caking can increase filter effectiveness by trapping the finer particles passing through.

**SITRANS P pressure transmitter**

- Provides data for an intelligent cleaning cycle by measuring the pressure differential between the clean and dirty side of the bag filter, enabling cleaning to be based upon actual requirements
- 100 to 1 turndown allows standardisation with one pressure sensor suitable for a variety of applications
- Local display and programming capabilities
- Predictive maintenance functions enable maintenance prior to device failure

# Weighing and process protection

**From immediate early warning alerts from remote locations to 'right first time' load-out, weighing and process protection has a vital role to play in mineral, aggregate and cement operations.**

### Motion detection

Bucket elevators and other feed conveyors lie at the heart of many operations and it is important that events such as conveyor slow-down, stoppage, bucket loss or chain breakdown are immediately communicated to the control room. Motion sensing probes enable faults to be detected in their infancy, minimising downtime and enabling rapid control and rectification of faults.

**Siemens range of motion sensing probes**

- Designed specifically for the primary industries
- 100 mm sensing range allows detection on machinery with poor tolerances such as bucket elevators
- The sensor is capable of penetrating stainless steel and detecting the ferrous target behind
- Detection of conveyor slowdown, a common indicator that the mechanical elevator is overloaded


**Accurate loading**

Significant time and cost savings are obtained through accurate load-out. Overloading leads to the time-consuming unloading of excess material and increased waste levels. Underloading leads to unnecessary time spent re-loading vehicles. An accurate weighing system at the loading point ensures vehicles are loaded correctly at the first pass. Final loading weights are then simply verified at the approved weighbridge.

**Siemens range of single and multi-idler weighing systems**

- Suitable for retrofit to existing conveyor systems offering accuracy of up to 0.25 %
- Multifunctional electronics capable of performing batch, ratio and PID control functions
- Dual load cell primary element ensuring accurate measurement
- Advanced communications options available

**A single weighing interface**

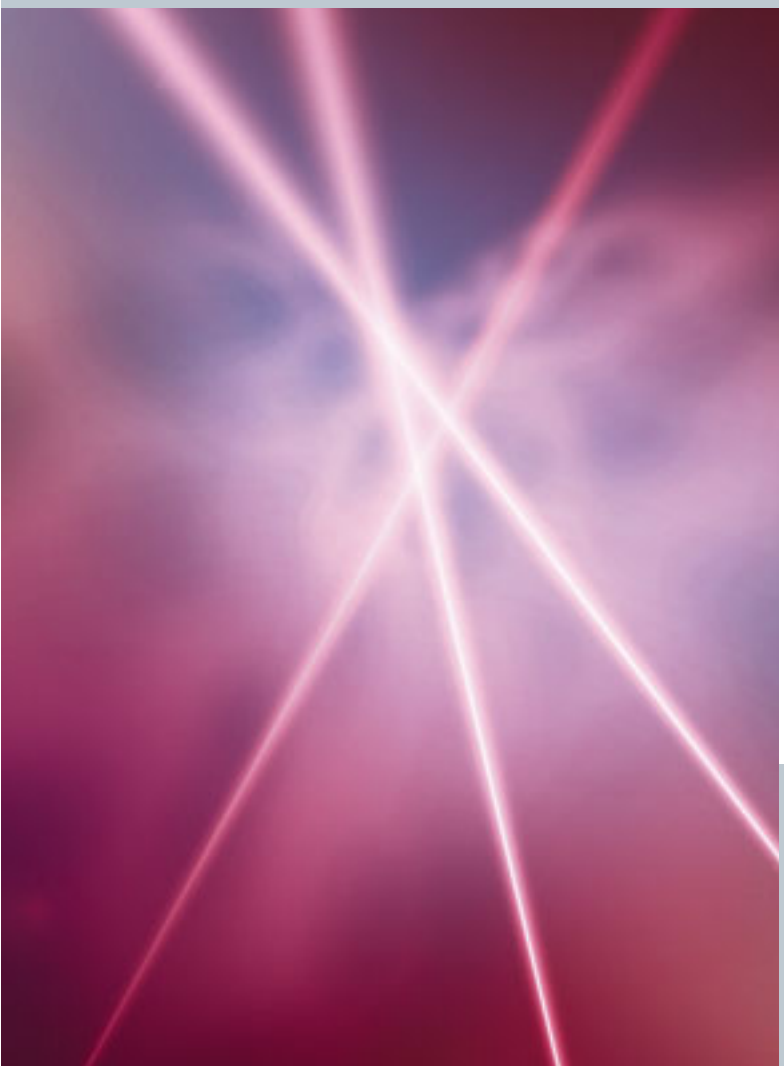
For plants operating SIMATIC PCS systems such as the SIMATIC S7 range, SIWAREX offers an alternative to vendor-specific weighing integrators. The SIWAREX FTC is inserted into an existing SIMATIC S7 configuration, either directly onto a SIMATIC S7-300 or via an ET-200 remote I/O unit in a distributed system. The FTC can integrate with any weighing system, regardless of manufacturer, thus offering a single uniform weighing interface in a familiar format for SIMATIC S7 users, negating the need for specialist training and support.

**SIWAREX range**

- Offers a complete solution for all weighing requirements across the plant with modules suitable for static and loss-in-weight measurement tasks
- Easy integration into existing SIMATIC-based control systems
- Can be supplied as a complete weighing system with the inclusion of the primary weighing element

# Gas analytics

**Gas analytics is central to a wide range of process control issues, and environmental, health and safety concerns. The advent of emissions trading schemes and tighter regulatory standards has added to the importance of accurate gas analysis.**

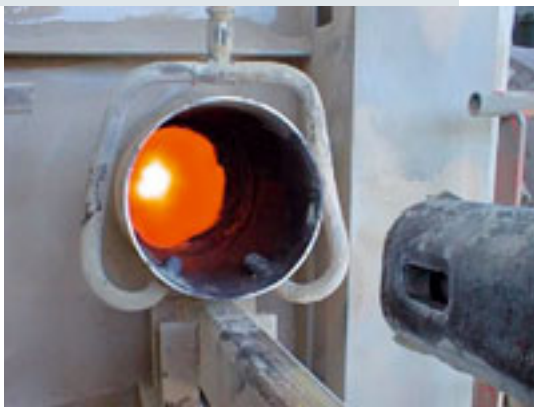


**Continuous kiln gas analysis**

Continuous analysis of oxygen, carbon monoxide and nitrogen oxide is essential for the accurate management of clinker quality, fuel usage and emissions. However, temperatures of up to 1400 °C combined with high dust, alkali and sulphate content limit the effectiveness of conventional gas analysis equipment. The FLK probe allows extraction of gas directly from the intake area of the rotary kiln. The sample gas is extracted by the probe, conditioned, and applied to the gas analysers at around 200 °C.

**FLK probe**

- Extractive measurement at cement kiln inlet enables an accurate picture of kiln gas composition, and a continuous in situ analysis of gases allows detailed assessment of burner control, fuel requirements and product quality
- Stable kiln control safeguards product quality and prevents the emission of toxic materials into the environment
- The synthetic liquid coolant used by the FLK probe allows the sample gas to remain above its acid dew point, avoiding the need for further treatment
- A stable oval probe design coupled with an emergency retraction mechanism ensures reliable long-term operation
- High quality synthetic liquid coolant and a pressurised air purging system means the FLK probe offers extended maintenance cycles and excellent reliability



## Coal silo monitoring solution

A major explosion risk within cement plants arises from the threat of a self-ignition of coal stored within a coal silo. Self-ignition is difficult to predict, as it depends on a number of factors such as coal type and quality, pressure and temperature. An increase in CO levels is an important indicator. Once permitted thresholds are exceeded, inert gas needs to be pumped into the coal silo immediately to control the threat. Traditional gas analysers suffer from slow reaction times and only take samples from one part of the silo. Operators have no choice but to set low thresholds to allow a reaction time buffer but then suffer the problem of disruptive false alarms.

### LDS 6 laser spectrometer coupled with SITRANS LR 400 FMCW radar level monitor

- A complete coal silo monitoring solution offering high speed, in-situ monitoring of gas composition across the whole diameter of the coal silo and accurate level measurement
- 1 second response times mean that inertisation thresholds can be increased, reducing inert gas consumption, reducing false alarms and cutting process downtime
- Easy installation requiring no calibration on site and very low maintenance demands
- No on-site recalibration necessary
- The sensors are intrinsically safe and suitable for all Ex applications

## Emissions monitoring

Monitoring exhaust gases leaving the stack is necessary for both process optimisation and regulatory compliance reasons. The range of local, national and international compliance requirements means that, where secondary fuels are used, companies have to be able to monitor a wide range of gases, such as CO, NO, $SO_2$, $O_2$ and dust as well as HCl, HF, Hg and THC.

### ULTRAMAT 23 continuous gas analyser

- A cost effective method of monitoring CO, NO, $SO_2$ plus $O_2$ with just one analyser
- Extractive measurement principles to suit application needs
- Autocal with ambient air
- Siemens analytics devices can be seamlessly integrated into automation systems and have communications on board

### Siemens also offers

- Scalable solutions from a single analyser to complete shelters
- A comprehensive analysis package enabling compliance with waste incineration legislation

# Our process instrumentation and analytics product range

**Siemens offers the most comprehensive product range for the primary industries and has a solution for even the most difficult measurement tasks.**

## Level measurement devices

**SITRANS LR 200 – 2-wire radar level measurement**
Ideal for the measurement of liquid slurries in bulk storage and process vessels and for monitoring fuel levels or waste solvents. Performs well in high temperatures.

**SITRANS LR 400 – high performance long range FMCW radar level measurement**
Used successfully in thousands of applications, developed for more difficult solids and liquid level measurement situations, such as in high dust levels or with low dielectric liquids. Ideal for use on cement powder, clinker, coal and gypsum.

**SITRANS LU – ultrasonic level monitoring**
A cost-effective level monitoring system with a range of models offering up to 10 ultrasonic measuring points. Coupled with appropriate Echomax transducers, SITRANS LU is perfect for covering multiple bins or silos up to 60 m (200 ft) with one device.

**SITRANS Probe LU – 2-wire loop powered compact ultrasonic level transmitter**
For non-contact level/volume monitoring of liquids. Excellent for use on flotation cells and other basic level measurement applications.

**POINTEK CLS inverse frequency shift capacitance level switches**
For detecting interfaces, solids, liquids, slurries and viscous materials in the demanding conditions of low/high pressure, high temperatures and corrosive and abrasive materials. Ideal for applications where accurate and reliable switching is required.

**SITRANS LPS 200 paddle switches/LVS 200 vibrating fork switches**
These high performance level switches have a very rugged design and are suitable for the most demanding level detection applications in the primary industries. Sensitivity adjustments allow for the compensation of build-up, and a wide range of extensions are also available.

## Flow measurement devices

**SITRANS FM TRANSMAG 2 with FM911/E sensor: magnetic-inductive flow meter**
Thanks to its pulsed alternating field system, this device is capable of measuring where conventional DC field technology is not. The stronger magnetic field delivers greater reliability and precision, which is perfect for measuring heavy mining slurries. Coupled with our patented Novolak liner, the TRANSMAG 2 can even handle the most abrasive of media.

**SITRANS F C coriolis mass flow meter**
A complete range of highly accurate, coriolis mass flow meters, providing precise data about fluids or gas passing through a pipe-ideal for dosing and blending applications.

**SITRANS F US ultrasonic flow meter**
A range of ultrasonic flow meters ideal for a number of applications within the primary industries such as the monitoring of industrial waste water. Numerous versions are available, dependent upon the characteristics of the media being measured. SITRANS F US SONOKIT enables ultrasonic flow technology to be retrofitted to existing pipelines.

## Weighing and solids flow measurement

**Milltronics belt scales and weigh-feeders with Milltronics BW500 integrator**
High accuracy single/dual idler belt scales and weigh-feeders. Ideal for applications such as the tracking of daily production and management of grinding mill feed rates. The Miltronics BW500 integrator offers the optimal link into the process, and provides rate, totalized weight, PID, belt loading, speed and batching.

**SIWAREX PLC-Based weighing systems**
Provide optimum integration into the automation structure of the process. Ideal for users familiar with the SIMATIC PCS 7 process control system and SIMATIC S7 automation components.

**Milltronics solids flow meters**
Accurately measure and control flow rates of product so that quality and plant efficiency are consistently maintained. A totally enclosed design eliminates product waste or contamination and reduces plant maintenance. The units are dust-tight, ensuring a healthier work environment, especially when hazardous materials are monitored.

## Pressure and temperature measurement

**SITRANS P DSIII – digital pressure transmitter**
For mounting with a remote seal on open or closed vessels to give differential or absolute pressure measurement of corrosive or non-corrosive liquids. Ideal for flotation cell applications or for use in the filter bag house.

**SITRANS T – temperature transmitters**
A range of devices enables temperature measurement in even the most rugged industrial environments. Signal conversion from resistance thermometers, resistance-type sensors, thermocouples and voltage sensors into direct current signals, ensures the isolation of electronics – avoiding possible sources of vibration.

## Valve positioning

**SIPART PS2 – electro-pneumatic valve positioner**
Offers easy integration, on-board diagnostic functions and minimum loss of process air by only using air when required. Enables operators to take cost-effective and accurate control over typical applications such as flotation cell filling.

## Process protection

**Accoustic sensors and motion sensors**
A wide range of rugged and reliable process protection devices, specifically developed for the demands of the primary industries. Siemens AS 100 acoustic sensors help operators detect blockages in pneumatic conveying systems while our motion sensor range ensures that mechanical conveying systems maintain their set speed – informing operators in case of breakdown or failure and helping to increase availability.

## Gas analytics

**LDS 6 – in situ laser spectrometer**
High performance process gas analysis with a unique design concept. Offers laser spectrometry at up to three measuring points, providing extremely high levels of accuracy and speed. The unit delivers excellent results even in high temperature and dusty environments, making the LDS 6 perfect for applications such as coal storage, ESP monitoring and $NH_3$ slip measurement.

**ULTRAMAT/OXYMAT series 6 – continuous gas analyzer**
A practical combination of the ULTRAMAT and OXYMAT 6 analyzers in a single enclosure. The ULTRAMAT channel measures CO, $CO_2$, NO, $SO_2$, $NH_3$, as well as CH4 and other hydrocarbons. The OXYMAT channel measures oxygen in gases. Cleanable sample cells and optional corrosion resistant materials in the gas path make measurement of highly corrosive sample gases possible.

**FLK Kiln inlet probe**
Provides a precise and reliant analysis of both gas and exhaust emissions from the rotary kiln, enabling efficient and safe cement production and helping to protect the environment. Thanks to its synthetic liquid coolant and pressurized air cleaning systems, the probe withstands the rigours of the cement kiln, offering low maintenance, operating costs and excellent reliability.

# Totally Integrated Automation

**Siemens has the most comprehensive product range for the primary industries on the market. Ranging from drives, motors and switchgear, the product range also includes power management systems, industrial communications networks and building management technologies.**

With **Totally Integrated Automation** (TIA), Siemens is the only supplier to offer an integrated portfolio of products, systems and solutions for the implementation of automation solutions.

TIA provides you with a seamlessly integrated solution right through the plant life cycle. Whether you are planning new plant, optimizing existing operations or modernizing old plant.

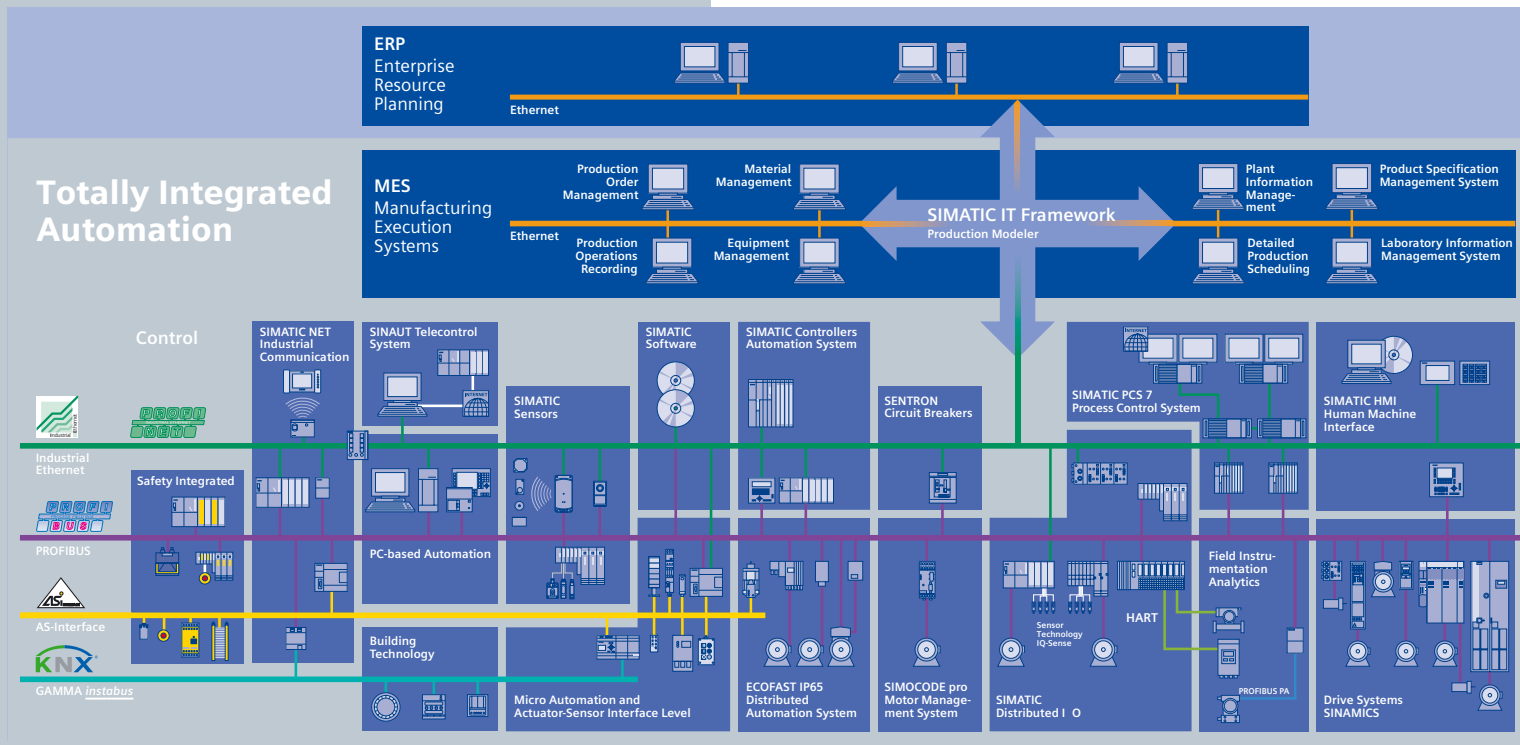
Totally Integrated Automation:
- Reduces the number of interfaces
- Ensures maximum data transparency
- Covers all levels of your operations – from the field level, through the control level up to the management level.

Combining Siemens technology and products with an impressive and unique level of integration into an automation system, TIA provides the foundation for all your planning and processes, from excavation to the final product.

**At the heart of TIA and the heart of your operations**
The SIMATIC PCS 7 process control system is based on modular SIMATIC hardware and software components. Flexible, extensible and open for future enhancements through the use of standard interfaces, it provides long-term stability and sustainability.

The openness of SIMATIC PCS 7 covers all levels and applies equally to automation systems, process I/O and field devices as to operator and engineering systems, industrial communication networks or the MES framework. Furthermore, the system offers completely integrated function blocks for motors, valves and control devices.

The CEMAT variant of SIMATIC PCS 7, developed specially for the needs of the cement industry, offers a range of advanced functions, including tools for the analysis and improvement of weak spots with the process.



# Services and support from Siemens



**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 through to connection onto the control system and comprehensive after-sales services:

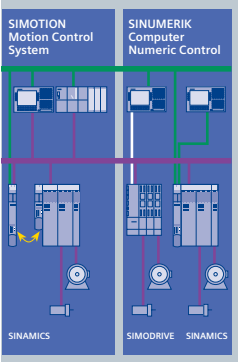
- System and schedule planning
- Complete planning and engineering of the field level
- Specialist consultation on the selection and dimensioning of process instruments and analytics
- System documentation
- Installation, testing and commissioning
- Comprehensive after-sales service

**Service around the globe**
Plant must function reliably around the clock. Efficient and effective process instrumentation and analytics are an indispensable prerequisite for this, but you also need to be certain of fast and competent service from your supplier.

Siemens is a global company that reacts locally. The Siemens network of specialists is available to you right around the world, whether you require consulting or quick delivery and installation of new devices.

**Service around the clock**
Our online support system offers rapid, comprehensive assistance regardless of time or location. From product support to service information, A&D online support is your first choice, right around the clock and 365 days a year.

**www.siemens.com/automation/service&support**



More information about process instrumentation and analytics:

**www.siemens.com/processinstrumentation**
**www.siemens.com/processanalytics**
**www.siemens.com/weighingtechnology**

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**Siemens AG**
Automation and Drives,
Division Process Instrumentation and Analytics
76187 Karlsruhe
Germany

www.siemens.com