SMC

Expertise – Passion – Automation

Expect the expected

SMC solutions for CBM in beverage and brewery industry

Mr. Gary Brown,,
Industry Manager
Brewery, Europe

Over many years, in support of the beverage and brewery industry, we have gathered sufficient expertise to understand the complex productive process and design-effective and sustainable solutions for the rising demands of this market. Nowadays, SMC is fully aware of the need to produce "sustainable beverages" in terms of machinery complexity and new technologies. As such, you can count on us to support the industry targets of "Zero Carbon" and waste water reductions with our sustainable CO2 management programme and Energy Efficiency solutions.

Sustainability and efficiency are not only about machine design, and that's why our condition-based maintenance (CBM) service and equipment can help you to obtain higher efficiency from your compressed air system, by providing greater predictability around maintenance and repair schedules. Use real-time data for machine operations to help identify any potential issues that could affect performance, including duty, speed, acceleration and the wear of pneumatic components. CBM can also help to increase plant asset utilisation and productivity, and easily identify areas for continuous improvement with root cause analysis.

With SMC's Condition-Based Maintenance approach we are able to guide your company to the next levels of corrective actions by helping to eliminate unexpected downtime and in-service failures, ensuring ongoing performance and availability.

Expect the expected

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Interactive index

Industrial maintenance

It's no secret that maintenance is the key to the prevention of problems, cost savings and improvement in productivity and that is why it has become a fundamental aspect of the everyday reality of production lines. With the solutions that SMC can provide to achieve successful maintenance actions you will find the best way to improve the efficiency and productivity of your process.

Smart Flexibility

This is the main concern of the Industry 4.0, Factory of the Future, Smart Factory or Digitalisation, you name it. It is no longer a question of mass production, but to do so in a personalised, cost-effective, fast and sustainable way.

We understand your daily needs

Our local teams of highly trained experts are on hand to help you achieve your goals

Your safety in our focus

Creating confidence with confidence. SMC is an innovative, reliable and strong partner for pneumatic and electrical automation technology. We accompany our customers throughout the entire life cycle of their plant and, for all relevant safety issues, we have competent and professional solutions at your disposal.

Energise your efficiency

In our 24/7 economy and as governments, industries and consumers battle with in the quest for ever increasing supplies of energy, SMC has always been fully committed to assisting customers in reducing their bills and, of course, in making its modest contribution to global sustainability.

Size & weight optimisation

Nowadays space and weight are at a premium. SMC is on the way to downsizing your machine components, continually re-designing our products so you can achieve more efficient, compact and light machinery.

Condition Based Maintenance

Condition-Based Maintenance is a **maintenance strategy** which, simply put, measures operational parameters in assets to determine a change in their condition, performing maintenance only when the need arises.

By using instrumentation to monitor equipment performance in **real time**, maintenance staff can identify an adverse change in one or more operational parameters and trigger corrective action to ensure ongoing performance – preventing in-service failure.

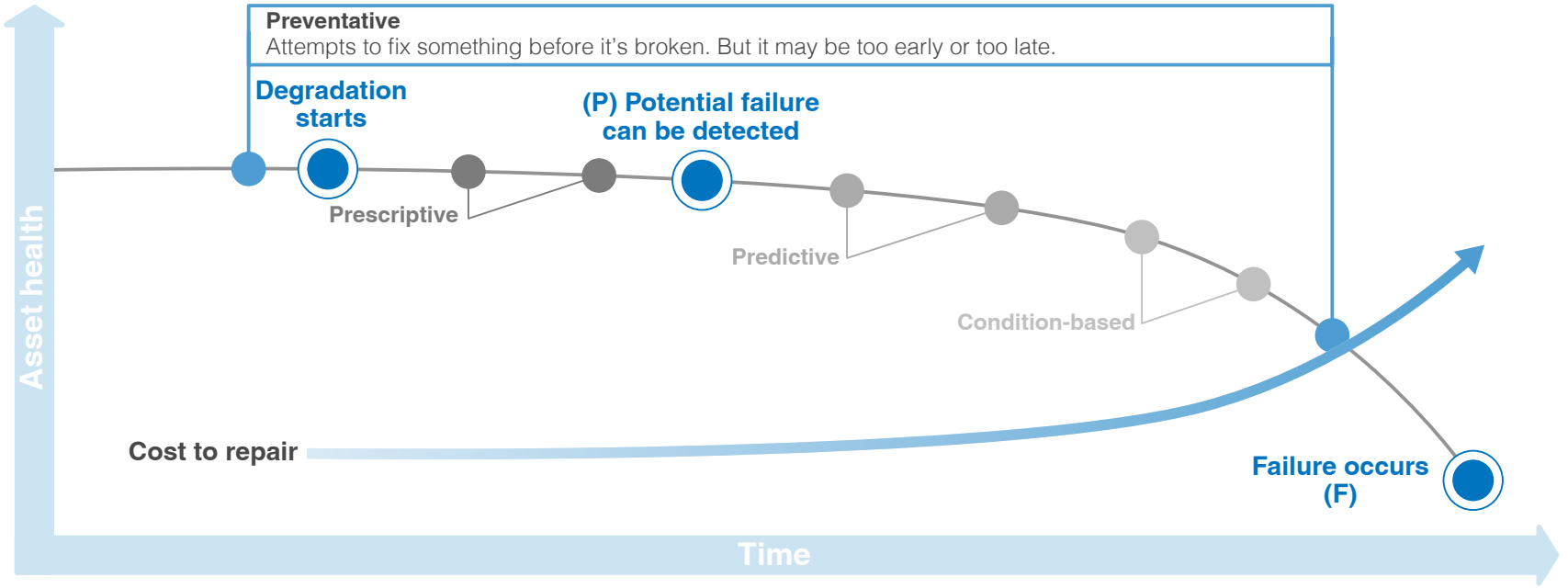
Similar to a general check-up at the doctor's to detect any underlying issues that might arise with age, or regularly servicing your car to keep it running, CBM uses various process parameters (e.g. pressure, temperature, vibration, flow, noise, visual, thickness etc.) and material samples (e.g. oil) to **monitor conditions in machines**.

Engineers can then measure equipment health, performance, reliability and integrity to understand how machines perform, as well as predicting and preventing failures before they occur.

Differences with other types of maintenance

Potential to functional failure curve

Discover more on Industrial maintenance



Preventative maintenance

Being proactive instead of reactive is the key to preventative maintenance. By controlling the different process parameters, you can observe the figures and anticipate possible problems, performing maintenance at scheduled intervals to keep equipment working, based on review and verification at a particular trigger interval, such as the product's expected service life.

Predictive maintenance

For this type of maintenance, it is fundamental to think about components that will facilitate their replacement, parametrisation and adjustment with the aim of obtaining a reliable design from origin. This helps to make the most important machine components more reliable, thereby reducing their preventive maintenance tasks.

Prescriptive maintenance

This uses sensors, data, and advanced analytics to determine the root cause of a potential failure, so that specific corrective action can be prescribed. Prescriptive maintenance takes the analysis a notch higher by not only predicting failure events, but also recommending actions to take. Potential outcomes when such recommended actions are performed are then calculated and anticipated.

Benefits of CBM

The main benefits of applying an effective condition-based maintenance programme are that repairs can be scheduled during non-peak times, machine productivity and service life are enhanced, and the repair production cost item due to downtime is eliminated.

Reduced number of unplanned failures

Improved machine safety

Improved equipment performance

Shorter MTTR

Improved equipment availability & reliability

Minimised time spent on maintenance

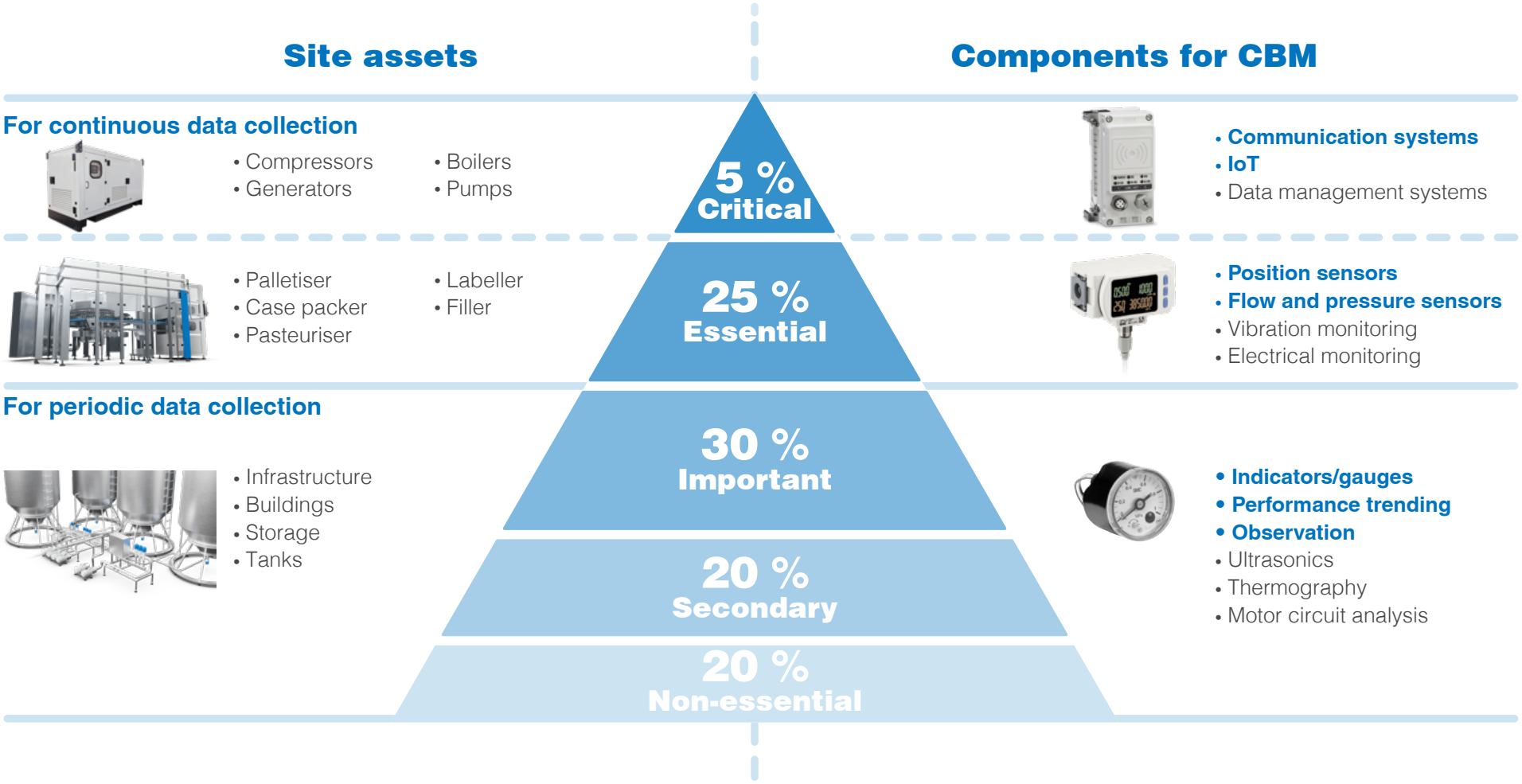
Improved energy consumption

Minimised inventory costs

Increased asset lifetime

Where to start

The key to having a cost-effective and balanced condition-based maintenance programme is to assess which machines are most valuable by performing an asset criticality audit. This addresses the impact of temporary or permanent loss that a key asset would have on your business. The characteristics that make an asset valuable aren't always obvious. It's important to rank assets based on the significance a failed asset has on your business.



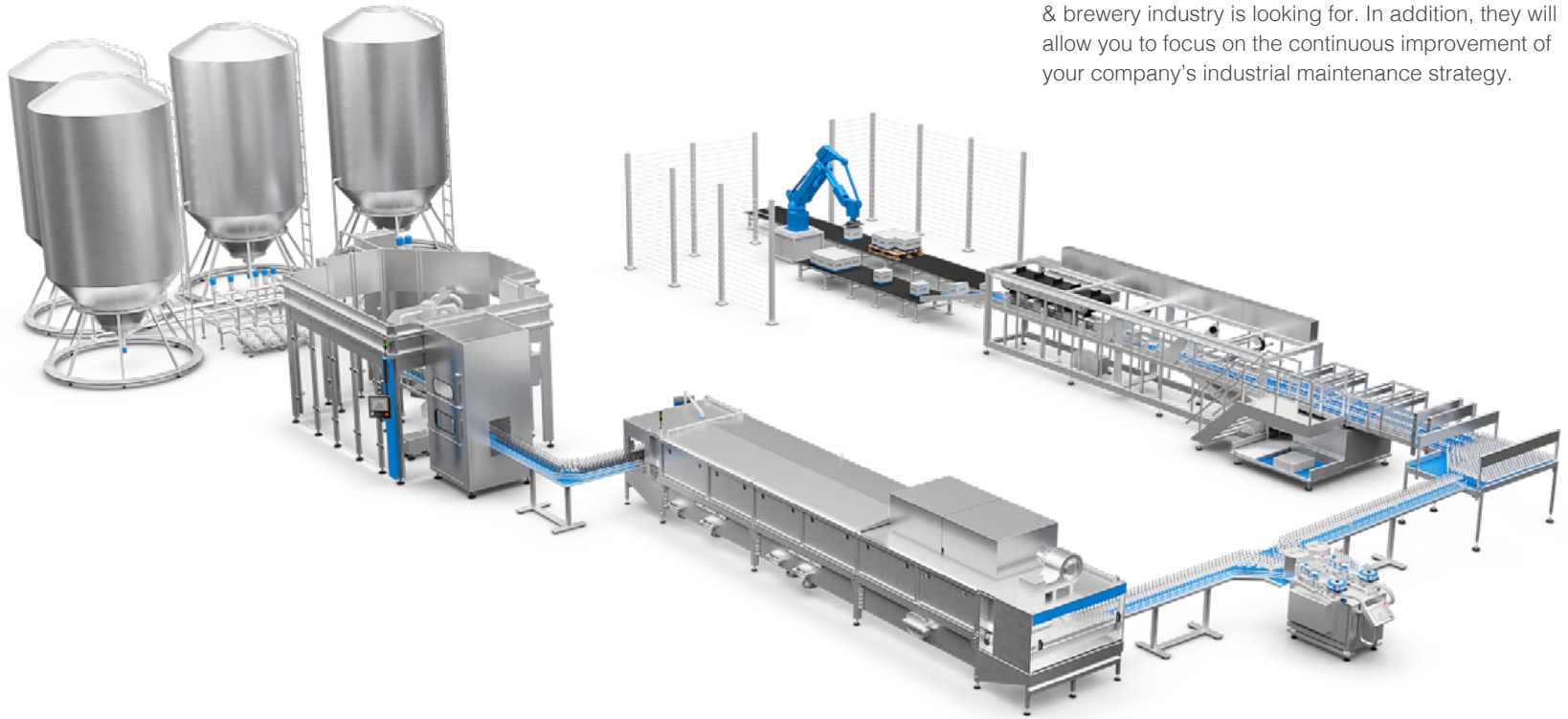
Our solutions for beverage and brewery industry

Flow monitoring

Flow monitoring and control is crucial, since the data collected by flow measurement equipment can help to pinpoint areas where a process can be improved and can help predict where and when a process is likely to fail. While SMC intelligent and self-diagnostic flow instruments are essential to obtain repeatable and accurate results, the information obtained can also be used to achieve tighter process control. In addition, advances in flow equipment increase safety in installations and allow for greater versatility and application in difficult situations.

Communication systems

The communication protocols of SMC products can help you to improve your productivity and reduce your costs, guaranteeing dynamic production processes and leading to the Smart Flexibility that the beverage & brewery industry is looking for. In addition, they will allow you to focus on the continuous improvement of your company's industrial maintenance strategy.



Position sensing and monitoring

In order to control the fault-free operation of a process, the position of key machinery equipment must be monitored. SMC sensors and positioners guarantee a high degree of positioning accuracy on the machine, meeting the most important requirements for sensors and positioners: precision, maximum process availability and a long service life.

Pressure monitoring

For processes involving liquid and gaseous media to be stable and reliable, continuous, intelligent monitoring is required. SMC pressure devices ensure accurate monitoring thanks to their extremely fast response times, as they send precise measured values to the controller in real time, via the IO-Link open standard technology. Based on the acquired data, processes can be optimised, resource consumption can be reduced and system availability can be increased, to improve productivity and efficiency.

Process area

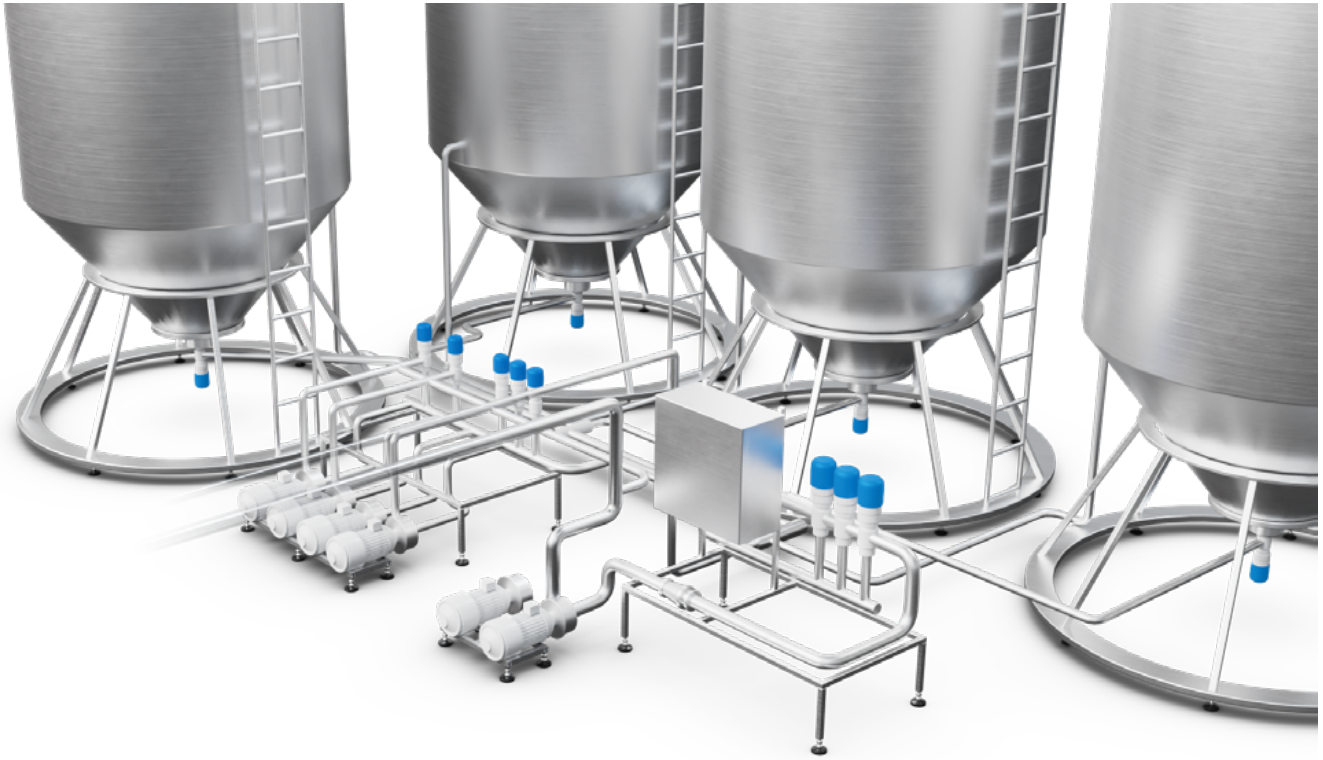
Taking care of the critical parameters of the process area can make a difference to the final product quality. With an appropriate monitoring solution, all the variables such as fluid pressure and flow rate, tank temperature control, valve positioning and leaks can be under control at any time, making it possible to detect any anomaly beforehand and fix the problems prior to any failure.

Fieldbus system
EX600 Series

Sensor data
- Condition-Based Monitoring and real-time feedback, diagnostic functions and remote access
- Serial interface to reduce maintenance and installation time
- Multiple serial interface compatibility for ease of data access.

Electro-pneumatic regulator
ITV-IL Series

Air supply
- Checking information and monitoring status
- Performing pressure control and maintaining process parameters
- Alarm output to highlight machine faults.



Circulating fluid temperature controller
HRS Series

Cooling process
- Early indication when parameters are out of limits
- Maintenance indication alarm
- On remote setting adjustments.

Electro-pneumatic positioner
IP8100 Series

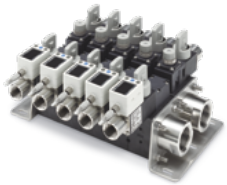
CO2 system
- HART transmission for remote monitoring and setting change
- Alarm output setting to avoid product failures
- Visual indication to improve uptime.

Filling

Liquid filling machines ensure that each bottle is evenly filled, but for this to happen with as few errors as possible, it is essential to monitor the machine pressure and flow. This way, it's possible to avoid pressure drops from the air filter, as well as controlling changes due to leaks or a process out of limits. The control of these parameters has a direct impact on the final product quality of the product and overall machine efficiency.

3-screen display digital pressure switch for air
ISE70/71 Series

Pressure monitoring
- Early indication of failure due to pressure drop
- Energy saving when controlling pressure reduction
- Remote monitoring for easy access to process data.

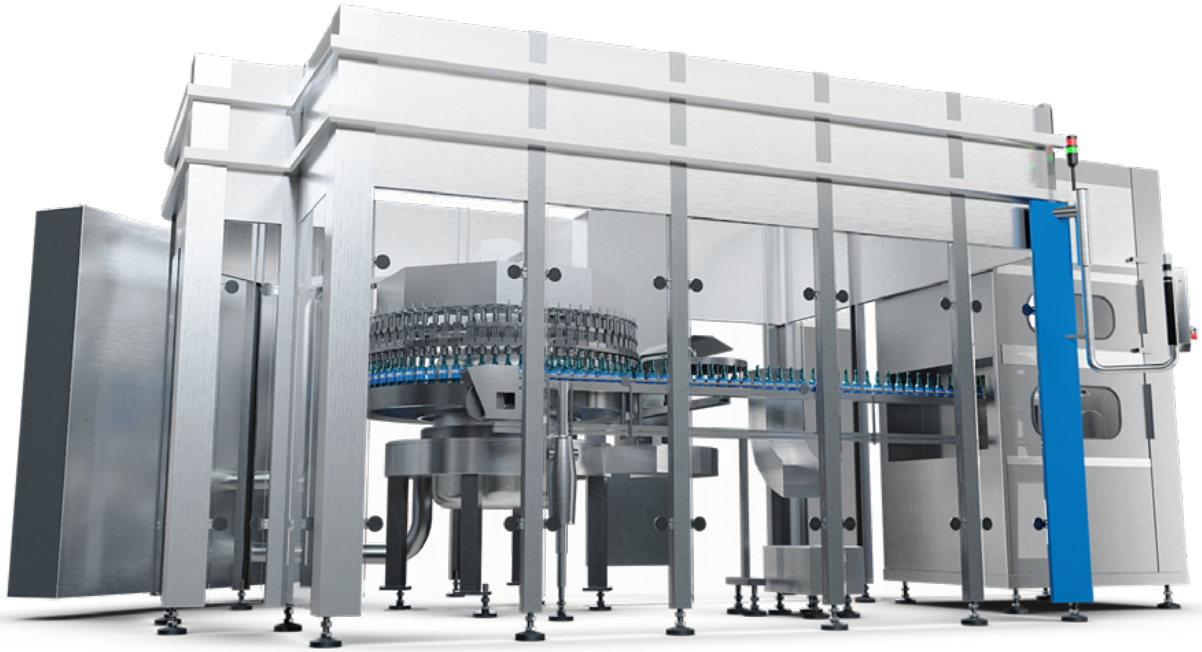


Digital flow switch for water
PF3W Series

Water & CIP process
- Visual indication to avoid downtime
- Flow adjustment valve for reduction in setting man-hours
- Temperature control to avoid bacterial growth.

Air Management System
AMS20/30/40/60 Series

Flow, pressure and temperature
- Programmable standby and isolation modes
- Compatible with SMC wireless systems
- High security using unique encryption.



Stand-by valve
VEX-X115 Series

Production stops
- Visual confirmation of correct pressure when running or at idle
- Shut-off and stand-by modes, to fully isolate or reduce air pressure during stops
- Extends the life of the pneumatic components and reduces the maintenance costs.

Pasteurising

The importance of good pasteurisation goes beyond quality or taste. To guarantee the product meets the appropriate food safety standards, process parameters such as machine flow, pressure and temperature must be under control. Process limits, leaks, and changes at critical points of the process must be targeted and monitored with suitable equipment.

Digital flow monitor
PFG300 Series

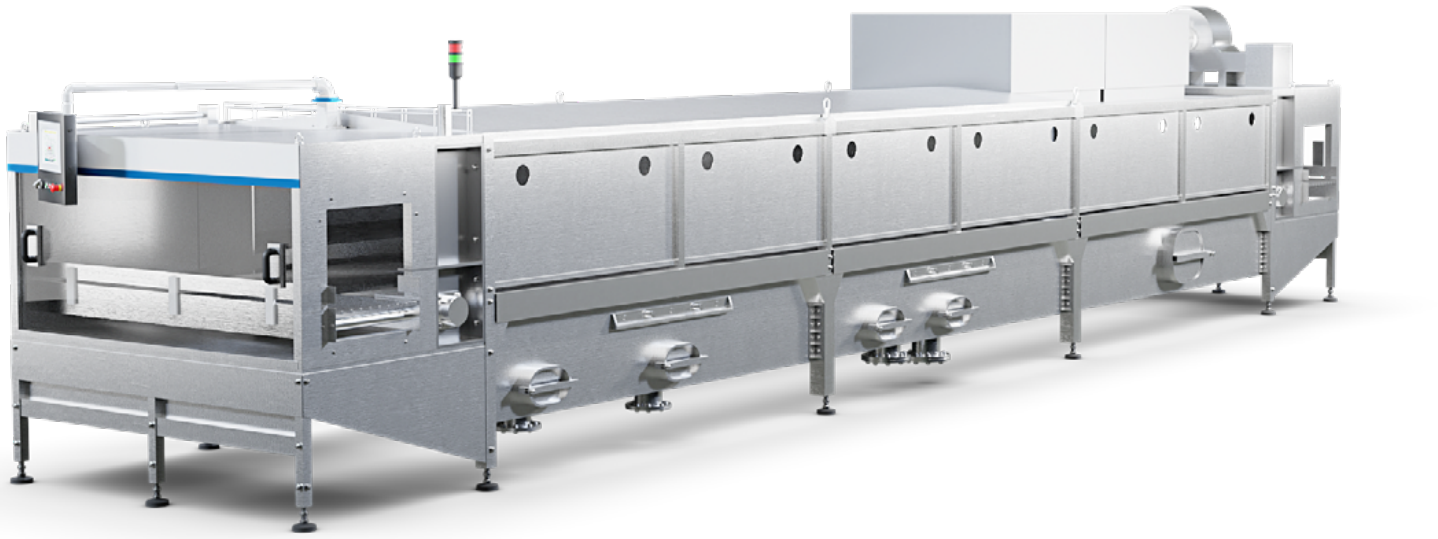
Flow fluctuations
- Centralised flow control for easy visualization of process parameters
- Large flow range enables one monitor, reducing inventory and spares.

3-screen display, multi-channel digital sensor monitor
PSE200A Series

Process conditions
- Remote monitoring of fluctuations in parameters to improve troubleshooting capabilities and reduce downtimes
- Multi-channel single point controller for easy access to data.

Automatic leak detection system
ALDS Series

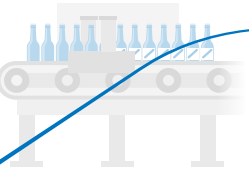
Air leaks
- Reduce investigation time
- Maintenance report provides clear leak data for repair
- Minor leak detection gives early indication of failure.



Pressure gauge with switch
GP46 Series

Supply pressure
- Limit indicator, output light and signal for early identification of out-of tolerance levels, preventing quality issues.

Labelling



For consistent labelling, it is necessary to consider air pressure and flow, as well as the maintenance of any ionizer nozzles. If we have these parameters under control, we can monitor for labelling problems at an early stage before any errors occur. Inadequate monitoring can fail to detect errors that lead to inconsistent labelling and final product quality issues.

High-precission digital pressure switch
ZSE20 Series

Vacuum pressure
- Two-colour indication to detect failure due to loss of vacuum
- Prevention of dropped product or packaging, reducing machine intervention
- Remote monitoring of vacuum loss for early intervention.

Ionizer, fan type
IZF21/31 Series

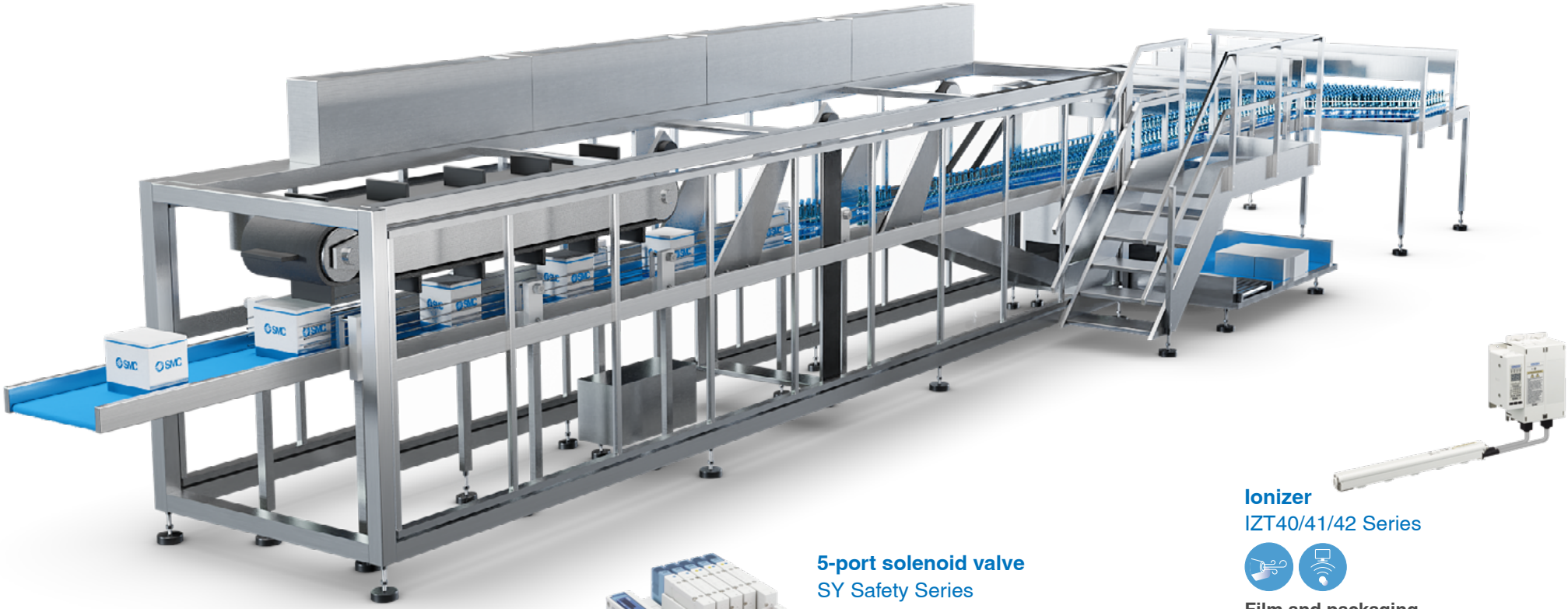
Static electricity
- Monitoring and control of static voltage to prevent degradation in offset voltage
- Constant monitoring of the emitter contamination level
- 7 types of failure alarm provided to signal on-time maintenance intervention.

Digital flow switch for large flow
PF3A□H Series

Machine flow and temperature
- IO-Link compatibility for remote maintenance data reporting on device status and cable breakage
- 3-colour and 2-screen display for clear visualisation of instantaneous and cumulative flow rate.

Case packing

For the packing stage, a smooth, fast and flexible operation is key. This depends on many factors, and a proper maintenance plan can help to keep all of them under control. By monitoring air pressure and flow to avoid restriction and leaks, or checking the nozzles of the static ionizer, you can continue without unscheduled stoppages and increase uptime.



Actuator position sensor
D-MP Series

Actuator position
- Accurate position over a longer range
- High repeatability to detect early signs of cylinder failure.

5-port solenoid valve
SY Safety Series

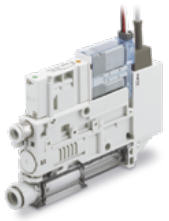
Machine and line safety
- Feedback on valve position
- Integration of PROFIsafe ensures the integrity of failsafe signals between safety devices and controller
- Conforming to ISO 13849-2.

Ionizer
IZT40/41/42 Series

Film and packaging
- Control ion level and reduce static elimination time
- Fast operation improves film packing quality and reduces machine intervention
- Abnormality and maintenance detection gives early warning of electrode wear or fault. Compatible with IO-Link (only for IZT41/42).

Palletising

During palletising and depalletising, monitoring air vacuum and pressure is essential to avoid process failure. With the correct monitoring of the parameters, we can detect errors such as loss of vacuum due to pad wear and blocked filters, pressure drops derived from filter air starvation, variations in air consumption due to leaks and actuator position errors.

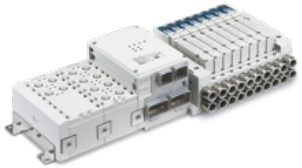


Vacuum ejector system
ZK2-A Series

Vacuum operation
- Visual indication and output signal, reducing potential quality issues and improving efficiency
- Reduces air consumption and energy costs through intermittent energising.

Differential pressure gauge
GD40 Series

Filter elements
- Pressure drops across filters can be visually monitored
- Helps for a controlled maintenance schedule to maintain process parameters.



SI unit
EX245 Series

Restart times
- Information can be shared with up to 3 controllers in addition to the control PLC
- Compatible with the PROFIenergy energy-saving function.

SI unit, wireless
EX600-W Series

Remote monitoring
- Eliminate communication cable faults
- Multiple sensors can be connected to a single master
- Safe and reliable data with real-time communication with encryption.

SMC Business Continuity Plan

Discover more on SMC Business Continuity Plan

Sustainable growth also means ensuring uninterrupted operations

We are committed to ensuring that SMC is prepared for any emergency and that our business activities will not stop in the event of such circumstances. SMC aims to fulfil our product supply responsibilities and maintain our customers' trust by contributing to both sustainable growth and the expansion of technological innovations.

SMC, as a comprehensive manufacturer of automatic control equipment that supports automation, is able to promptly provide products that meet our customers' needs anywhere in the world.

Finance BCP

Safe & Solid financial base

In the event of an emergency, SMC can provide a safe and solid financial base (with cash, deposits, and equity capital) that will sufficiently cover the working capital and funds needed to rebuild buildings and the equipment required for business continuity. This is done to provide peace of mind to our customers and workers alike.

Information security BCP

Vital data kept safe

Strengthen information security for protection against computer viruses and cyberattacks, plus the installation of data centres to establish a disaster recovery system. Your information is safe with us.

Sales BCP

Consistent sales support

8,700 sales engineers worldwide ready to recommend the best solution for you.
83 global locations to make sure that wherever you are, we are there too.

Production BCP

Ensure customer order fulfilment

Reliable delivery for you thanks to our 8 global logistic centres and 34 production sites, 10 of which are located in Europe. Moreover, flexibility to rapidly respond to any sudden change in the manufacturing environment.

Aiming to gain your trust
Sustainability through reliability

Engineering BCP

Consistent technical support

1,700 engineers at our 5 technical centres around the globe (2 in Europe - Germany and UK).

Expertise – Passion – Automation

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