



**Get on tap with how Emerson can
optimize your brewing operation**

Complete Solutions for the Brewing Industry

Proven automation solutions and local expertise to help you overcome your toughest challenges.





Get On Tap with how Emerson can Optimize your Brewing Operation

In today's highly competitive and rapidly evolving brewing industry there is a need to strive continually to improve production throughput and flexibility, reduce product costs and meet aggressive sustainability targets. By teaming with Emerson, you'll gain the tools and insights to maximize your production capacity, reduce your production costs and associated product losses, and achieve a step change in reaching your sustainability targets.

Solutions for your Brewing Operation

Maximize Your Production Capacity

A lack of flexibility and excessive amounts of planned and unplanned downtime can prevent you from maximizing your production, subjecting you to higher operating costs. Emerson's solutions help you overcome these challenges by shortening your changeover time, increasing the effectiveness of your planned downtime, and reducing the frequency, impact and duration of unplanned events.

Reduce Production Costs

Product losses, rising labor costs and inefficient energy usage can erode your operation's profitability. Emerson's solutions help you reduce these production costs with advanced automation technologies that provide enhanced insight into your processes for assured product quality, more efficient operations and improved energy management.

Meet Your Sustainability Goals

Inefficient processes and/or insufficient equipment can impede your sustainability efforts by causing your operations to use too much water, produce excess waste, and increase your carbon footprint. Emerson's solutions provide enhanced insight into your operations for increased efficiency throughout your production process so that you can meet your sustainability goals.

Measurable Improvements

From enhancements to facility expansions to a new build, beer producers are turning to OEM's, engineering firms, consultants, integrators and automation solutions experts to maximize the return on investment and make use of the most recent technology advances to get a competitive edge in the market. Emerson offers a complete portfolio of software, product, solutions and services, along with deep expertise to support your Brewing Operations:

- Digital Smart Brewery
- Controls, Automation, Visualization software, Ethernet switches
- Blending and cleaning
- Filling, CIP, Labeling and other packaging solutions
- Motion control for packaging
- Smart diagnostics that reduce downtime
- Process sensing technologies
- Monitoring and diagnostics of pneumatic machinery
- Reliable valves
- Mass balance solutions
- In-line quality control and analytical devices
- Leak detection solutions
- Workforce effectiveness
- Smart Wireless solutions
- Energy management
- LED lighting and electrical solutions
- Extensive service and support



APPLETON™ **ASCO™** **AVENTICS™**

BRANSON™ **DELTA V™** **KEYSTONE™**

MICRO MOTION™ **ROSEMOUNT™**





Milling, Mashing & Lautering

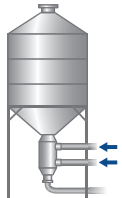
Milling, Mashing & Lautering



Grains

Overcome the challenge of measuring large grain silos with a **Rosemount 5408 Non-Contacting Radar** solution. Advanced surface tracking ensures the level reading is correct and the air purging system avoids blockage of the antenna.

The **Rosemount 2500 Solids Level Switches** offer a range of bulk solids point level measurement. They are compact in size, which is ideal for installation in any size vessel or silo. This time-proven and trusted technology is suitable for operations in the most challenging environments, including high temperature, pressure, and dust.



Malt Conditioning

Conditioning the malt to increase throughput by reducing processing time starts with adding water to the malt before it enters the mill to soften the husks. Measuring the water to optimally condition the malt and maximize extract separation and husk quality can be achieved with the **Rosemount Magnetic 8705 Flow Meter**, a cost-effective and low-maintenance solution.



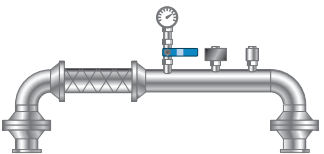
Mash Optimization

Precise addition of liquid enzymes to the mash to enhance the conversion of starches to sugar can be achieved with a **Micro Motion Coriolis Flow Meter with 5700 Transmitter**. The Mash temperature impacts enzyme activity and how efficiently the starch is converted to fermentable sugars. The **Rosemount 644 Temperature Transmitter** features transmitter-sensor matching with **Callendar-Van Dusen** constants which reduces total measurement error and ensures proper conversion of fermentable sugars.



Wort Density & Flow

There are various points in the brewing process where measuring the wort density are key. Using a **Micro Motion Fork Density Meter**, high accuracy monitoring and control of wort density or “sweet wort” can be achieved to both eliminate manual sampling and reduce waste. One example is at the Lauter tun, where the clear liquid wort is separated from the mash and measured. Another key variable is the concentration or the density of beer wort in terms of percentage of extract by weight. This measurement is usually performed in a lab and can take up to an hour. In addition, different beers have different concentration curves, and to optimize each specific brew, the **Micro Motion 5700 Transmitter** can be easily loaded with custom curves, making it an ideal choice on measuring the Lauter Tun run off flow to identify the point where it is no longer efficient to recover more wort from the mash.



Process Automation

Achieve a step change in the design of a brewery with the automation of air-operated valves and cylinders, for a variety of brewing steps with the **AVENTICS Valve Systems with G3 Electronics**. An easy, cost effective solution for Digital I/O and Valve Automation, using G3 Electronics with its innovative graphic display provides easy commissioning, visual status and diagnostics. These can be built into the **Integrated Enclosures Solutions**, a customized stainless steel control cabinet for sanitary and wash-down environments.

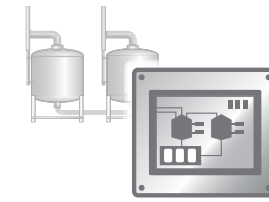
Movicon WebHMI provides a solution to create HMI web visualizations and cross-platform applications based on web server technology. Along with the **PACSystems edge controller**, this solution provides enhanced visibility to maintain product quality and asset utilization.

Featured Products for Milling, Mashing & Lautering		
Rosemount 8705 Magnetic Flow Meter  The Rosemount 8705 Magnetic Flowmeter, an all-welded construction with a robust hermetic seal that protects against moisture and other contaminants. Adding the wireless option makes it simple to integrate with EtherNet/IP and ideal for hard to reach and remote installation locations.	Rosemount 644 Temperature Transmitter  This temperature transmitter offers transmitter-sensor matching with Callendar-Van Dusen constants which provides superior temperature control for your process. Single and dual sensor capability as well as optional diagnostic features gives the option to customize this assembly to meet the needs of your measurement point.	Micro Motion Fork Density Meter  Featuring an innovative new integral transmitter, the fast-response, direct-insertion Micro Motion Fork Density Meter (FDM) offers installation flexibility with continuous, real-time density and concentration measurement in pipelines, bypass loops and tanks.
Rosemount Level Non-Contacting Radar Level Transmitters  The Rosemount 5408 Level Transmitter Non-Contacting Radar (left) provides easy to use continuous level measurement of both liquids and solids in any application. Two-wire FMCW technology maximizes radar signal strength to produce a robust and reliable measurement. The Rosemount 1408H Non-Contacting Radar Level Transmitter (right) provides continuous liquid level measurement in most applications. Featuring fast-sweep FMCW technologies and smart algorithms, it provides accurate and reliable measurement signals.	Rosemount 2500 Solids Level Switches  The Rosemount 2500 Solids Switch range offers the complete choice of point level measurement for bulk solids. Four different technologies are available. Rotating paddle, vibrating rod, vibrating fork, and capacitance. The switches provide flexible measurement for powders, grains, and pellets and their compact size makes them ideal for installation in all sizes of vessels and silos.	Micro Motion 5700 Transmitter  The Micro Motion 5700 Transmitter's intuitive design ensures measurement confidence, valuable process insight and productivity through simplified solutions. Achieve the best response in the most challenging applications, and benefit from the feature to pre-load custom Plato curves to optimize your brews.

Featured Products for Milling, Mashing & Lautering		
Micro Motion F-Series, H-Series and ELITE Coriolis Flow Meters  With unmatched flow and density measurement for liquids, Emerson offers a full range of Micro Motion Coriolis flow meters. From the compact and drainable F-Series, the H-Series Hygienic to the ELITE, the full range is designed to deliver accurate, repeatable flow and concentration measurement, and is perfectly suited for specific brewing applications.	PACSystems CPL410 Edge Controller  The Edge Controller is a 2 in 1 edge device and automation controller. It uses hypervisor technology to run real-time deterministic control applications concurrently with edge applications without impacting each other. This enables real-time edge analysis without excess hardware or the reduced latency of analysis on the cloud. With edge technology, selectively sending summarized data to cloud services is also possible, allowing engineers to analyze broader enterprise data.	
AVENTICS Directional Control Valve System with G3 Electronics  AVENTICS valve systems pilot air operated valves, cylinders, and actuators for brewing, bottling, and packaging. Their embedded fieldbus and I/O capability simplify installation and commissioning by eliminating individual wiring and piping. The AVENTICS G3 RTD Temperature Module can be integrated for temperature sensing in fermentation and conditioning. The LED display allows for easy monitoring, diagnostics and configuration, plus an auto recovery module reloads configuration data to ensure fast change-out.	Integrated Enclosure Solutions  Emerson offers turnkey solutions of best-in-class ASCO and AVENTICS products mounted in stainless steel integrated enclosures. Components can include directional and fluid control valves, G3 fieldbus electronics, and FRLs. These NEMA wash-down-rated solutions eliminate contamination and protect components from corrosion that may cause downtime. They also eliminate complex tubing, routing, and bulkhead fittings.	Industrial Ethernet Switches  Emerson's industrial ethernet switches are the complete package: rugged and compact, with reliable redundant power inputs for higher availability. They are also fully integrated into PAC Machine Edition development environment. With our unique network management tool and a secure-by-design approach, you can achieve high performance in demanding operations.

Brewing

Brewing (Brew Kettle)



Brewing Control

Brewing control can be optimized with reliable **Keystone Butterfly Valves** for key inputs.

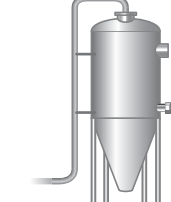
Installing the **Rosemount 2110 Level Switch** at high and low level provides reliable pump control for automated filling of intermediate tanks, with good resistance to changing temperatures and presence of foam.

Movicon.NExT™ has been designed to overcome the limitations of traditional SCADA/MES/HMI technologies. Based on modern technology, Movicon.NExT™ is an innovative solution that creates the basis for long-term investment without compromise. It provides easier access to modular solutions for supervision, HMI, control, historian, MES and industrial analysis.



Wort pH

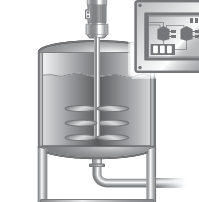
Monitoring the wort pH determines hop solubility and controls body, flavor and clarity. Hot wort can be monitored using the **Rosemount Hx338+ Steam Sterilizable & Autoclavable pH Sensor**.



Energy Regulation

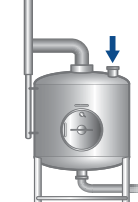
The wort is often brought to boil from steam lines within the brew kettle. Too little steam flow boils the wort slower, while too much steam flow wastes valuable steam. Precise steam flow can be monitored using **Rosemount 8600 Vortex Flow Meters** or **Rosemount 3051SF DP Flow Meters**.

Movicon Pro.Energy is the ideal software solution for collecting, visualizing and analyzing energy consumption data. It allows you to reduce your company's energy bill and reduce your carbon footprint, leading to an overall increase in competitiveness.



Density Control

Level control can be a key way to see density changes in the brew kettle. Strong vapors and agitators make controlling level very challenging. **Rosemount 3051S Electronic Remote Sensor (ERS)™ Systems** can be used to correct for strong vapors, turbulent fluids, and changing ambient temperatures, while providing reliable level measurements and tracking density changes.



Adjunct Syrup

Adding the precise sugar content to the brewkettle in order to increase the fermentability of the wort requires the critical measurement of sugar content of adjunct syrups. **Micro Motion Coriolis Flow Meters** can be used to directly measure the sugar concentration of the syrups and ensure the correct Plato of the wort leaves the kettle for fermentation.

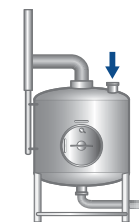
Featured Products for Brewing	
Keystone Figure 990/920 Butterfly Valve  A split body thin disc valve for high and modulating flow. Designed for brewing, the one-piece, thin profile, disc stem provides minimum obstruction to flow, resulting in highest flow coefficient, lowest pressure drops and best control characteristics.	Rosemount 3051S Electronic Remote Sensor (ERS) System  Featuring best-in-class performance and measurement stability, the Rosemount 3051S Electronic Remote Sensor (ERS™) System is engineered with flexible, digital architecture. The ERS System calculates differential pressure electronically using two pressure sensors linked together with an electrical cable. Easy to install, this safety-certified system is engineered for faster response time than traditional systems, providing you with exceptional performance in the brew kettle.
Rosemount 3051SF Differential Pressure (DP) Flow Meters  The Rosemount 3051SF family of differential pressure flow meters offers an accurate and easy to install solution for utility measurement. Available with a Conditioning Orifice for limited straight run applications or Annubar™ primary element for low pressure loss, this flow meter family is ideal for the brewing industry.	Rosemount 8600 Utility Vortex Flow Meters  The Rosemount 8600 Utility Vortex flow meter is optimized for general purpose flow metering and utility applications including clean fluids and steam flow. The 8600 Utility Vortex meter offers enhanced reliability and simplified maintenance with superior vibration immunity without any moving parts. Installation is easy with no impulse lines or zeroing required and internal verification of both the electronics and sensor add enhanced process insight.

Featured Products for Brewing		
Rosemount 2110 Level Switch  The Rosemount 2110 Level Switch offers simple and reliable level detection for compact spaces and in-pipe measurement. Hygienic certificates and all-stainless steel construction expands application capability to include sanitary processes. The vibrating fork technology has no moving parts, needs no calibration, and is virtually unaffected by process conditions.	Micro Motion F-Series, H-Series and ELITE Coriolis Flow Meters  With unmatched flow and density measurement for liquids, Emerson offers a full range of Micro Motion Coriolis flow meters. From the compact and drainable F-Series, the H-Series Hygienic to the ELITE, the full range is designed to deliver accurate, repeatable flow and concentration measurement, and is perfectly suited for specific brewing applications.	
Rosemount Hx338+ Steam Sterilizable & Autoclavable pH Sensor  The Rosemount Hx338+ pH sensor provides a unique pre-pressurized pH reference technology. The pre-pressurized reference stops contamination between batches by not allowing the process to leak into the sensor. The pH reference also features a triple barrier junction which works to maintain a drift-free pH signal and fight poisoning ions (i.e., sulfides, proteins, or sugars), even after numerous sterilization cycles.	Keystone Model OptiSeal F14-F17 Butterfly Valve  A resilient and proven valve for general purpose applications in brewing operations. The body locating holes ease installation and centering between the flanges, rounded polished disc edge gives full concentric sealing, lower torques, longer seat life and bubble-tight shut-off. No flange gaskets required. With no need to remove the actuator during seat replacement, the butterfly valve is suited for the brewing industry.	Movicon WebHMI Software  Movicon WebHMI is the software solution integrated into Movicon.NEXT technology to create HMI web and cross-platform applications. It is based on web server technology and 100% independent from hardware and operating systems. It offers a simple, affordable and scalable solution which can be integrated with SCADA/HMI platform.

Fermentation

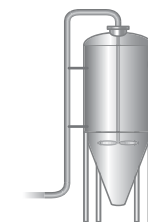
Fermentation

Fermenters holds as much as 70% of the total production volume of a brewery, and represent 70% of CO₂ production. Automation solutions that optimize the fermentation process provide measurable benefits from quality to throughput.



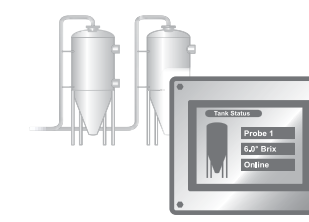
Beer Enhancers

To improve taste and mouth feel of beer, many brewers use enhancers which usually contain a mix of dextrose and maltodextrin. Achieving a consistent blend ratio of these costly additives can be achieved using a high accuracy flow precision measurement. A **Micro Motion Coriolis Flow Meter** used for high precision dosing eliminates the need for manual sampling and ensures product quality by using the correct amount of beer enhancers.



Wort Aeration

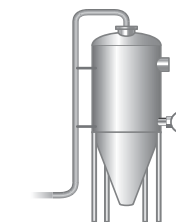
Wort aeration prior to fermentation is done to ensure the yeast has sufficient oxygen to complete fermentation and prevent a hung fermentation. Thermal mass or rotameters are typically used yet can be fouled leading to incorrect aeration impacting throughput and product quality. **Micro Motion Coriolis Flow Meters** can be used for air measurement, providing a repeatable process.



Fermentation Monitoring

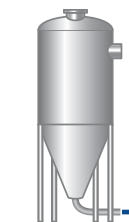
Once yeast activity slows and glucose conversion is complete, the specific gravity of a tank will stop changing and the beer can advance to the filtration process. Using the **Rosemount 3051S Electronic Remote Sensor (ERS) System** or the **Micro Motion Fork Density Meter (FDM)** to accurately monitor the specific gravity, brewers receive a trigger immediately at the End of Fermentation (EOF), providing a significant throughput improvement potential, in many cases in excess of 10%. FDM can validate its performance in the brewery using **Micro Motion Known Density Verification (KDV)**, providing additional confidence in the FDM's performance while greatly reducing costly re-calibrations.

Movicon.NExT provides a platform for SCADA/MES/HMI to enable visibility and insights for the entire brewing process as well as the reports, trends and data analysis needed for fermentation.



Temperature Regulation

Temperature control during fermentation is vital. Emerson has a variety of solutions for regulating fermentation and maturation process temperatures. **ASCO Temperature Control Valves** can eliminate multiple valves for double and single-jacketed tanks, enabling the use of a single body valve in a tank or vessel. An **ASCO PositionerD Valve** can be incorporated to proportionally add glycol to conserve cooling fluid. ASCO temperature control valves can be combined with the **AVENTICS G3 Electronics** and AVENTICS air preparation equipment for piloting and temperature sensing.



Yeast Recovery

Once yeast has settled in the bottom of the fermenter it is removed and can either be re-used or sold as a nutritional supplement. Measuring the fluid density enables the ability to identify the interface between yeast and beer. Further CO₂ may be present and can impact the density measurement. **Micro Motion Coriolis Flow Meters** use an algorithm to identify yeast from beer accurately ensuring proper yeast recovery and preventing premature fouling of filters downstream.

Featured Products for Fermentation

Micro Motion F-Series, H-Series and ELITE Coriolis Flow Meters



With unmatched flow and density measurement for liquids, Emerson offers a full range of Micro Motion Coriolis flow meters. From the compact and drainable F-Series, the H-Series Hygienic to the ELITE, the full range is designed to deliver accurate, repeatable flow and concentration measurement, and is perfectly suited for specific brewing applications.

Micro Motion Fork Density Meter



Featuring an innovative new integral transmitter, the fast-response, direct-insertion Micro Motion Fork Density Meter (FDM) offers installation flexibility with continuous, real-time density and concentration measurement in pipelines, bypass loops and tanks.

Rosemount 3051S Electronic Remote Sensor (ERS) System



Featuring best-in-class performance and measurement stability, the Rosemount 3051S Electronic Remote Sensor (ERS™) System is engineered with flexible, digital architecture. The ERS System calculates differential pressure electronically using two pressure sensors linked together with an electrical cable. Easy to install, this safety-certified system is engineered for faster response time than traditional systems, providing you with exceptional performance in the fermentation process for breweries.

ASCO Temperature Control Valves

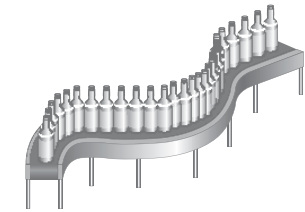
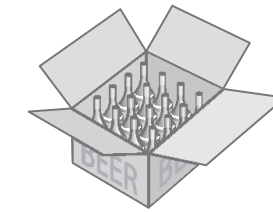
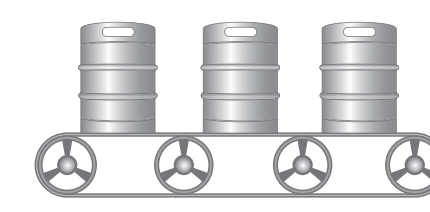
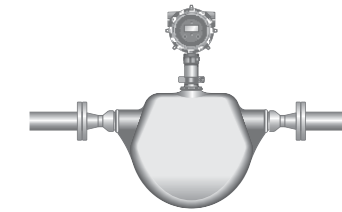
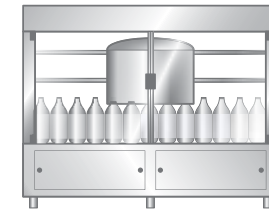


The ASCO air operated Direct Acting Temperature Control Valve is engineered to reduce the overall complexity and footprint in wiring and number of valves required for fermentation tank heat exchange. The valve is comprised of two valves in one body, with six ports to allow both feed and return of media allowing the same valve to control both hot and cold glycol flows. The ASCO 290FB Series meets the FDA CFR21 certification, making it an ideal choice for areas that require sanitary conditions. Furthermore, our range of valves can be intelligently combined with the AVENTICS G3 Fieldbus Electronics providing high-level precision in temperature regulation and level sensing.



Packaging

Packaging



Transfer to Packaging

Overcome the challenges associated with the presence of air entrainment and changing flow profiles when transferring beer from the filtering to the packaging operations using **Micro Motion Coriolis Flow Meter with 5700 Transmitter** and **Advanced Phase Measurement**. Also ensure filling lines are full and correctly pressurized to provide consistent flow rates to the bottling operations with the **Rosemount 3051HT Hygienic Pressure Transmitter**.

PACSystems controllers with **PACMotion** servo and VFD technology address packaging needs by providing a comprehensive solution from capping, filling, labeling, cartoning, and palletizing.

Taxation Verification

Local taxation authorities require that breweries measure and report the amount of alcohol produced for tax purposes when transferred from the brewing to bottling, and that a verification be performed on a regular basis. This verification process is typically done manually, and requires the process to be stopped. With Emerson's **Smart Meter Verification**, measure the critical taxation points while obtaining in-line verification with an automatic scheduler without interrupting your process.

Keg Filling Innovations

Obtain in-line continuous keg leak detection to reduce product losses and associated product quality risks such as flat beer or mold formation from leaking kegs with the **Rosemount CT4215 Packaging Leak Detection System**. In addition, new advances in packaging are also benefiting from keg filling innovations from Emerson. For instance, BrewLock is a revolutionary new dispensing system developed by Heineken to bring brewery fresh beer to the consumer. This new keg is 100% recyclable and will eliminate reverse logistics costs of kegs and associated CIP. The BrewLock is made using the spin welding Emerson **Branson SW300**.

Scalable solutions are available with **PACSystems controllers, servo drives and motors, and QuickPanel+ industrial displays**. High speed integrated outputs are connected easily with pneumatics and vision system.

Packaging Solutions

Typical power supplies that support bottling and packaging lines are mounted inside large, expensive, specially-rated enclosures located away from production equipment. Power is routed from these enclosures to machines via cabling, which not only increases costs but limits opportunities on a line for future automation. Emerson's **SolaHD IP67-SCP-X Power Supply Solutions** remove limitations in the power architecture, allowing machine designers and operators to safely put power where needed. Power outages and voltage sags can prematurely wear bottling and packaging equipment, leading to machine failures and shutdowns that result in increased waste and loss of production. Emerson's **SolaHD SDU-A Series DIN Rail AC UPS Solutions** is an uninterruptible power supply solution.

Line Automation

For the automation of conveying, bottling, canning and kegging, OEMs and brewers work with the widest array of ASCO fluid and motion control solutions. The **AVENTICS Valve Systems with G3 Electronics** intelligently control your pneumatic actuators and air pilot valves. Our select FDA-certified **AVENTICS Corrosion-resistant Cylinders** are designed for easy cleaning, eliminating the risk of food contamination. In addition, Emerson has a full product range of **ASCO Solenoid Pilot Valves** designed to meet the high cycling demands of bottling and can be coupled with spring-return and double acting cylinders for use throughout the bottling process.

Emerson's **PACSystems** and **PACMotion** platforms provide high speed, scalable and flexible solutions that are easily integrated, leading to faster time to market, increased throughput, and enhanced quality.

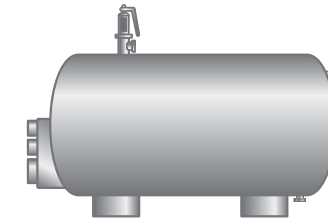
Featured Products for Packaging		
Smart Meter Verification  Smart Meter Verification is an easy-to-use, automatic diagnostic tool that monitors the entire flow meter's performance and integrity—without requiring you stop your process and is available on Coriolis meters and magnetic meters. It can even eliminate the need for you to go to the field when scheduled or combined with a digital control network or Emerson's Smart Wireless. It can also be used to extend calibration intervals.	AVENTICS Cylinders and Motion Controls  Emerson offers an extensive range of AVENTICS motion control devices that automate a variety of processes in any brewery such as conveying, bottling, canning and kegging. Available in stainless steel for protection from caustic wash-down procedures enabling a sanitary production environment.	PACMotion Servo Motors and Drives  PACMotion combines integrated motion and machine logic with the performance, flexibility and scalability required for advanced machine automation. The PACMotion controller, servo drives and servo motors are designed to work together in applications from a few axes up to 40 axes on a single backplan.
Micro Motion Advanced Phase Measurement  Micro Motion Advanced Phase Measurement is expertly designed to provide accurate measurement for complex processes and challenging multiphase flow environments.	Branson SW300  Precision servo-driven spin welding system capable of circular joint interface parts with accurate control and highly consistent results, used to enable new product innovation in the brewing industry, like the revolutionary BrewLock keg and dispensing system.	ASCO Solenoid Pilot Valves  Dependable ASCO solenoid valves are found in almost every brewery. These renowned products offer piloting control of process valves and cylinders in liquid transfer for water supply, washout, bottling and packaging lines, mashing, steam or cooling water in outdoor tanks.

Featured Products for Packaging		
PACSystems RX3i Controller  PACSystems Rx3i controller provides a high performance and secure CPU. It provides flexibility, scalability and a modular programmable design. This solution helps minimize changeover time and reduce time to market. It also offers interoperability that extends the system life cycle.	Rosemount 3051HT Pressure Transmitter  Best in class reference accuracy plus up to a 7 year stability ensure the Rosemount 3051HT will deliver precise and repeatable pressure measurements in even the toughest applications. Batch to Batch Repeatability testing ensures that pressure measurements will stay within specification even after being subjected to routine, high temperature cleanings.	Rosemount CT4215 Packaging Leak Detection System  An automated, in-line system that allows for each beer keg to be tested for leaks. Unidentified leaks can impact product quality and create customer issues. The Quantum Rosemount Laser technology offers high-speed detection and automatically rejects defective leaking beer kegs from the assembly line. The system is easy to install and configure, minimizing disruption to the production line.
AVENTICS Filters, Regulators, and Lubricators (FRL)  The AVENTICS Series 651/652 offers a complete range of modular, easy-to-assemble air preparation products. It includes the several filtration options (particulate, coalescing & adsorbing) with an extensive selection of bowl types and drains. Extended temperature range capabilities (-40°F to 176°F / -40°C to 80°C) allow the series 651/652 to be specified across a broad range of applications in the brewing industry. Our regulators and filter-regulators provide customers with the highest in-class flows in the industry. Available port size/thread types include 1/4, 3/8 and 1/2 (NPTF, ISO 228/1-G and ISO 7/1 Rc).		SolaHD SDN-C DIN Rail Power Supplies and SDU-A DIN Rail Uninterruptible Power System  SDN-C DIN Rail Power Supplies are designed for easy selection and installation. Reliable at temperatures from -40°C to +70°C they are ideal for power automated equipment. A wide array of safety approvals ensures that the system stays powered and safe in a both ordinary and classified environments. The SDU-A protects critical controls and communications from damaging power disturbances and interruptions. The SDU-A is also able to inform the control system of power interruptions allowing the system to take action to minimize product loss and downtime. The SDU-A has a full suite of safety approvals allowing it to be easily specified and installed inside the control panel of the automation system.

Utility & Electrical

Utility & Electrical

With a focus on sustainability, brewers are seeking automation solutions to reduce utilities, energy and water consumption.

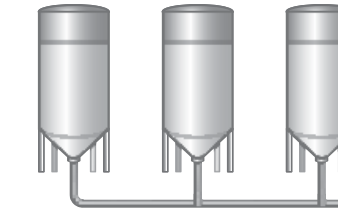


Utility Management Solutions

Utilize wired or wireless measurements of steam, water (cooling towers, recovery, treatment, reclaim and spent grains) utilities, fuel and gas flows throughout the brewery to establish a baseline to identify saving targets and achieve regulatory compliance. The solution can include multiple inputs for key sources:

Steam measurement, control and monitoring with **Rosemount 3051SF DP Flow Meters**, **Rosemount 708 Wireless Acoustic Transmitter with Plantweb Insight™ Steam Trap Application**, and the **Vanessa Triple Offset ZERO Leakage Valve**.

Water measurement, control and quality with **Rosemount 8750W Magnetic Flow Meter** as well as measuring water quality parameters for optimal process control, including pH, conductivity, low-level dissolved oxygen, and chlorine with the **Rosemount 1058 Dual-Channel Transmitter**.



CIP Solutions

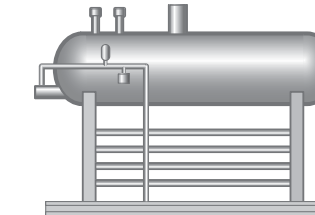
ASCO 290 Stainless Steel Valve is suitable for CIP fluid control in demanding conditions.

Micro Motion Fork Density Meter can be used in the blending and concentration control of caustic soda for fermenter cleaning.

Rosemount 225 Conductivity Sensor is ideal for monitoring the cleaning steps and final rinse with broad measurement ranges and sanitary designs.

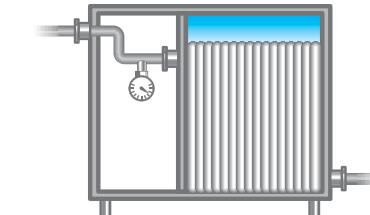
PACSystems edge controller helps automate CIP, resulting in cost reduction, increased safety, fewer recalls and higher equipment availability. Control the CIP Supply System automation with the **Keystone K-lok High Performance Butterfly Valve**.

Use the **Rosemount 1408 Non-Contacting Level Transmitter** for continuous measurement to control CIP tank levels. Add the **Rosemount 2120 Level Switch Vibrating Fork** to prevent overfills and dry-runs.



Ammonia Safety

Ammonia cooling systems are an important and dangerous part of brewing. Ammonia leaks through pressure relief valves must be carefully monitored to ensure the safety of personal working near these tanks. The **Rosemount 708 Wireless Acoustic Transmitter with Plantweb Insight Pressure Relief Device Application** can be used to detect pressure relief valve releases and notify personnel when and how long Ammonia has been released to atmosphere.



Cooling Optimization

The **ASCO Positioner** in which glycol can be proportionally added to conserve usage and monitor spool position to provide better flow control. This valve can be intelligently combined with the **AVENTICS G3 Integrated Electronics Platform** providing high-level precision in temperature regulation.



Electrical Solutions

Lighting is key to creating a comfortable and safe work environment. Achieving this can be complex due to unique work spaces, bad light color, shadows, glare, and inconsistent illumination. **Appleton Mercmaster LED** luminaires solutions can deliver a tailored lighting solution for any mounting height or level of illumination in demanding harsh and hazardous environments.

Featured Products For Utility & Electrical		
ASCO 290 Pressure Operated Piston Valve  The ASCO Valves 290 valve allows for the controlled introduction of glycol into the cooling system allowing for the gradual addition of glycol depending on the cooling needs and size of the batch. The Series 290 is available with motorized actuation if required and several optional features, including position indication and proportional control.	Rosemount 1408 Non-Contacting Level Transmitter  The Rosemount 1408 Level Transmitter provides continuous level measurement. Featuring Fast Sweep Technology that combines FMCW and smart algorithms that provide more information compared to legacy technologies, it provides accurate and reliable measurements through the whole tank to optimize tank utilization. It is virtually maintenance-free, unaffected by most process conditions and the fully welded all stainless steel design ensures protection against washdowns.	PACSystems CPL410 Edge Controller  Emerson's edge controllers use hypervisor technology to run real-time deterministic control applications concurrently with edge applications without impacting each other. This allows engineers to develop and run analysis applications next to the control process.
Rosemount Magnetic and Vortex Flow Meters  A full range of Rosemount Magnetic flow meters designed for general purpose, utility and process applications, including clean fluids, steam and utility water. In addition, a Vortex flow meter product range that is also designed for utility and process applications. Features include the Adaptive Digital Signal Processing (ADSP) to provide immunity from vibration causing unstable or false flow readings and the robust design enables the sensor to be replaced without down-time. Adding the wireless option, makes it ideal for hard to reach and remote installation locations, and provides simple integration with EtherNet/IP.		

Featured Products For Utility & Electrical	
Rosemount Conductivity Sensor  The Rosemount 225 Toroidal Conductivity Sensor is intended to be used in many Food and Beverage applications where a sanitary design is required. This sensor is ideal for measuring the concentration of CIP solutions, detecting product/water interfaces, checking product quality, and monitoring effluents in chromatographic separations.	Rosemount 708 Wireless Acoustic Transmitter with Plantweb Insight Steam Trap Application  This device featuring ultrasonic acoustic event detection that mounts externally, provides a cost-effective installation and allows visibility into steam traps and pressure relief valves by accurately communicating acoustic level and temperature data as well as device data. The application software analyzes the device data and identifies steam trap failures such as blow through, flooded, and plugged as well as trends on emissions and energy loss, in an easy-to-use, visual interface.
Rosemount 1058 Dual Channel Transmitter  Supports continuous measurement of liquid analysis inputs from one or two sensors. Each sensor channel is independently configurable to support a wide selection of digital or analog liquid analysis sensors.	Rosemount 3051SF Differential Pressure (DP) Flow Meters  The Rosemount 3051SF family of differential pressure flow meters offers an accurate and easy to install solution for utility measurement. Available with a Conditioning Orifice for limited straight run applications or Annubar™ primary element for low pressure loss, this flow meter family is ideal for the brewing industry.

Featured Products For Utility & Electrical

Keystone Figure 360/362 and 370/372 K-LOK High Performance Butterfly Valve



This unique two-piece shaft and double-offset disc/shaft design allows for high cycling and creates a lower disc profile with increased capacity and is ideal for CIP supply system.

Appleton Mercmaster LED



Appleton Mercmaster LED Low Profile Series Luminaires have a compact, lightweight, low-profile design suited for low mounting heights. Six standard mounting hood designs allow for mounting in any location and four different globe options, clear and diffused polycarbonate, clear glass, or prismatic glass refractor, enable customization to the application requirements.

Vanessa Triple Offset ZERO Leakage Valve



With a robust integral-to-body valve seat and optimized seating angles, this valve is capable of handling isolation and process control through multiple functionalities, and is suited for steam isolation.

ASCO 290 Angle Seat Valve



The ASCO 290 Stainless Steel Angle Seat Valve for Fluid Control is a rugged, high-flow valve providing up to 60% higher flow than competing designs and up to 5X longer life than conventional ball valves. Tolerating media such as hot water, acid, soda, and hydrogen peroxide, the 290 Series is capable in the most demanding CIP applications.

Rosemount 1208 Non-Contacting Level and Flow Transmitter



The Rosemount 1208 Non-Contacting Level and Flow Transmitter is a compact and robust transmitter that features an all-plastic design. With 80 GHz fast-sweep FMCW technologies, it offers reliable and accurate measurements without any dead zone. Additionally, the sensor is maintenance-free, easy-to-use and it communicates via Bluetooth®, 4-20 mA HART® or IO-link.



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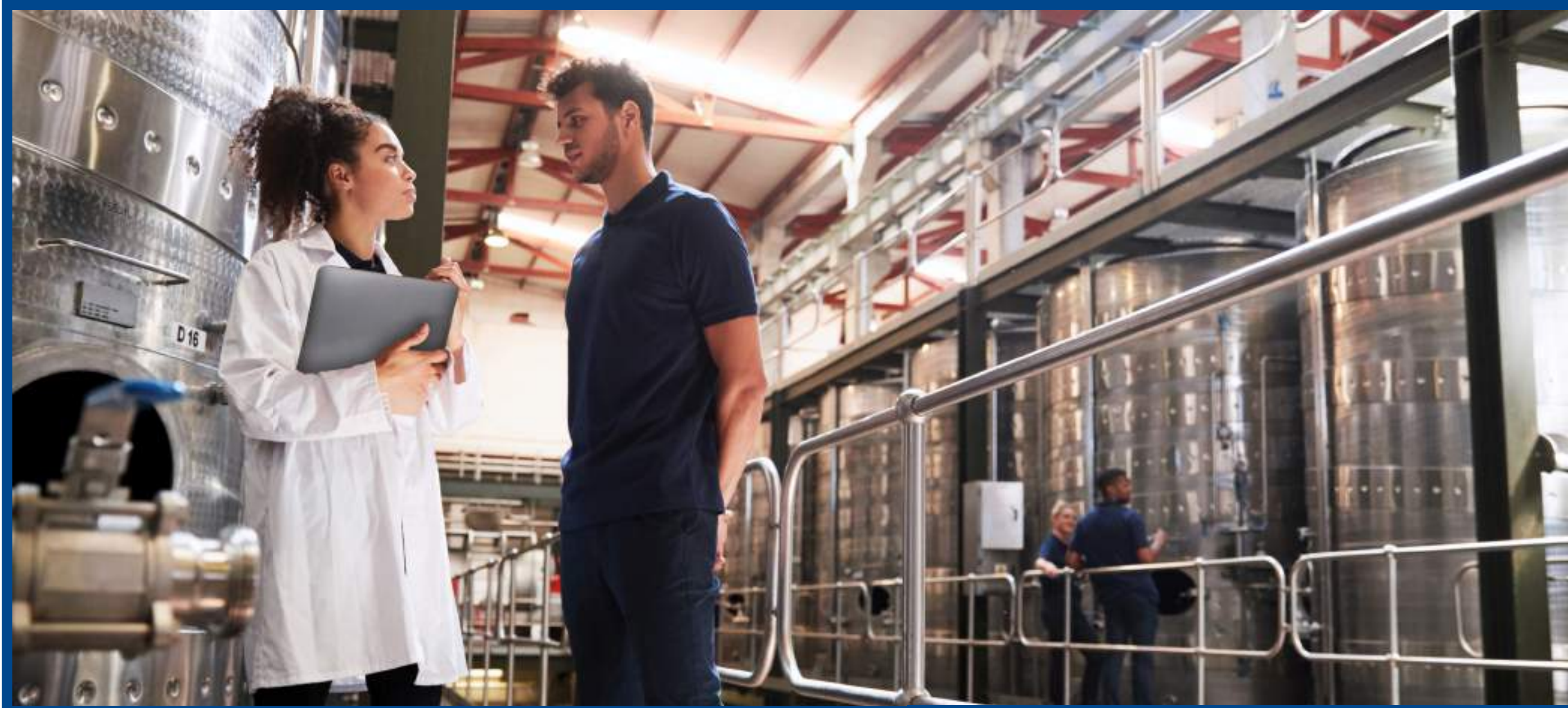
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