



SMART, SUSTAINABLE DAIRY & FOOD SOLUTIONS

HYGIENIC FOOD PRODUCTION
TECHNOLOGY YOU CAN RELY ON

foodandbeverage.pentair.com





MEET THE
INDUSTRY'S
CHALLENGES

YOUR PRODUCT SAFETY IS OUR MOTIVATION

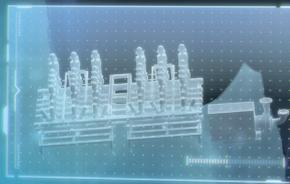
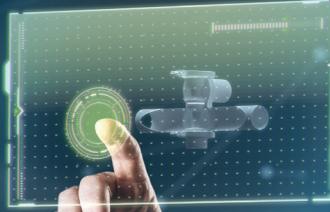
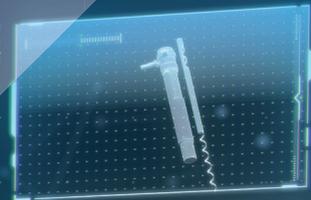
Increasing product diversity, compliance with strict regulations, and a sustainable need for cost competitiveness. Dairy and food processors are challenged every day to provide highest quality, tasty and safe products. Pentair helps you to meet these challenges with proven components, advanced process solutions and an outstanding service concept.

Your Product Safety is our Motivation – this is our dedication and our promise to dairy and food producers. Backed up by decades of experience in hygienic and aseptic components and engineering, Pentair helps our customers to create a highly efficient and advanced operation. Our integrated and sustainable solutions include proven valve technology and trusted hygienic components, standardized skid solutions for a wide range of applications as well as highly-efficient and robust membrane filtration technologies.

Pentair supports you all the way: From basic engineering, automation planning and development, through process integration up to lifecycle management, we are dedicated to assist you in achieving maximum process efficiency.

Responsible use of environmental resources such as energy sources and drinking water is a central driver behind Pentair's innovation. Our wastewater treatment and biogas production & upgrading solutions help dairy and food producers to reduce the footprint of their operation significantly, and turn waste streams into valuable products. Global excellence, local presence – No matter where your plant is located, Pentair's experienced team of product specialists and service engineers is ready to provide all the support you need. Explore our wide range of products and solutions, and feel free to get in touch with us with any questions you may have.





SMART,
SUSTAINABLE
SOLUTIONS

PROJECT ENGINEERING & PROCESS TECHNOLOGY

Our team of experts supports your project from A to Z. From basic engineering, automation planning and development, through process integration up to lifecycle management, Pentair's know-how assists you in achieving maximum process efficiency.

Whatever challenge you face, be it reorganizing your operation, expanding, modernizing, or installing completely new product lines, Pentair's dedicated team is ready to provide all the help you need. Our expertise covers project management, installation and process integration, commissioning, automation and electrical engineering services, as well as a wide range of after-sales service options.

Standardized Skid Mounted Solutions

Rely on Pentair's proven, tested and trusted standardized skid solutions that provide fast implementation, minimized space requirements and competitive Total Cost of Ownership. Their modular and compact design allows these systems to be installed as plug-and-play units and to be tailored to your specific requirements.

Excellence in Membrane Technology

Pentair has many years of experience and a proven track record in membrane filtration. For almost 25 years Pentair's cross-flow membrane filter lines and microfiltration membranes have been used for the filtration of beer, wines, cider and grape juice. Clients turn to Pentair for our water treatment membrane filtration technology that greatly reduces the environmental impact.

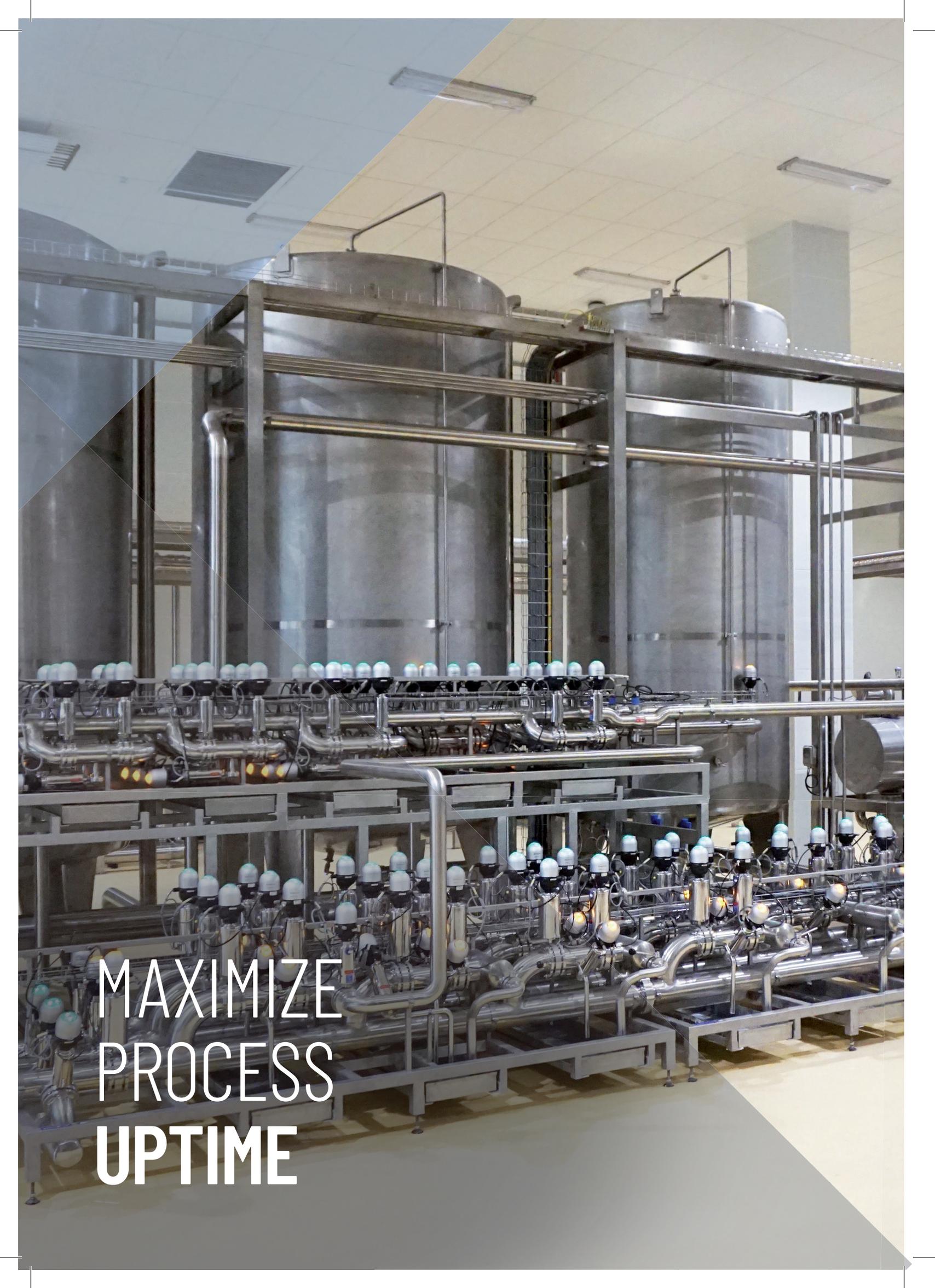
Get in touch with our product specialists to learn more about our wide range of standardized skid solutions for:

- Storage, distribution, mixing & dosing
- Valve manifolds & tank clusters
- Hygienic & aseptic designs
- CIP facilities & technologies
- Water treatment & recovery systems
- Biogas upgrading systems
- Services & life-cycle management including the integration into existing process control systems

REDUCING YOUR TOTAL COSTS OF OWNERSHIP

- Sustainable & state of the art process technology
- Focus on better economics and optimal utilization of resources
- Reliable plant operation through life cycle and service management
- One stop supply





MAXIMIZE
PROCESS
UPTIME

HYGIENIC & ASEPTIC COMPONENTS

At Pentair we are designing and manufacturing valves, filters and fittings and we are dedicated to provide our customers with the right component technology for each application.

As the need for safety and sustainability in the food and dairy markets increases, we continue to respond with advanced products and services. Whether working with a dairy plant that must meet strict regulations or developing a complete solution for an international food producer we have the solution that fits. Pentair Südmö has a leading portfolio of hygienic and aseptic process valves which enables us to deliver complete fluid

distribution solutions, like valve manifolds or tank clusters. Pentair's dead end microfiltration for gas and steam solutions offers an economical option to help processors prevent contamination, spoilage and product loss. The compact filter media saves on inventory space and provides a sustainable solution – less waste due to replacement of just the filter membrane.



MAXIMIZE YOUR PROCESS UPTIME THROUGH

- Innovative hygienic & aseptic design
- Lower wear and longer production cycles thanks to a durable design
- Optimum cleanability thanks to excellent surface quality
- Easy maintenance, fast spare part delivery and local support



**INCREASE
RESOURCE
EFFICIENCY**

WATER MANAGEMENT & BIOGAS UPGRADING

When it comes to reducing the environmental footprint of a dairy and food production plant, an efficient water management, the reduction of waste streams and renewable energy use are key.

Utilizing Every Drop

Clean, fresh water of a specified quality is required for each individual process in the dairy and food industry and therefore it needs special attention. When assessing and increasing the sustainability of a dairy and food production plant, two focus areas are the reduction of water usage and the carbon footprint. The expertise of Pentair in utilizing water and our wide range of membrane technologies provide the ideal solution for complete water management.

Pentair provides X-Flow membrane solutions for process water plants, delivering specified water qualities from multiple sources, which offers our customers maximum flexibility and safety. Biological systems such as Membrane Bioreactors (MBR) use membranes for separation of water from the active biomass. Our waste water treatment solutions based on our superb X-Flow capillary membranes for effluent polishing significantly reduce the energy

consumption compared to standard tubular membrane technology. Reuse of water maximizes utilization of this more and more valuable resource. Pentair's history in membrane development is one of continuous innovation, yielding competitive technology for producing potable water, for cleaning and recycling waste- and process water in the dairy and food sector.

Renewable Green Energy Source

Biogas is a key renewable energy source that provides an alternative, now and for the future.

Whey from dairies, process water and many vegetable, fruit and meat processing byproducts are valuable sources for biogas production. Various technologies, including sludge blanket reactors, stirred tank reactors and membranes are utilized to produce biogas and to improve the environmental footprint of a production site.

Biogas upgrading opens up various possibilities. Upgraded biomethane can be injected in the natural gas grid, making renewable energy storable, whereas biomethane as ultra-clean and sustainable transportation fuel (bio-CNG, bio-LNG) reduces the carbon footprint as well as nitrogen oxide (NOx) and particle emissions. Biomethane vehicle fleets (e.g. for milk collection) contribute to the circular economy. Pentair's multi-membrane system removes 99% of the carbon dioxide (CO₂) from the biogas and provides a cost efficient solution with minimum methane slip. When leveraging the appealing benefits of biomethane, Pentair's advanced membrane technology has substantial advantages compared to conventional systems.

LESS ENVIRONMENTAL IMPACT AND USING THE PROFITABLE SECOND VALUE STREAMS FOR

- Reducing costs for waste disposal
- Lowering water consumption
- Acquire appealing energy and profit sources
- Sustainable production





PREVENT
DOWNTIME
BEFORE IT HAPPENS

TAKING SERVICE TO THE NEXT LEVEL

When it comes to reducing the environmental footprint of a Operating a state-of-the-art dairy or food production plant requires just-in-time processes, minimized production losses and compliance with strict quality regulations. This is why it is so important to have precisely planned service intervals, trained service personnel and a reliable supply of original spare parts.

Our dedication to your system continues after the sale. Through comprehensive lifecycle management, Pentair ensures that your installation operates at optimal performance. Pentair's Service Level Agreements are offered worldwide. They include monitoring of the system via the Internet to help diagnose operational problems, a short engineer response time within 24 hours and faster access to system components. This keeps downtime to a minimum in case of emergency. Proper planning is key, and maintenance costs can be significantly reduced through accurately planned service intervals. Preventative maintenance helps to minimize

maintenance time and unscheduled downtime. All of this contributes to a lower Total Cost of Ownership (TCO). Pentair supports you in creating custom-made service plans that perfectly fit your requirements. In addition, Pentair offers plant audits that may relate to processes such as energy savings, increasing operational reliability or the expansion/upgrading of an existing installation. Audits can be carried out externally by means of a simulation or directly on-site. For operation and service personnel, Pentair offers classroom and hands-on trainings on specific projects. Do not hesitate to contact us for more details on our trainings program.

FOR A RELIABLE AND EFFICIENT OPERATION

- Maximum operation uptime
- Reduced maintenance costs
- Variety of service options to choose from



STRONG BRANDS FOR THE DAIRY & FOOD INDUSTRIES

Pentair® Südmo™

Pentair Südmo, located in Riesbürg, Germany, has more than 60 years experience in hygienic process equipment, and an extensive range of stainless steel sanitary and aseptic valves and fittings, complete manifolds and prefabricated units for the food, dairy, beverage, pharmaceutical, chemical, and cosmetic industries.

Pentair® Haffmans™

Pentair Haffmans, located in Venlo, The Netherlands, supplies quality control equipment, micro-filtration, and carbon dioxide (CO₂) recovery systems for the brewing, soft drink, wine, bioethanol, and biogas industries. Haffmans is a market leader in state-of-the-art technology and customized CO₂ recovery and management solutions.

Pentair® X-Flow™

Pentair X-Flow, located in Enschede, The Netherlands, develops filtration technology with the lowest total cost of ownership and the highest efficiency and helps equipment manufacturers, engineering and construction contractors to exceed expectations with membranes that make the difference, even in the most challenging conditions.

Pentair® Union Engineering

Pentair Union Engineering, located in Fredericia, Denmark, is a world-class engineering company providing sustainable technologies for capturing, recovering, and purifying CO₂. Union Engineering specializes in project execution, encompassing engineering, procurement, construction, and maintenance of individual or modular designed CO₂ plants.

MAKING A REAL DIFFERENCE FOR YOU

Insist on Pentair for smart, sustainable dairy & food solutions.

Visit foodandbeverage.pentair.com



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