

Sustainable solutions through process automation

Plant optimisation in the dairy industry for increased sustainability.

Since the 2016 release of the UN Sustainable Development Goals, the focus on corporate sustainability has increased significantly.

Demands from the dairy industry are ever increasing and sustainability in the solutions from suppliers is a focus-point getting more and more attention in the requirements. Process solutions today are strictly validated against KPI's when it comes to consumption per SKU on water, electricity, chemicals for cleaning etc.

This focus is, by coincidence, happening in the same period as new technologies and smart solutions are merging as part of the Industry 4.0 / Digitalisation wave. These new technologies offer a toolbox to help the efficiency of optimisation, operation and maintenance, all supporting sustainability targets in the solution. Objectives derived from this are e.g.:

- Big data analysis tools for trimming and optimisation of processes
- Data analysis tools for OEE calculations help to improve line efficiency
- Smart sensors and predictive maintenance tools, securing more production uptime
- Smart in-line analytical instruments for optimising on product tolerances
- CIP analysis "auto-tune" tools and applications, securing minimum usage of chemicals, water, cleaning time.
- Smart application software enabling e.g. hibernate functionality in the process equipment.

Au2mate has been involved in numerous projects taking advantage of the new technology and smart tools. Below are a few examples of solutions supporting the sustainability targets in today's process automation systems:

Data analytic and Artificial Intelligence tools (AI)

As part of centralised automation systems today a large amount of data is per default collected in databases holding historical information on every-

thing from sequence behaviour, alarms, process values etc. This vast amount of data can now via new software tools/algorithms be analysed and used for both optimisation and troubleshooting purposes all leading to improvements of processes.

OEE tool

Applying OEE on process and filling line equipment is today almost mandatory in new installations. The OEE tools provide a unique insight on plant performance and utilisation enabling the production management to trim and increase efficiency and production throughput.

At the same time track and trace and material consumption reporting back to the ERP system, saves a lot of manual labour time documenting the same in traditional log sheets.

Smart sensors and actuators

New generation of self-calibrating and self-monitoring sensors allow continuous/-uninterrupted operation, i.e. no need for production downtime for calibration purposes, and sensor will automatically notify in case of malfunction.

New generation of actuators/valves with built-in monitoring and self-diagnostic tools providing pre-



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warnings in case tolerances on travel time/movement are exceeded.

Plant optimisation by upgrade and standardisation

By upgrading old out-dated software on existing process plants, considerable savings can be achieved on consumption of e.g. water, electricity, and chemicals.

By applying improved methodologies in the application software, plant performance and utilisation can be improved even without changing anything in the mechanical configuration of the plant.

The application software takes advantage of latest technologies and is designed in accordance with ISA S88 / ISA S95 standards. The solutions are built for data collection and traceability through integration to the IT reporting system & ERP, enabling analytical measures for trouble shooting, search for bottle necks etc.

Au2mate has upgraded a large number of dairy plants applying full horizontal and vertical integration for efficient production planning, material release from warehouse etc. OEE was in more cases also applied at each line to optimise efficiency.

One of these has resulted in verified reductions in costs for electricity, steam and ice water by over 20%, plus costs for water and chemicals by over 30%. Additionally, the maintenance costs for the control system was reduced and its flexibility and integration possibilities increased.

The reduction in utility consumptions generated by such software upgrades benefits both the environment and ensure plant owners savings in the production cost. ●

5 quick facts about Au2mate A/S

- Founded in 2001 by Carsten G. Jensen and Klaus Dam.
- Has 115 employees at offices in Silkeborg, Dubai, the UK, Norway and Sweden, holding more than 800 man years of experience in dairy automation.
- Project-oriented, has delivered more than 1800 projects; PLC, SCADA, MIS/MES and ERP integration to dairies throughout the world, including Nordic countries, Europe, Middle East and Africa, America and Asia.
- Supplies solutions based on open standard platforms and internationally recognised methods for software development and project management.
- Offers training and education of operators and technical staff in our Au2mate Academy training centre and competent support via our 24/7 Hotline Support.



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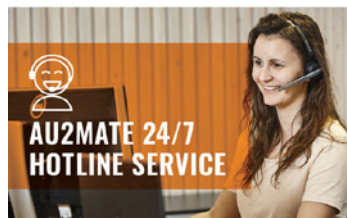
AU2MATE SUPPLIES TOTAL DAIRY AUTOMATION SOLUTIONS

Au2mate develops and delivers complete automation solutions with special focus on process optimisation and minimising waste, energy consumption, and carbon footprints.

Our solution designs emphasise a high level of user-friendliness, operational reliability, and optimal use of Industry 4.0 technologies to safeguard your investment.

We offer training programmes for both operating and technical staff at our training centre, Au2mate Academy, and competent support via our 24/7 Hotline.

Au2mate – your partner and provider of quality solutions and guarantor of the optimal performance of your process system.



**AU2MATE 24/7
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