
ABB Ability™ BeerMaker

Intelligent Process Control Solution for
Breweries



ABB Ability™ BeerMaker is a brewery-specific control solution to support safety and quality improvements in breweries, boost productivity, raise operational efficiency and lower greenhouse gas emissions.

Rising raw material cost like for barley or hops and higher energy prices are decreasing Return on investment (ROI) for beer makers. Therefore, breweries need to find ways to improve and optimize their processes, save water and energy and at the same time meeting increasing customer expectations regarding quality and variety of products. That's why breweries could benefit from using technologies that overcome these challenges.

ABB Ability™ BeerMaker leverages the rich domain experience and operational expertise of ABB's own brew master.

ABB Ability™ BeerMaker is based on the proven and ABB Ability™ System 800xA® control system. This technological package provides a suite of technology solutions including a library of ready-made and tested templates and objects that can easily be adapted for plant specific needs by making use of a variety of customizable parameters specifically designed to address all process areas and equipment of brewery industry.

Achieving a reduced total cost of ownership

Enriched with 800xA Batch* functionality following the S88 standard and Advanced Process Control (APC), ABB Ability Brewery library (part of ABB Ability™ BeerMaker) brings a high level of automation with built-in intelligence. Rich diagnostic functions, comprehensive CIP (Cleaning-in-Place) support, the ability to edit, update or validate recipes, and comprehensive coverage of the process areas are only a few to mention. In addition, with the digital twin support, the production process can be simulated and even be optimized before going to production. This also helps to reduce the time-to-market, reduce waste and optimize operational costs.

With easy to handle, intuitive operations, ABB Ability BeerMaker empowers operators to manage their preferred operating procedures for breweries or malting plants in a better way. ABB Ability Brewery Library provides comprehensive control and monitoring solutions for the (hot block) process areas of the brewery. These brew-house solutions cover areas such as raw material intake, storage and conversion of the raw material like malt, water, hops into wort.

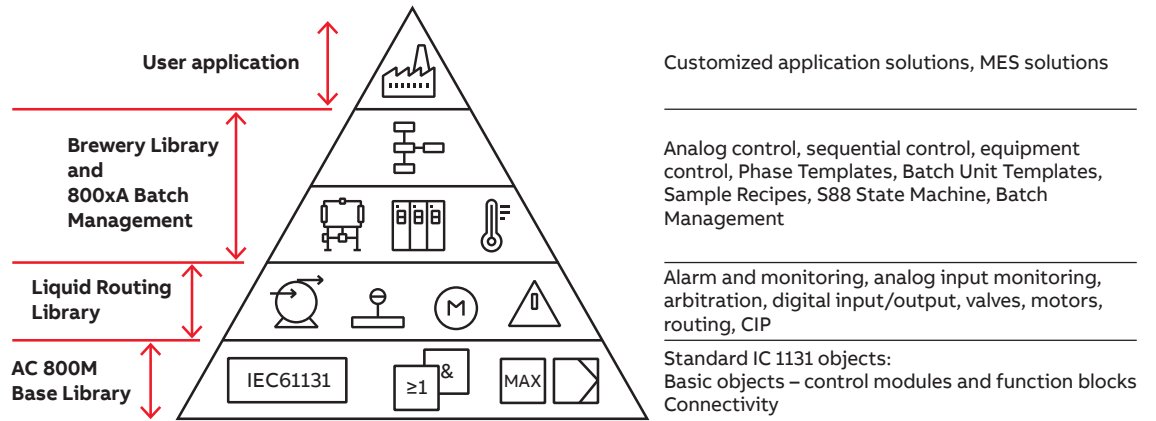


Connecting everything

The suite of technology solutions spans across Level 2 (process control) and Level 3 (manufacturing operations) layers and provides a horizontal and vertical integration solution for the Brewery industry.

Connectivity of plant processes supports breweries with respect to sustainable water and energy usage and can also drive effective digitalization. Brewing teams will be able to take better decisions at the right time using modern interfaces and intuitive insights.

Application Hierarchy for Brewery Library



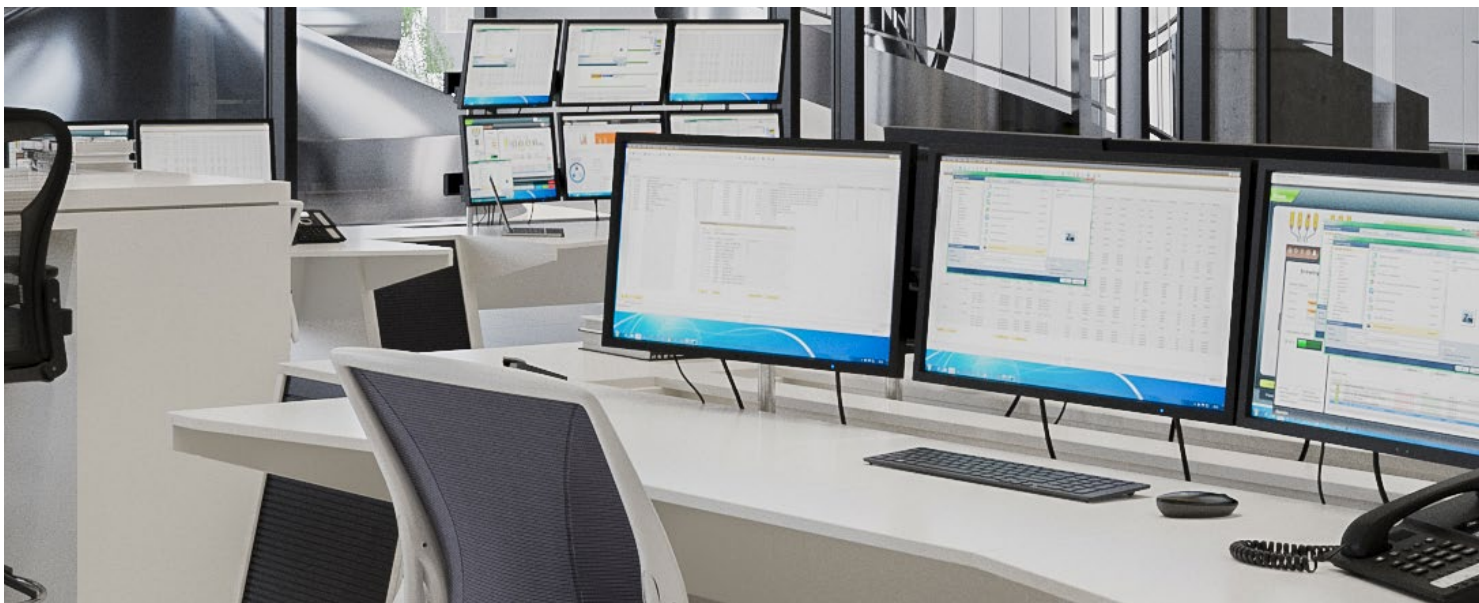
Intuitive insights and reporting

A digital factory solution provisioned by ABB Ability™ BeerMaker not only provides reporting, dashboarding and analytics solutions but also helps to improve processes and results, delivering best quality and giving room for craftsmanship.

Available reports and dashboards include:

- Daily reports
- Weekly reports
- Beer production reports
- Batch reports
- Anomaly detection through Batch Insight*
- Dashboarding solutions and Analytics through Manufacturing Operations Management*
- Scheduling Functions for e.g. campaign planning

* ABB Ability 800xA Batch, ABB Ability Manufacturing Operations Management, 800xA PR Batch History, Batch view, Batch Investigate, Batch Compare are products required to be purchased in addition to ABB Ability BeerMaker.



Features and benefits

- **Digital Twin/simulation**

The digital representation provides the ability to test recipes by providing support to optimize the recipes and batch parameters for better performance as per plant needs. The simulation provides a good learning ground to understand plant applications, easier root cause analysis and diagnostics, what-if analysis, quick commissioning at sites.

- **Flexible operations and reporting**

Control, monitoring, historian and batch are seamlessly integrated into a single operator workplace, standardized on the IEC high performance HMI standard.

- **Engineering efficiency**

Object-oriented, pre-tested and validated engineering templates include graphic elements and controller code. Any update to the library of elements is automatically deployed wherever used and also include a simulation.

- **Redundancy and online upgrade**

Full redundancy on all levels, from I/O modules to fieldbus communications, controllers, ethernet and core system servers, controller firmware and application software can be upgraded online.

- **Security, access control, audit trails**

Fully audited version control of all aspects of graphics, controller code and recipes is available. Full event logs and Audit trails are

configurable. An operator notes tool provides the ability to archive and search for key words in operator notes.

- **Batch applications providing convenience and operational flexibility**

Highly configurable batch recipes with a variety of programming options are available.

Integrating easily with upstream MES and ERP systems, both ABB Manufacturing Operations Management (MOM)* and 3rd party options are supported. ABB's MOM supports advanced batch analysis, golden batch comparison and OEE equipment performance.

Sample recipes available as part of library.

- **Advanced operations management and analysis support**

Easy access to batch production data with no training required to use. Data navigation is done using familiar PFC (Procedure Function Chart) displays.

- **Batch Insight* for extending analysis and monitoring capabilities**

Efficient and secured data transfer through 800xA History and Production Response (PR), Better insights about quality deviation, unexpected downtime and asset utilization using big data.

* ABB Ability 800xA Batch, ABB Ability Manufacturing Operations Management, 800xA PR Batch History, Batch view, Batch Investigate, Batch Compare are products required to be purchased in addition to ABB Ability BeerMaker.



Engineering

- Save 30-50% of engineering time
- Effective structured application design with object-oriented library
- Powerful pre-testing with built-in simulation



Maintenance

- The right information at the right place and the right time
- Extensive alarm, event, tracking and trending



Operations

- Reduce human error with high performance HMI
- Fast detection/resolution of process disturbance and consistent alarm messages

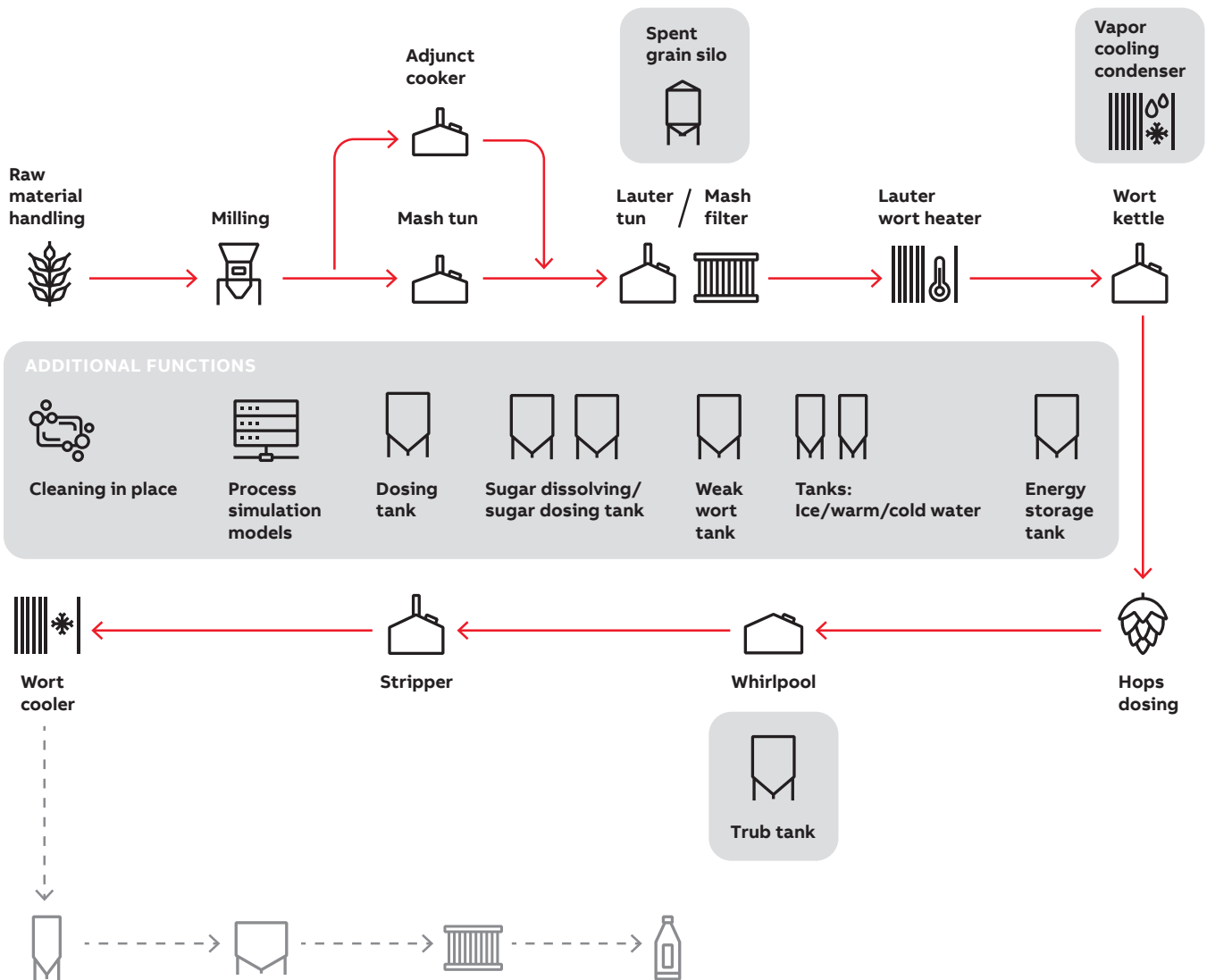


Life cycle

- Committed to long term support
- Clear and consistent product development roadmap

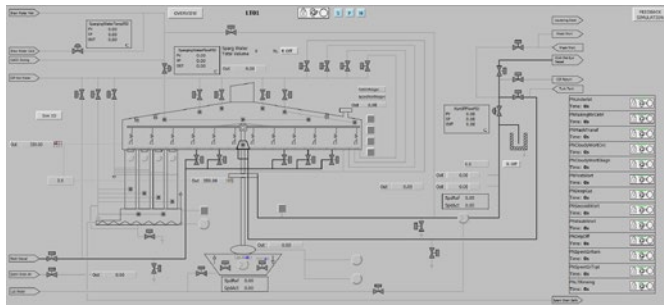
ABB Ability Brewery library for Hot Block

Provides the control and monitoring framework with ready to use customizable templates and with built-in functionalities such as process graphics, control dialogs, operator notes, reports, trends, alarms, events, and control configuration providing coverage for the process areas, some of which are depicted in figure below:

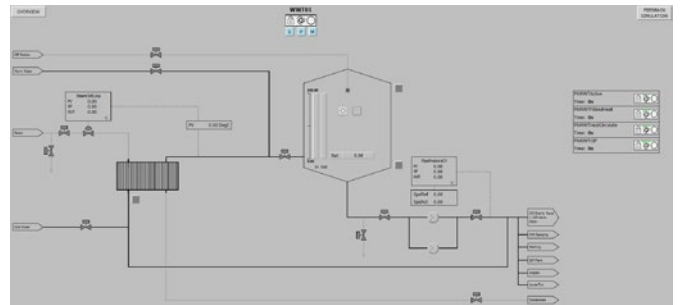


Snapshot examples of Process Control in Brewing

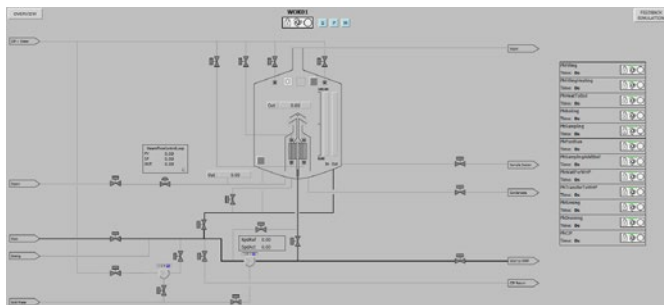
Object-oriented process control and domain expertise embedded in automation solutions for breweries: from lauter tun to wort cooler – digital twins for all process equipment in the brewery process. See some examples here:



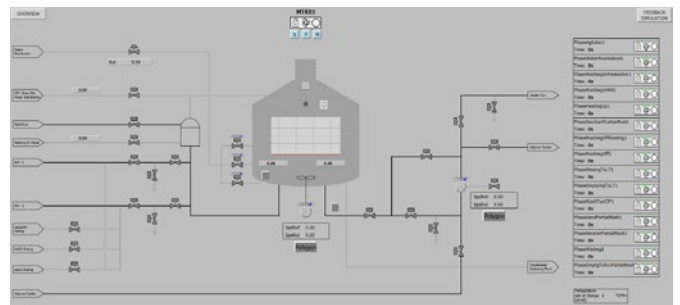
Lauter tun



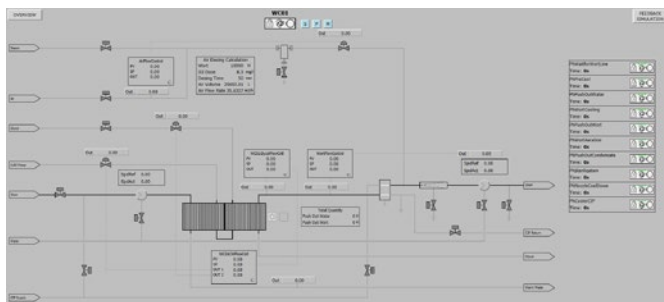
Warm water tank



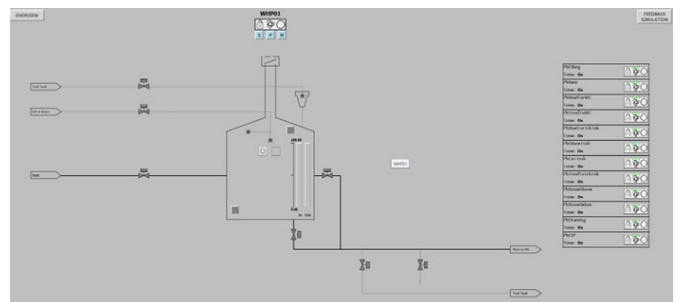
Wort kettle



Mash tun



Wort cooler



Whirlpool

Aligned towards future trends in brewing production

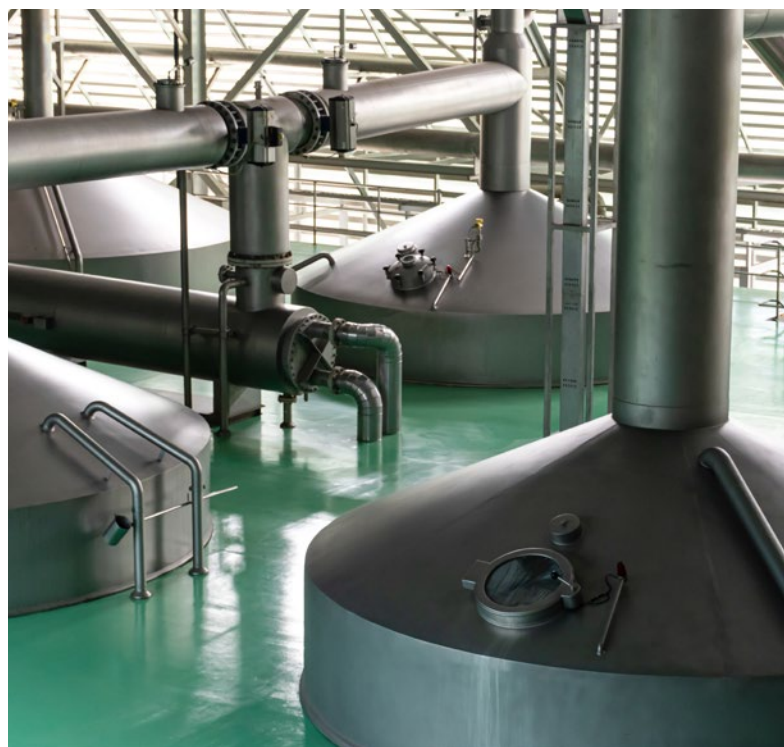
Designed by brew master for the brewing industry

With our flexible system, you can reach operational excellence, better yield and Return-on-Investment (ROI).

- Production with **automated processes** to reduce human errors
- **Reduction** of raw material, **intermediate** and **final goods losses** throughout supply chain
- **Flexible** processes and machinery to handle with all requirements like smaller batch sizes, multiple size products, and product variants with faster changeover times, continuous production lines
- **Integrated diagnostics** to track process and machine performance – uptime and downtime
- **Predictive/prescriptive maintenance** indicators to maximize uptime
- Enhanced **CIP capabilities** to reduce cross contamination
- Intuitive controls with **easy-to-use operator guidance**
- **Energy efficient** process and machines
- Improve delivery lead times, timely service
- Fully integrated production lines and business systems
- **Digitalization** as a driver for new technology and as well **increase in productivity**
- Improve environmental impact like water usage, CO2 footprint, etc.

Why ABB Ability™ BeerMaker?

The ABB Ability™ BeerMaker intelligent process control solution supports not only safety but also quality improvements while boosting productivity, increasing process reliability and raise operational efficiency. Making performance and energy improvements today helps you reach your sustainability targets for a better future tomorrow with a reduced total cost of ownership.





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<https://campaign.abb.com/beermaker>

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