

# Automation Solutions for the Bioethanol Production

For the highest productivity and operational safety



**ABB**



# ABB – An Expert Partner for Plant Operators and EPC's

*Bioethanol plants are frequently constructed under great time pressure. This is only possible with an experienced partner who operates globally and locally. A rapid production start and the highest plant efficiency reduce the Total Cost of Ownership.*

## Stay competitive

We know the requirements of our customers, which are caused by tough competition: Shortened time periods for planning, construction and commissioning of new plants, cost-saving and operational productivity increase over the entire life cycle.

The support of an experienced partner such as ABB is required to remain competitive, since we not only offer solutions based on advanced technology with provision for future extension but also have the corresponding competence in solving problems for project management and service provisions, even to assuming the responsibility for operating and supervising the plant, if required.

## Experience and know-how

Innovative automation and power engineering from ABB provides smooth operation in a large number of biofuel plants.

As market leader in the automation sector, ABB has decades of experience and process control know-how in the chemical industry at its disposal and has experience in the management of international large-scale projects.

## Think globally, act locally

Projects for bioethanol plants are often managed multi-nationally. ABB is present throughout the world with a large number of service and support locations. The best precondition for smooth global project management and local support for internationally operating companies.

- Globally operating team of professionals
- Standardized engineering tools, methods and solutions
- ABB solutions are internationally reproducible
- Support and service – worldwide

## Shorten the Time to Market – reduce the risk

- Efficient and professional project management
- Use of standardized, pre-configured packages and libraries
- Cost-saving through pre-installed automation equipment
- Conventional wiring, remote I/O or use of fieldbus technology
- Future-proofing and investment protection through innovative technology and life-cycle concepts

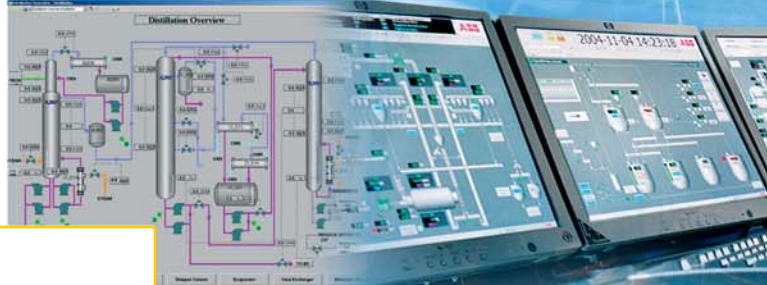
## Strategic partnerships

Customer requirements can be implemented even better within the framework of partnership contracts with plant operators, EPC's or package unit suppliers. The objectives are the simplification of the purchase and delivery transactions and a reduction in the points of intersection.

In conjunction with our partners, we prepare solutions which contribute to the standardization and optimization of the project management.







*Standardized solutions based on advanced technology provide consistently systemwide automation and communication. The basis for the highest productivity, the best possible return on investment, future-proofing and investment protection.*

### Bioethanol – renewable fuel

Bioethanol, a high octane, anhydrous alcohol, is mainly used as a fuel, but also for pharmaceutical and cosmetic products, solvents and in the manufacture of beverages. Bioethanol is produced by fermenting sugar- and starch-containing plants. Depending on regional availability raw materials are e.g. cereals, maize, sugar beet, sugar cane or cellulose.

### Tailor-made automation solutions

We offer an extensive portfolio of products and systems tailored to customer requirements, as well as pre-configured solutions for automation and safe operation in all areas of the production process such as:

- Pre-treatment, mashing of the biomass
- Fermentation
- Distillation
- Drying of fermentation residues e.g. for use as animal feed
- Handling and processing of by-products
- Storage of the raw materials and end products

### Advanced, future-oriented technology

The core is the 800xA Extended Automation System, which seamlessly connects all the equipment and applications in real-time thanks to a unique object-oriented architecture, thereby enabling continuity from the field to production right through to the business management level. 800xA offers a standardized operating and engineering environment for all automation functions. Solutions for production management, such as SAP integration or asset management, energy or transport and loading management, are available for the optimization of process sequences. Fieldbus-based process instrumentation, analyzer technology as well as power distribution and Motor Control Center complete the spectrum.

### The highest productivity and reliability with System 800xA

- Operationally safe and high availability
- Effective operation and monitoring of the entire plant
- Existing systems and package units can be integrated
- Environmental and safety standards are complied with
- Safety-related functions are integrated
- Open for future requirements and enabled for capacity extensions

# Chemical Bioethanol

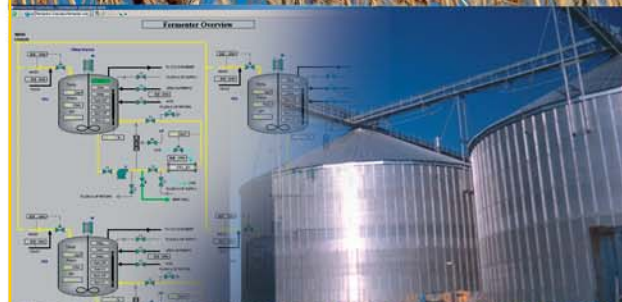
### ABB is your Partner

No matter whether it concerns the construction of new bioethanol plants or an increase in capacity: plant operators, EPC's or package unit suppliers can rely on ABB as a dependable partner with industrial expertise and excellent designs.

### ABB stands for:

- Expertise and experience
- Tailor-made solutions
- Advanced, future-oriented technology
- International references

**For further information  
please contact us!**





# An Overview of Our Solutions and Products for Bioethanol

## Extended Automation System 800xA

- Scalable
- Object-oriented open software structure
- Aspect Object technology
- Integration of subsystems and package units
- Uniform engineering from the field instrument to the operator interface
- Standardized bioethanol libraries and pre-configured blocks
- Maintenance and diagnosis
- Redundancy
- Conventional I/O, remote I/O or fieldbus solutions, incl. applications for explosion protection requirements
- Device management
- Integrated safety-related functions

## Effective engineering

Configuration and commissioning of software and hardware by means of central multi-engineering tool:

- Integrated fieldbus management
- Configuration languages to IEC 61131-3

## Central monitoring and operation

- User-friendly operator interface
- Overview, graphic and group displays
- Faceplates for operation and operator intervention
- Alarm and event displays
- Trend history and displays
- Logs
- Diagnosis of the overall system
- Definable user rights/user groups

## Intelligent field instruments

Extensive range of field instruments for every measuring task:

- Stainless steel and explosion-proof versions
- Fieldbus-capable
- Integrated maintenance management

## Solutions for the business management level

- SAP integration
- Performance monitoring
- Asset management
- Energy management
- Transport and loading management

## ABB analyzers

- pH and conductivity measurement
- Ethanol quality measurement

## Electric drives and motors

- All performance classes and explosion-proof versions
- Frequency converters and soft starters

## Power distribution

- Gas/air-insulated medium-voltage switchgear
- Transformers
- Low voltage main distribution boards
- Motor Control Center (MCC)

## Services

- Project-specific hardware engineering for process control and electrical installations
- User-specific software applications
- Project management
- Erection, installation, commissioning
- Documentation, training
- On-site and on-call services
- Repairs, spare part logistics
- Plant optimization and maintenance strategies
- Operation and supervision of plants



## ABB Automation GmbH

Chemicals  
Stierstädter Straße 5  
60488 Frankfurt  
Germany  
Telephone: +49 69 7930 4142  
Telefax: +49 69 7930 4128  
[www.abb.com/chemicals](http://www.abb.com/chemicals)