



Precisely the result you were looking for.

**BMA Automation: Your specialist partner for automation solutions**

BMA Automation develops, builds and installs automation solutions for individual machines as well as whole factories. As a company of the BMA Group, we can offer our customers both extensive automation expertise and in-depth knowledge of the sugar sector – a combination that is unique in the industry.

**BMA – Passion for Progress**

For machinery, individual process steps or entire factories – whenever it comes to the industrial-scale production and refining of sugar, crystalline fructose and dextrose, BMA has been your contact for over 160 years.

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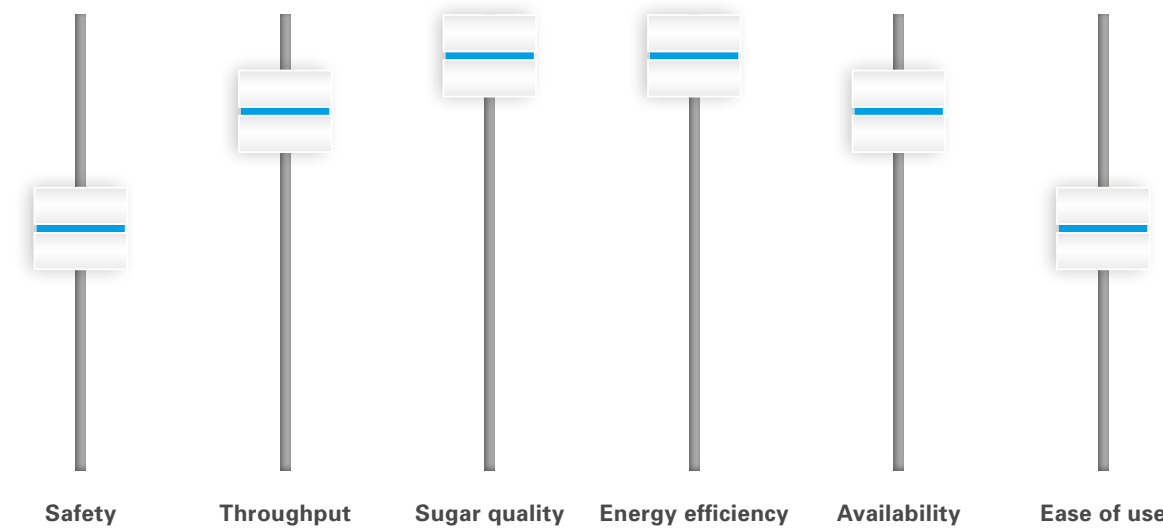
[www.bma-worldwide.com](http://www.bma-worldwide.com)



Getting up to speed.

Retrofitting of batch centrifugals  
by BMA Automation.

# Getting the most out of it. Accommodate your requirements individually.



## Retrofitting your centrifugals – all benefits at a glance

- Short payback period thanks to a wide range of performance improvements
- One-stop procurement of switchgear, automation equipment, drive technology and commissioning
- Manufacture in compliance with EN/CE regulations, but also UL/CSA standard if requested
- Option for integration with modern control systems
- Global service network

### Top performance and efficiency levels

The replacement of open-loop and closed-loop control system components and drive components represents an economical solution for the optimisation of centrifugals that is easily implemented. It allows you not only to increase the performance and sugar throughput considerably, but also helps reduce the energy required per ton of sugar. We will enhance the reliability and availability of your centrifugal with the use of tried-and-tested control concepts and components.

### Consistent sugar quality

Quality indicators like the colour value can only be ensured if the values are consistently reproducible. A downstream online colour measurement in the sugar conveying path or the non-contact measurement of the layer thickness are two examples of how an upgrade by BMA Automation can improve the quality of your production. In future, this will enable you to control your processes based on precisely measured values.

### Current safety standards

It is your duty as a plant operator to ensure the operational reliability of your plant and work safety for your staff. We will take care that all safety-relevant functions of your plant comply with current requirements of the Machinery Directive. For vibration and oscillation monitoring as well as for emergency-stop functions, we install safe and redundant components, so that you have everything safely under control.

Our centrifugal retrofit service will optimise the control and drive technology of your batch centrifugal. Depending on the type of the plant you have and your specific selection of upgrade components, considerable improvements can be achieved with regard to efficiency, quality, safety, and user guidance. As an optional extra, we can also integrate your machine with modern control and process control systems. Our upgrades have been specially developed for BMA centrifugals, but we will gladly optimise machines from other manufacturers as well, if you wish.

The BMA Group will also be your partner when it comes to implementing additional mechanical and electrical optimisation measures.

### Advanced upgrade components

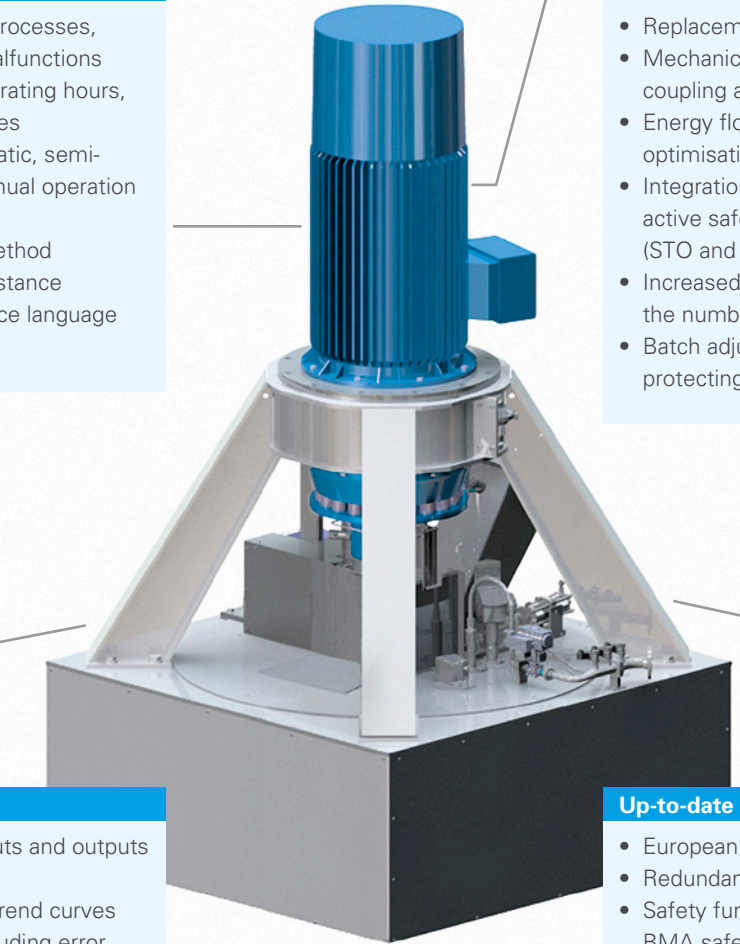
- Optimised process sequences (filling, water washing, cleaning)
- Individual interlock to the process sequence
- Flexibly configurable integration with a distributed control system
- Administration of technological parameters
- Failsafe control as per Machinery Directive
- Compatible with different drive systems
- Easy to use

### Intuitive operation

- Visualisation of processes, functions and malfunctions
- Counters for operating hours, shifts, and batches
- Choice of automatic, semi-automatic or manual operation at any time
- Intuitive input method
- Simple user assistance
- Choice of interface language

### Multi-dimensionally compatible

- Replacement of drive packages
- Mechanical adaptation of coupling and flange
- Energy flow/power supply optimisation
- Integration of converter as active safety component (STO and SS1 function)
- Increased acceleration to raise the number of batches per hour
- Batch adjustment for material-protecting mode of operation



### Centrifugal 4.0

- Diagnosis of inputs and outputs
- Trend monitoring
- Process data in trend curves
- Data logging including error history
- Selection of diverse recipe programmes

### Up-to-date safety

- European safety standards
- Redundant sensors/actuators
- Safety functions based on BMA safety matrix
- Execution as per EN 13849-1

### Optimised layer thickness

- Non-contact measurement
- Optimised throughput
- More consistent charging up to the layer thickness
- Reduced water consumption and low sugar losses

### Consistent quality

- Wash water control as a function of colour value and layer thickness
- Water washing can be individually reduced
- Maximum preservation of crystals with fixed colour value

### For parallel operation

- Controlled interlocking sequences and sequencing in groups for a maximum of six centrifugals
- Load-optimised and batch-optimised operation
- Saving of the optimal operating points in both modes of operation