

Innovative, efficient and environmentally friendly Müller Produktions GmbH

## Green Factory 2.0: Focus on energy



*Picture of the power station at Müller Produktions GmbH in Ungerhausen near Memmingen (DE)*

Over a 45-year period, the Alois Müller Corporate Group has developed from a family business to a company with around 350 employees. The company is regarded as a specialist in system engineering, energy and building technology (heating, ventilation, sanitation and air conditioning). It demonstrated its comprehensive know-how in various projects, including the new construction of the Allianz Arena in Munich. Its own flagship project is the Green Factory 2.0 in Ungerhausen (DE). With a total area of 18,000 m<sup>2</sup>, it is the world's largest virtually energy self-sufficient green factory. Sustainable and energy-efficient production is also the focus at Belimo Automation AG. With the new generation of butterfly valves and the PR and PRK butterfly valve actuators with emergency control function (SuperCap), Müller has found a solution to achieve its targets.



# Sustainability paired with state-of-the-art technology

<b>Building type</b>	Production
<b>Project type</b>	New building
<b>Trade</b>	HVAC
<b>Products</b>	2 retrofit butterfly valve actuators (PRK) with Super-Cap and 2 butterfly valve-actuator combinations from Belimo

## Green Factory 2.0: imposing dimensions in size and sustainability

Alois Müller is equally famous for tradition and innovation. The family-owned company in Ungerhausen in Unterallgäu demonstrates this with the Green Factory 2.0, the world's largest virtually energy self-sufficient production and office building. The company's approximately 4,000 m<sup>2</sup>- Green Factory, which has been in existence since 2012, will be expanded by a further 10,000 m<sup>2</sup> of production and storage space. 90% of the energy required to supply the entire

Green Factory with electricity, cooling, heat and compressed air is provided by regenerative solar energy through a 1.1 MW photovoltaic system. The remaining 10% is covered by a cogeneration plant. The energy costs and CO<sub>2</sub> emissions thus drop to practically zero. Once the new factory is completed in Spring 2018, it will mainly be used for the production of energy module systems and supply technology components for plant construction such as steel and stainless steel piping systems.

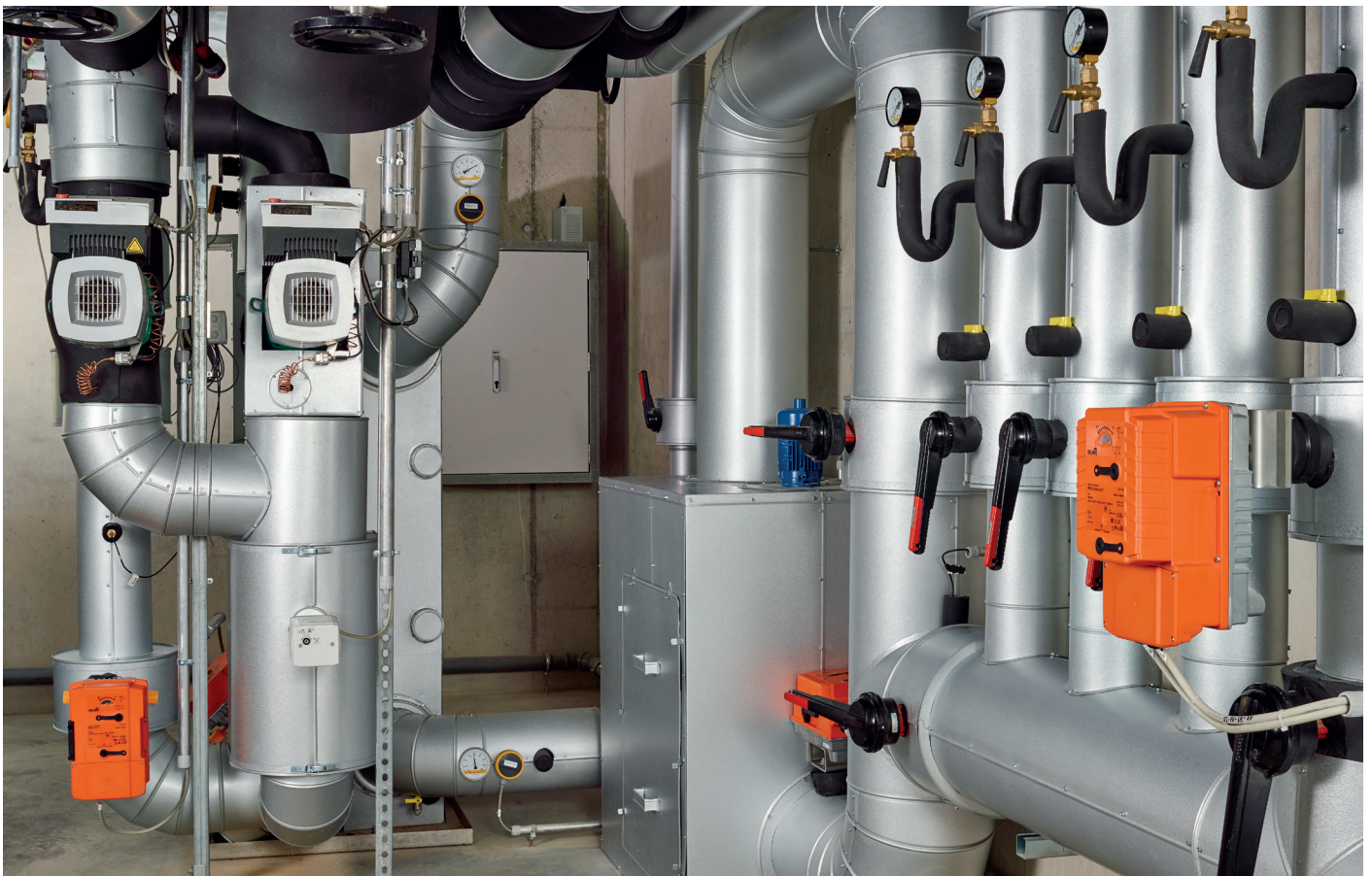
## Müller exemplifies a sustainable, resource-saving production environment

The degree of prefabrication has already been increased with the Green Factory, which led to improved process reliability and offers customers higher quality. With the new factory, Müller would also like to show the industry how a sustainable and resource-saving production environment can actually be implemented in everyday

practice. At the same time, the Müller Group can present itself as an innovative employer with the Green Factory 2.0.

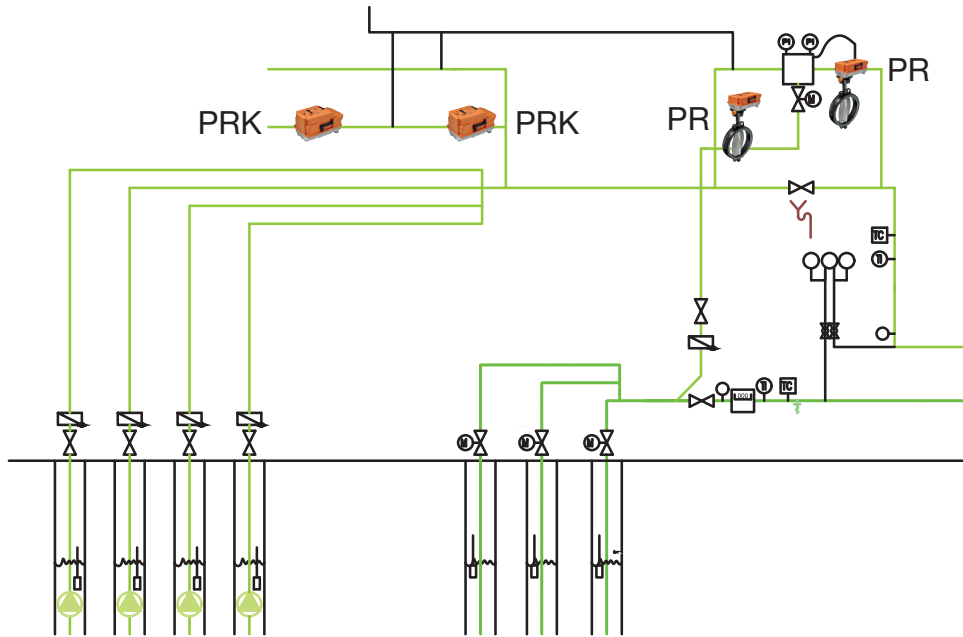
## The centrepiece is the ingenious energy management system

The centrepiece of the Green Factory is the new power station. It is from there that the entire energy management system of the plant in Ungerhausen is controlled. The system was developed by e-con AG, a subsidiary of the Müller Group. An intelligent power network continuously monitors electricity consumption and controls the switch-on times of the system in order to avoid peak loads. Excess energy is stored in order to ensure that the plant and equipment are reliably supplied with uninterrupted energy. Generated electricity which is not required in the Green Factory, flows into the general power grid, supplying other companies in the vicinity with electricity.



Lower left: Supply of cooling to the building via open-close control of the new generation of a butterfly valve actuator combination. Right: Change-over application for cooling and fire-extinguishing operation fed by well water and powered by a retrofit butterfly valve actuator with emergency control function (SuperCap).

# Flexibility, reliability and customer focus



## Butterfly valve actuators from Belimo guarantee reliability

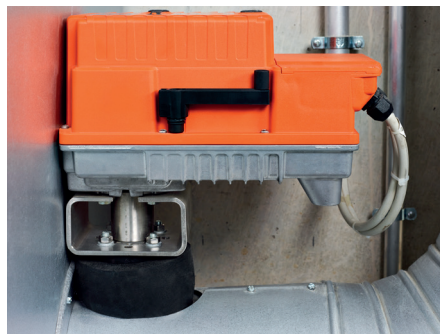
To ensure optimum control, the e-con AG energy management system for the energy flow in the Green Factory requires components it can rely on. Müller Produktions GmbH has found an excellent partner in Belimo for cooling supply to the factory. Thus, for example, two butterfly valve actuator combinations with open-close control were installed by Belimo in the cooling circuit for switching between heating and cooling. They are controlled by open-close actuators.



## Retrofit actuator with emergency control function

A particular challenge was to supply the Green Factory using well water. This is more aggressive than stationary water in cooling and heating systems, which is why the materials used have to meet corresponding criteria. The only valves certified for well water are provided by KSB AG. Since the new butterfly valve actuator from Belimo moves into a predefined position

even in the event of power failure thanks to its SuperCap option and can be parameterised quickly and easily per Near-Field Communication (NFC), the company opted for a retrofit solution from Belimo. Like all Belimo actuators, the compact PRK actuator is of universal design and fits onto butterfly valves from different manufacturers using simple adapters.



"Using the new PRK actuator with SuperCap from Belimo was no risk for us. "Products from Belimo convince with reliability", comments Darko Zanic, Project Head for Instrumentation and Control Systems at E-con AG, and adds: "Something can always go wrong with new products, but then I expect a rapid solution to be forthcoming, and that is what Belimo provided." Two PRK actuators were installed in the system which can be switched between normal cooling operation and fire extinguishing operation in case of fire. Should a power failure occur, one of the PRK actuators moves into the emergency

setting position "Close" (normal cooling operation) while the other PRK actuator moves into the desired "Open" position in order to make the well water available to the fire hydrants. This is where reliability is an absolute must.

## Added value for the customer is of the highest priority for Belimo

Müller Produktions GmbH is already using products from Belimo in other applications as well. In the search for a suitable actuator for the KSB butterfly valves, it was the price-performance ratio and the short delivery distances and times that were the decisive factors. Belimo was able to meet the requirements and supplied all of the products needed. "In the first delivery, the retrofit linkage did not fit on the butterfly valves. "Within a few days, however, the Product Manager and a Technical Supporter travelled from Hinwil to Ungerhausen and quickly found a solution", reports Darko Zanic and continues: "That is what makes Belimo what it is".





## The butterfly valve-actuator combinations from Belimo are flexible in application

The new innovative Belimo generation with butterfly valves and suitable actuators has already been successfully installed in numerous applications worldwide. The production at Kuhn Champignon AG in Full-Reuenthal (CH) is one of these applications. Two butterfly valves and PR actuators were mounted there to ensure a year-round autumn climate for mushroom production. This combination fulfils the task within the plant of transporting heat out of the system. This means that the heated water will be pumped into the ground water for cooling again. This occurs daily, depending on the season.

*"Belimo always brings new and innovative products to the market such as the new PR actuator".*

Another application is SwissCo Services AG in Sisseln (CH). This pharmaceutical company specialises in the manufacture and packaging of moisture-sensitive solid dosage forms, e.g. effervescent tablets. In order to guarantee optimum production, the temperature and the humidity in the production rooms must always be the same. That is why two butterfly valves with PR actuators were installed in the new refrigeration machine. Thanks to the integrated BACnet® MS/TP interface, plant operators and plant installers can access the PR actuators via web access and thereby obtain information on ongoing operations at the plant. Two passive temperature sensors have also been connected to the communicative PR actuators so that precise measurement data can be transferred.

Belimo worldwide: [www.belimo.com](http://www.belimo.com)



5-year warranty



On site around the globe



Complete product range



Tested quality



Short delivery times

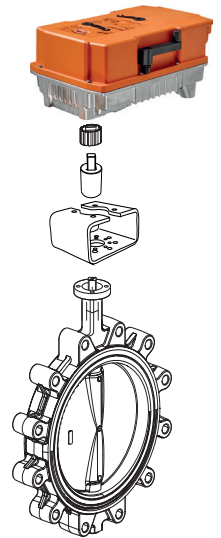


Comprehensive support

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## Effortless upgrades with retrofit solutions from Belimo

The reasons why a plant needs to be retrofitted or modernised are varied. Often it is a question of prolonging the service life of a plant, or rather enhancing its quality and efficiency. Sooner or later for that reason, components will need to be replaced. The universal butterfly valve actuators from Belimo are eminently suitable for enabling the desired modernisation and a maximum amount of automation in an existing plant. With the help of simple adapters, the retrofit linkage from Belimo, allows the actuators to be mounted without difficulty on installed butterfly valves from a variety of manufacturers. The Retrofit App was developed for Android and iOS and can be downloaded easily on Google Play and the App Store.



## Thanks to SuperCap: High level safety, even during power failure

The butterfly valve actuator from Belimo is available in three versions: As classic open-close actuator or as communication-ready PR actuator, as well as the SuperCap actuator PRK. The PRK actuator is suitable for safety solutions because it guarantees reliable operation, even in the event of power failure, and depending on the parameterisation moves to the desired position. This means that the emergency setting position is adjustable from 0...100%. Furthermore, the PRK actuator has the following control options: open-close, 3-point, DC 0.5...10 V, DC 2...10 V and 4...20 mA. Additionally, it offers flexible bus interfaces with BACnet® MS/TP, Modbus RTU and MP-Bus.



With the Belimo Assistant App, the adjustment of the electrical emergency settings can be simply defined. Furthermore, the actuator can be put into operation without difficulty using the App and its functional capability can be displayed at any time in the diagnostics mode. These and other Apps from Belimo are available for download in the App Store and at Google Play.

**BELIMO**<sup>®</sup>