

Standardised automation in blood plasma fractionation

Setting standards

Blood plasma is an indispensable resource in the production of life-saving medicines. It is in high demand on global markets. To make more efficient use of this valuable commodity, Biotest AG developed a new large-scale plant for plasma fractionation, with which it is possible to obtain five instead of the previous three products from a litre of blood plasma. Standardised components from Festo simplify installation and maintenance.



Standardised automation from Festo simplifies installation and maintenance in the large scale plant of Biotest AG.



Simplifies maintenance: the control cabinets from Festo were already defined as the standard in the planning phase.

Blood plasma contains more than 120 valuable proteins. These include clotting factors, blood substitutes and immunoglobulins, which can strengthen the immune system of patients after an organ transplant, for example. In order to be able to make the best possible use of this valuable raw material, companies like Biotest AG are investing in research and innovative manufacturing methods. The investment is paying off, as the number of medical products that can be obtained from a litre of blood plasma has increased from three to five. It is also contributing to a lasting increase in productivity, as more than 50 per cent of the production costs are incurred in buying plasma. More efficient methods ensure optimal processing of the various products obtained from blood plasma. In Biotest's new production plant, 6,000 valves and 250 standardised control cabinets from Festo simplify the construction of the plants as well as the subsequent maintenance and deliver a long-term reduction in maintenance costs.

Lasting effect of standardisation

Standardisation in the construction of the new Biotest plant for blood plasma fractionation offers benefits for both the company and the plant engineers. Plant engineers can purchase predefined components quickly and easily and get access to favourable terms thanks to a defined component pool, while for Biotest the overall cost for spare parts supply is reduced. Other benefits include a reduced training



Werner Gödel, Head of EMSR Technology Department, Biotest AG

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requirement for maintenance and service staff, shorter downtimes as well as reduced maintenance workload in the event of a fault. It also means lower documentation and supply management costs.

Increased capacity and efficiency

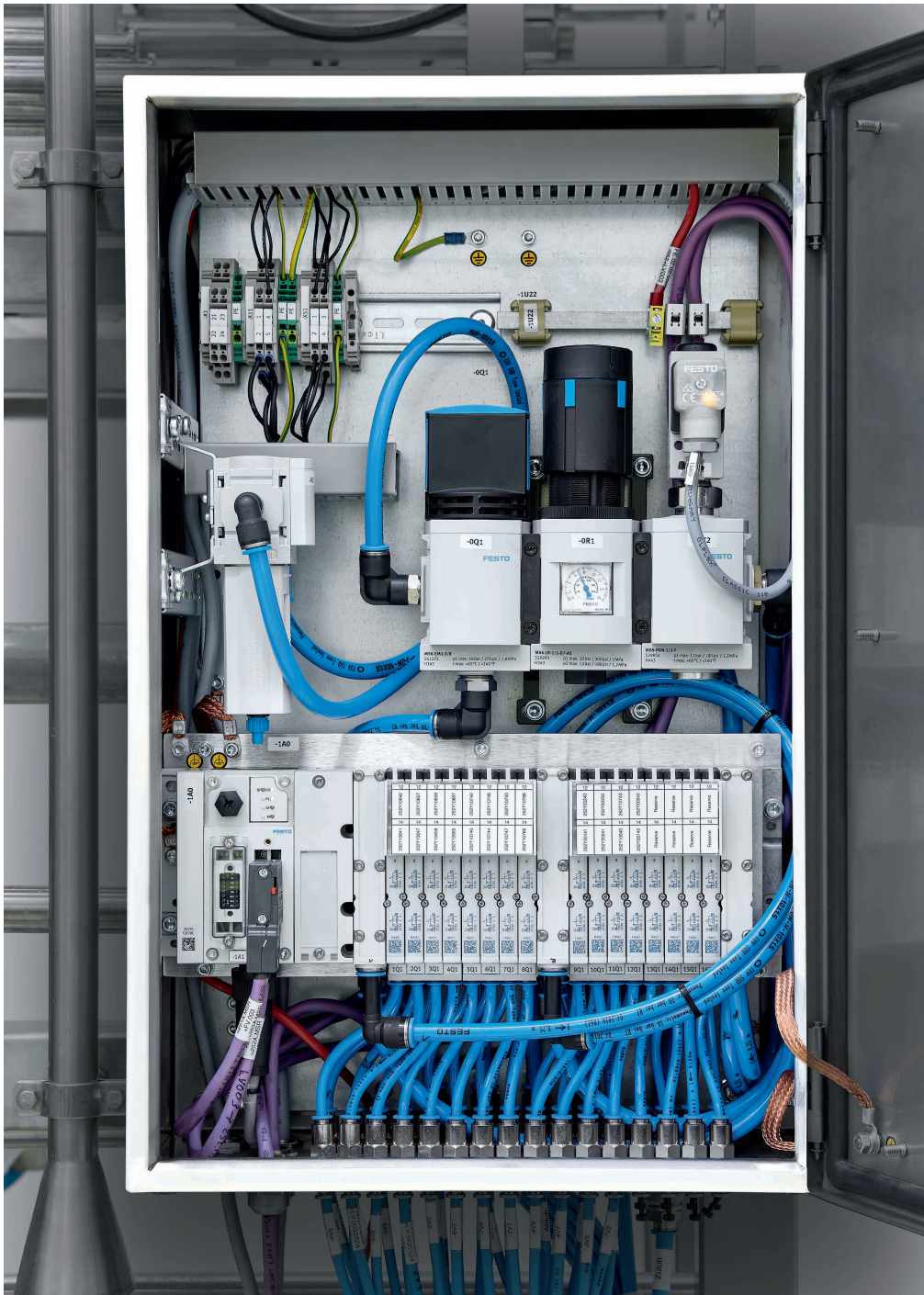
“When it came to the construction of the new building with the modern large-scale plant for blood plasma fractionation, there were two main aspects to consider,” explains Matthias Mahle, Head of Technical Project Management BNL at Biotest. “The first was expansion of capacity beyond the performance limits of the existing plants, and the other was efficiency. As a pharmaceutical company working in blood plasma processing, we are competing in a globally consolidating market. We are strengthening our market position by obtaining more products from the same amount of plasma,” says Mahle. In the new plant, Biotest will be able to manufacture a greater number of products as well as increase the yield and its purity. “With the existing systems, some of which date back to 1995, we were able to obtain three different products from the plasma. The new plants will be able to manufacture up to six products,” emphasises Mahle. “A high level of efficiency in production is essential, as the raw material – blood plasma – accounts for more than 50 per cent of the production costs.” Whereas the capacity limit used to be 800,000 litres, the new plant will be able to fractionate up to 1.4 million litres of blood plasma.

Early involvement in the engineering process

Planning of the new plant got underway in 2013, and it is expected to be fully commissioned by 2021. Although most of the plant is already installed on site, a lengthy process of validation and qualification must be completed before production actually starts. Following basic engineering, Festo was also involved in the detailed engineering process very early on. For Werner Gödel, Head of the EMSR Technology Department, Biotest, standards needed to be defined for certain automation product groups in order to achieve the greatest possible, long-term plant efficiency. “One of the key questions was about the level of standardisation that could be achieved in order to reduce the maintenance workload, for example. The use of standard valve cabinets was an important step in this regard. Limiting the number of standards reduces maintenance workload down the road,” explains Werner Gödel.

Defined down to the smallest detail

Jürgen Weber, formerly Segment Manager Pharma Germany, Festo, and now responsible for Process Industries, Southern Germany, played an active role in the definition phase for the new plant. Issues were discussed right down to the last detail, even whether stainless steel or nickel-plated brass fittings should be used. Once Festo was defined as the standard, all seven suppliers were able to access the relevant products and pool components, such as the standardized



The large Biotest plant contains 250 control cabinets and 6000 Festo components.

valve cabinets, using a project-based order catalogue and order via the electronic platform.

Close coordination from the beginning

For Werner Gödel from Biotest, the close coordination with Jürgen Weber from Festo and Biotest's own maintenance department in the early planning phase was particularly important. "At the end of the day, our maintenance staff are the people who have to work with the products. They were clear in their preference for Festo. The plus points were the ease of use, good support and long service life," explains Gödel. "We also spoke to the plant engineers in advance and gathered opinions when looking for pool components. There was a resounding yes in favour of Festo components."

**About Festo:**

Festo SE & Co. KG is a global player and an independent family-owned company with headquarters in Esslingen am Neckar, Germany. The company supplies pneumatic and electrical automation technology to 300,000 customers of factory and process automation in over 35 industries. The products and services are available in 176 countries.

With about 21,200 employees in over 250 branch offices in 61 countries worldwide, Festo achieved a turnover of around €3.2 billion in 2018. Each year around 8 % of this turnover is invested in research and development. In this learning company, 1.5 % of turnover is invested in basic and further training. Yet training services are not only provided for Festo's own staff – Festo Didactic SE also supplies basic and further training programmes in the field of automation technology for customers, students and trainees.