LAUDA

NOVEMBER 2025

APPLICATION NOTE

MODULAR AND POWERFUL: HOW LAUDA CONTROLS TEMPERATURE FOR THE FUTURE OF PHARMACEUTICAL PRODUCTION

38 temperature control systems enable the production of a wide range of pharmaceutical active ingredients

LAUDA has successfully positioned itself as a system supplier for a pioneering pharmaceutical production center, securing a major contract. The project underscores LAUDA's leading position in complex temperature control tasks in demanding pharmaceutical production environments and impressively demonstrates the company's technological competence in this future-oriented market segment.

Project requirements and technical challenges

The new production center for pharmaceutical active ingredients is placing exceptionally high demands on temperature control technology. In a few years, the state-of-the-art facilities will produce various active ingredients and intermediates that enable fast and reliable diagnoses in critical medical areas such as neurology, oncology, and metabolic diseases. The project's total investment is in the range of multi-millions, underscoring its strategic importance to the pharmaceutical industry.

The particular challenges of this project lie not only in the high safety requirements for pharmaceutical production environments, but also in the complex local conditions. The available space required an exceptionally compact system design with minimal footprint, without compromising functionality. At the same time, the system had to be designed with access from all sides to ensure easy maintenance and servicing. Another central requirement was that each system component had to be replaceable at all times to minimize production downtime and ensure availability.

Figure 1:
An open TR module showing accessibility

LAUDA's modular solution

LAUDA developed a customized temperature control system for this demanding task that meets the specific requirements of the biotechnology production center. The heart of the system consists of two high-performance chiller modules of the SUK 600 WN type as well as two hot water and ice water modules of the TR 600 series, which ensure the complete energy supply in the building. A sophisticated load management system for the three temperature control circuits, along with the precise coordination and integration of the existing primary energy sources, enables high energy efficiency.

Particularly noteworthy is the implementation of 23 ITH 250 HTEX transfer stations, which ensure a flexible, demand-oriented temperature distribution throughout the entire production facility. Eight specially configured mixing stations, TR 250 HeHiKiTiEX, ensure the exact setting of different temperature levels according to the specific requirements of individual production processes. For particularly critical applications, an additional ultra-low temperature chiller, SUK 150 WNII, was integrated, which reliably covers even extreme temperature ranges.

As part of a 3D Ergonomic Design Study, every component was examined together with the customer's design team with regard to the required accessibility and maintainability, and deliberately positioned accordingly. The modular design of the entire temperature control system enables not only easy maintenance access but also flexibility for future expansions or modifications. Despite the compact arrangement with minimal space requirements, no compromises had to be made regarding functionality – proof of LAUDA's innovative engineering performance.

Figure 2:
Examples from the LAUDA
SUK process chiller program

All components are manufactured in accordance with the customer's strict industry standards to fully comply with regulatory requirements. LAUDA's comprehensive expertise in safety issues related to automation technology, the project team's many years of experience, and absolute reliability are particularly evident here, and have already been recognized by all project participants as decisive success factors. The complete automation, for example, is carried out with safety controls, which ensure particularly high availability of the temperature control system.

LAUDA positioned itself as a reliable partner that not only understands the complex requirements of pharmaceutical and biotechnological production processes, but also implements them with innovative solution approaches.

Strategic significance and outlook

This major project marks a significant milestone in LAUDA's corporate history and underscores its strong position in the pharmaceutical and biotechnology sectors. The targeted realization confirms not only the technological finesse in complex temperature-control tasks but also demonstrates the scalability of this technology for large-scale projects of this dimension.

The project opens further opportunities in the rapidly growing pharmaceutical and biotechnology industry and solidifies LAUDA's position as a competent system supplier for the most demanding temperature control tasks. The more efficient production of pharmaceutical active ingredients ultimately contributes to enabling medical diagnoses with lower raw material and energy consumption – an essential contribution by LAUDA to improving global healthcare and strengthening pharmaceutical innovation capacity in Europe. As always, with our motto in mind, we are ›Empowering Excellence. For a better future‹.

LAUDA DR. R. WOBSER GMBH & CO. KG
Laudaplatz 1 • 97922 Lauda-Königshofen • Germany
www.lauda.de/en