

Empowering Data Center for Premium Quality and Efficient Collaboration

Grundfos assists in the efficient deployment of a smart Data center in Henan Province

Quick Deployment of "One-Stop" Service

By adopting a prefabricated construction model, core components are integrated into a sealed enclosure, significantly reducing deployment time by

40%.

Custom Design and Strict Ex-Factory Inspection

Through BIM-optimized design, combined with strict testing and ex-factory commissioning processes, the system's efficiency and reliability are ensured.

Intelligent Optimization and Management

Through GiS (Grundfos iSOLUTIONS Suite) intelligent monitoring system, **automatic energy efficiency optimization** is achieved, along with the delivery of intelligent operation and maintenance solutions.

Overcoming Tight Construction Schedules

By seamlessly integrating and implementing a special tracking mechanism, lean collaboration ensures

delivery within **40 days.**

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In the digital era, computing power has become the core driving force for economic growth. Under the influence of the "Eastern Data and Western Computing" strategy, Henan is actively advancing the development of the "City of Computing Power." A large-scale intelligent Data center in Henan is being built to A-level standards, overcoming bottlenecks in ultra-large-scale computing power. This center provides critical support for the implementation of national strategies in the Yellow River Basin and further accelerates digital transformation across various economic and social sectors.

Multidimensional Challenges Under High Standards

The construction of an intelligent Data center is not achieved overnight. The transition from traditional single pumps to integrated hydraulic module systems represents a groundbreaking shift from zero to one. This process not only requires simplifying installation procedures and meeting stringent multidimensional demands such as energy efficiency, reliability, and low noise, but also calls for enhanced remote debugging and real-time monitoring capabilities to ensure the system's efficient and stable operation.

The most daunting challenge lies in time – with only a 40-day lead time from order placement to on-site delivery, the project faced unprecedented demands on the supply chain, manufacturing, and logistics. It was a test of both speed and precision, as well as a comprehensive assessment of the team's cohesion and execution capabilities.

Grundfos' Approach: Efficient Coordination and Precise Execution

01 A New Approach to Design, Construction, and Operation

During implementation, two sets of Grundfos "Smart cooling" prefabricated hydraulic module systems were pre-assembled at the factory, providing an efficient and reliable solution for the smart Data center's hot and cold water circulation and treatment.

The distribution system module is built around Grundfos DELTA, a high-efficiency pump skid, equipped with IE5 intelligent VFD pumps and an advanced pump control system. Combined with an intelligent efficiency optimization algorithm, it dynamically adjusts operating conditions in real time, ensuring the pump unit consistently operates within its optimal performance range.

Meanwhile, the water treatment module incorporates soft water processing, precise dosing, and multi-stage filtration to effectively prevent scale buildup, system corrosion, and pollutant accumulation – providing essential "health protection" for the entire system. The seamless integration of these two modules not only enhances overall system efficiency but also extends equipment lifespan, delivering a long-term stable and reliable user experience.

02 Cross-Department Collaboration and In-Depth Technical Integration

At the beginning of the project, Grundfos organized multiple rounds of cross-departmental technical communications to address the project's complex technical requirements, covering key aspects such as equipment selection and system integration. Through scientific calculations, the final solution balanced high-efficiency performance with market competitiveness, earning high recognition from the client.

During the project implementation, engineers carefully refined every detail, from air conditioning brand matching to valve material selection, from pump structure design to skid module size optimization. In the final joint commissioning phase, technical personnel successfully achieved efficient hot and cold water circulation by precisely adjusting system operation parameters.

03 Precise Coordination for End-to-End Assurance

Grundfos ensured precise deployment by closely collaborating with factory engineers, deeply engaging in installation and commissioning. Meanwhile, efficient coordination with the general contractor enabled rapid resolution of on-site issues, ensuring the accurate installation of modular components. Real-time tracking by a dedicated project team safeguarded smooth production and supply chain operations. Additionally, the adoption of prefabricated assembly techniques significantly shortened the construction timeline, guaranteeing high-quality and efficient project delivery.

"In real-world applications, Grundfos' 'Smart Cooling' prefabricated hydraulic module system stand out with its low-noise and low-vibration characteristics, creating an optimal operating environment for the superData center. Its superior craftsmanship and convenient installation greatly reduced construction time, providing strong support for the project's efficient execution."

Guided by the "Eastern Data and Western Computing" strategy, this project not only overcame high-density computing and technical bottlenecks but also demonstrated Grundfos' ability to tackle complex challenges through precise coordination and innovative solutions. Its successful delivery marks a significant step forward in digital economic development and provides an efficient, reliable, and sustainable technological pathway for future intelligent Data centers.