



Unleashing the Power of CDU Motors

The Backbone of Modern Data Centers



Data centers are the lifeblood of our digital age, driving industries dependent on flawless global communication, e-commerce, healthcare, finance, and more. These innovation hubs keep data flowing smoothly and ensure unbroken connectivity. But there's a hidden challenge that demands urgent attention—managing the colossal heat these systems generate.

Hyperscalers currently require ~10-14kw per rack and globally, they consume about 1% of the world's electricity—much of which is used just to keep these systems cool.

This article dives into the revolutionary Coolant Distribution Unit (CDU) technology and the game-changing role of advanced motors in transforming thermal management. By boosting equipment reliability, enhancing energy efficiency, and minimizing environmental impact, CDUs empower data centers to tackle the most demanding AI workloads without costly new infrastructure.

Empowering Data Centers' Core

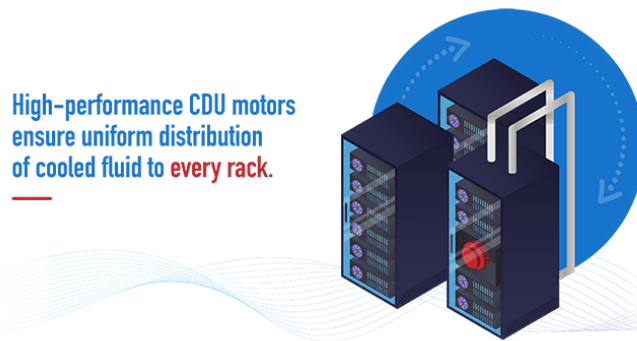
At the core of CDU systems lies their unparalleled ability to circulate liquid coolant efficiently. This ensures that critical servers stay at peak temperatures, maximizing uptime and performance. CDU motors are the unsung heroes here, acting as the system's "core." These motors drive the coolant circulation, ensuring it reaches every essential component. This mechanism is vital for smooth operations, safeguarding data centers from catastrophic overheating.

Mastering Coolant Flow Through Server Racks

Effective circulation of cooled fluid through server racks is non-negotiable, requiring precision and reliability. This process extends servers' operational lifespan, highlighting the critical role of efficient CDU motors.

Efficient CDU motors guarantee seamless coolant flow, preventing hotspots that could compromise data integrity and server performance. Consistent coolant flow is essential for maintaining optimal thermal conditions in server racks. High-performance CDU motors ensure uniform distribution of cooled fluid to every rack.

By expertly managing coolant distribution, CDU motors maximize cooling efficiency, extending servers' operational health. This meticulous management gives companies the confidence to rely on their data centers day in and day out.



The Power of Variable Frequency Drive (VFD) Motors

With Variable Frequency Drive (VFD) motors, data centers gain the power to fine-tune cooling precisely. These motors adjust speed and torque to meet real-time IT system demands, extending motor life, reducing energy use, and maximizing overall efficiency. Infinitem's integrated VFD motor (Aircore EC) further slashes energy waste by running at lower speeds, while also cutting down on audible noise and harmonic distortion, ensuring smooth operations without power quality issues.

Beyond performance, the Aircore EC stands out for its reliability. Its design allows for motor servicing without interrupting liquid flow, thanks to concurrent maintainability, ensuring minimal downtime and uninterrupted operation.

Compact, Yet Mighty Solutions

The engineering brilliance of compact, lightweight motor design delivers unparalleled flexibility and efficiency, allowing data centers to thrive, cut costs, and embrace eco-friendly technologies effortlessly, all while accelerating innovation.

When it comes to CDU motors, more features and higher specs don't always mean better performance. Infinitem's approach prioritizes quality and simplicity, offering long-term benefits through precision engineering. The Aircore EC, with its compact, lightweight design, optimizes space usage, reduces wiring, and eliminates bulky electrical cabinets.

This streamlined design boosts both energy efficiency and overall reliability, proving that simplicity fuels innovation. Each CDU motor component is meticulously crafted for peak performance, providing a solution that combines space-saving convenience with superior functionality.

Precisely adjust speedlife,
reduce harmonics, and
ensure smooth operations.



Elevating Data Center Efficiency and Reliability

CDU liquid cooling isn't just a cooling solution; it's a strategic edge for data centers aiming for peak efficiency, reliability and sustainability. By precisely targeting heat sources, CDU systems boost equipment performance, extend component lifespan, and ensure uninterrupted operation even amid hardware failures, thanks to integrated redundancy measures.

Infinitem's unmatched support through its Lifecycle Services Team ensures your systems meet exact specifications and provides continuous problem-solving support in any environment. Extended warranty and comprehensive spare parts are available from Infinitem for a stress free start-up and operation. Choosing Infinitem's Lifecycle Services offers a simple and cost effective way to avoid unexpected expenses should an event occur requiring parts to be replaced. With our premium service contracts, data centers enjoy long-term peace of mind, reduced downtime, and quick access to our engineers and technicians whenever needed.

Maximize Your CDU's Potential

Most AI installations rely on Direct Liquid Cooling (DLC) to efficiently manage the temperature of the graphics processing unit (GPU). In this system, the Coolant Distribution Unit (CDU) circulates fluid to the DLC. However, air cooling remains necessary for other server components, such as the power supply and additional integrated circuits on the board.

A key advantage of Infinitem's solution is the potential use of the same or similar motor for both air and liquid cooling. This approach simplifies maintenance, reduces the need for spare parts, and streamlines training requirements.

Simplify maintenance,
reduce spare part inventory,
and streamline training.



[Learn more](#) about Infinitem's data center solutions.

