

# The Critical Lifeline for AI: The Force-GT Series DIN Rail Power Supply Drives CDU for AI Data Center to Stay Cool

## Success Case



As AI rapidly advances, data centers have become the core infrastructure for immense AI computing. The power consumption of the AI chips is skyrocketing, making a stable power supply and an efficient cooling system equally critical. Among these, the Coolant Distribution Unit (CDU) is essential for maintaining optimal temperatures within AI data centers. Leveraging the advanced power technology, Delta plays an important role by providing a core driver for these CDUs: the Force-GT Series DIN Rail Power Supply.

## Coolant Distribution Unit (CDU): The Cooling Core for Data Centers

The Coolant Distribution Unit (CDU) serves as the central cooling hub for modern AI data center liquid cooling systems, much like a car engine's cooling system. It functions as a dedicated radiator for high-performance servers. The CDU adopts integrated pumps, heat exchangers, sensors, and smart control systems to precisely manage the coolant's temperature, pressure, and flow. By continuously supplying chilled coolant to the data center's high-speed "engines", this system removes heat more efficiently than air cooling. It prevents overheating and hardware damage, therefore ensuring the stable and continuous operation of AI computation.

## The Quiet Achiever Behind CDUs: The Force-GT Series DIN Rail Power Supply

The [Force-GT Series DIN Rail Power Supply](#) is the "unsung hero" supporting the CDU during the complex cooling process. With industry-leading efficiency up to 94%, the

Force-GT contributes directly to lowering Power Usage Effectiveness (PUE) by minimizing heat loss and reducing cooling requirements. Its ultra-slim DIN-rail design optimizes valuable rack space, supporting data center operators in maximizing server capacity and complying with increasingly strict space constraints. Furthermore, the robust thermal performance and wide operating temperature range help maintain uptime targets matching data center Tier III & Tier IV standards where downtime must remain below 25 minutes per year. From a TCO (Total Cost of Ownership) perspective, the built-in diagnostics, long service life, and reduced commissioning & maintenance costs make Force-GT a compelling choice for CDUs, battery management systems, and fan motor control in liquid-cooling architectures. Whether deployed in hyperscale server farms or edge computing modules, the Force-GT empowers operators to control operational expenditure while advancing sustainability initiatives.

The entire series features both single and three-phase models and provides a power range from 120W to 960W and 12V to 48V output options. Notably, the 480W/24V and 48V models achieve 80 PLUS Industrial 115V Platinum certification, leading the global market of DIN rail power supplies. Furthermore, the Force-GT Series' high conversion efficiency of up to 95% significantly reduces overall energy consumption, supporting AI data centers to optimize PUE.



*With up to 95% conversion efficiency, the Force-GT Series DIN Rail Power Supply provides stable power to CDUs.*

A major advantage is the Force-GT's extremely low derating, a feature that makes it a heat-tolerant runner who doesn't need to "slow down" in hot conditions. A typical runner can maintain 100% speed in cool weather but must automatically slow down to 70% or 80% in hot conditions to avoid collapsing. This "slowing down" mechanism is similar to a power supply's derating curve. The Force-GT Series hardly needs to "slow down" at all. With its extremely low derating, the single-phase models only derates by 2.5% per degree Celsius above 60°C and the same for the three-phase models above

55°C. By maintaining a stable, near-full-load output even in extreme heat, the Force-GT not only reduces energy costs but also eliminates the need for an additional backup. It thus guarantees high reliability and uninterrupted power in demanding data center environments. For now, the Force-GT Series have been successfully adopted by leading manufacturers in the industrial control and thermal management industries, delivering consistent and stable power.



Besides, the Force-GT Series is built for extreme conditions, offering an industrial-grade wide operating temperature range of -30°C to 70°C and a -40°C cold start capability. This robust design stabilizes the CDU's performance even under a full load at 60°C in a complex data center. In addition to its physical resilience, the Force-GT Series sustains superior stability and precise voltage output, addressing the exacting power quality requirements of the CDU's internal pumps and control systems. These features accordingly facilitate continuous cooling system operation and prevent power fluctuations from affecting performance. For smarter monitoring and management, the Force-GT's built-in DC OK relay contact connects easily to sensors or control systems in the CDU, providing real-time power status. With early issue detection and automated responses, this unit ultimately optimizes the liquid cooling system's efficiency in data centers.



Additionally, the Force-GT's slim design achieves a more compact CDU configuration, saving valuable data center rack space. Internally, it adopts long-life electrolytic capacitors and conformal-coated printed circuit board components to effectively resist dust and contaminants. This significantly enhances the entire product's durability and extends its lifespan. Moreover, this series has secured numerous international safety certifications and complies with the stringent standards of the heavy industry and semiconductor sectors. By furnishing the CDU with high-performance, safe, and stable power, the Force-GT has become a solid foundation for AI data center liquid cooling systems.



*Certified for use in the heavy industry and semiconductor sectors, the Force-GT Series have been successfully integrated by leading companies in industrial control and thermal management.*

As AI technology advances at an unprecedented pace, emerging data centers are increasingly demanding highly efficient power and cooling solutions. Delta is committed to developing more efficient and reliable power solutions with innovation, hence driving the industry's progress by strengthening the backbone of a sustainable AI ecosystem.