Mission Critical

TRANE

Chiller plant control for data centers

Precision thermal management for mission-critical spaces.

Are you getting the best performance from your thermal management system?

Data center cooling is complex, with technologies constantly evolving to meet zero-downtime demands while managing energy and uptime. Optimizing and coordinating these systems requires specialized technology and expertise — and getting it right is essential.

Your data center may currently be operating with advanced HVAC equipment, but high performance and energy efficiency rely just as much on precise control systems and operator expertise. A building management system (BMS) or data center infrastructure management (DCIM) system on its own isn't capable of optimizing HVAC performance across energy use, uptime and maintainability.

Now you can turn these complexities over to Trane. As an industry leader with over 100 years of thermal equipment and controls expertise, Trane is uniquely qualified to optimize chiller plant performance in your critical spaces.

Any data center can benefit

Data centers need chiller plant controls to ensure efficient, reliable cooling that adapts to changing thermal loads and protects critical IT systems. Tracer chiller plant control harnesses advanced HVAC optimization strategies, using real-time data to make precise adjustments that enhance system performance and maintain uptime. With Trane's expertise, virtually every data center chiller plant can achieve greater efficiency. Chiller plant control can help:

- Improve the reliability of your chiller plant to ensure uptime
- Enhance BMS/DCIM management and system complexities
- Manage energy costs more effectively
- Operate your data center in a more sustainable way
- Alleviate struggles associated with worker shortages
- Handle variable cooling loads due to scaled build out or changes in occupancy
- No subscription needed

Gain anytime, anywhere access to Tracer® chiller plant control through Tracer® Synchrony® — your key to an easy, integrated approach to optimized performance.

What can you expect?

Energy improvements.

Data centers account for 1-1.5% of the total global electricity use[1] and HVAC can account for up to 40% of that usage within a facility[2]. An optimized cooling system can lower energy costs and reduce carbon emissions.

Less stress.

Unlike a BMS that commands individual units, Tracer chiller plant control orchestrates your entire system, strategically managing the rotation, staging and sequencing of multiple chillers. You'll rest easier knowing HVAC infrastructure is being holistically managed.

Performance assurance.

Our engineered sequences and intuitive interface help maintain system performance near its original design. Your choice of Tracer means end-to-end support and expert service from a team dedicated to data center operations.

Improved productivity.

Our chiller system experts develop applications that take most chiller plant management tasks off your staff's to-do list. With support from data-center-qualified technicians, your team can operate more efficiently and focus on other priorities.

Seamless integration.

Managing your facility requires oversight beyond just the chiller plant. Tracer controls support multiple protocols, ensuring seamless integration with your existing infrastructure. It's engineered to fit effortlessly into a comprehensive thermal management system.

[1] https://www.iea.org/energy-system/buildings/data-centres-and-data-transmission-networks
[2] https://www.energy.gov/eere/iedo/energy-efficient-cooling-control-systems-data-centers

A complete optimization solution

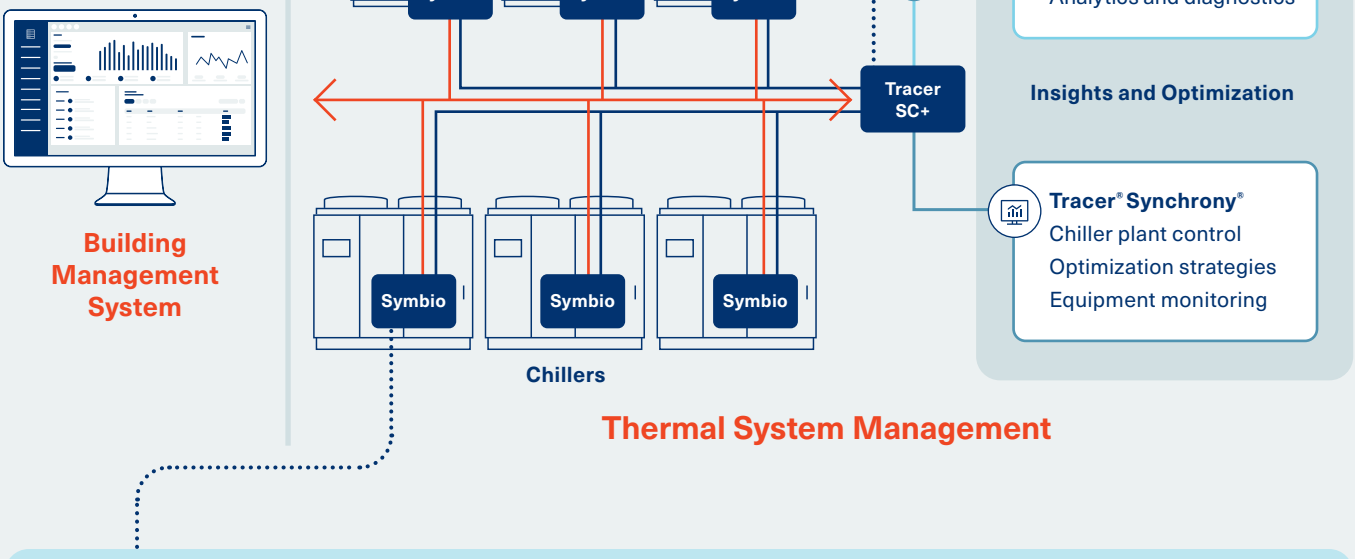
Optimizing your chiller plant for efficient thermal management can play a major role in your sustainability plans. Tracer chiller plant control is part of our full-service approach for achieving and maintaining efficient and effective building heating and cooling.

Tracer® SC+

Tracer SC+ is the single, powerful system controller that simplifies the complexities of chiller plant management. It handles chiller rotation, staging and sequencing with built-in applications that support efficient, reliable performance. By connecting all your plant equipment through one easy-to-use platform, Tracer SC+ helps reduce energy use, extend equipment life and keep operations running smoothly.

Connected Services

With your permission, we can directly connect to unit controls or a Tracer SC+ using our secure cellular infrastructure. Our digital service offerings can identify emerging equipment problems faster, better equipping your operations team or Trane service providers to take the right action.



Symbio® Equipment Controls

Tracer SC+ is fed data through unit level controls. Symbio controls capture and translate a broad range of equipment-based points into the Tracer SC+, providing the basis for data-driven service and optimization strategies.

Chiller Plant Optimization

Bring Clarity to Complexity

Behind a simple interface, Tracer chiller plant control runs sophisticated strategies that dynamically manage the rotation, staging and sequencing of multiple chillers. Many functions come built in, while custom sequencing can be applied to meet your specific requirements. This flexible approach delivers high-performance operation tailored to your facility — balancing proven logic with targeted customization for long-term efficiency. Designed for simplicity and ease of use, Trane's single platform supports sustainable performance well beyond initial commissioning, helping maximize equipment life and minimize energy use.

- **Chiller staging** — Defining the ideal number, combination and order of chillers to balance run time and efficiency across multiple units.
- **Pump pressure reset** — Reducing pumping energy and improving valve control by properly controlling pump pressure.
- **Chilled water reset** — Establishing rules for when chillers can use warmer water to achieve the desired temperature settings to save energy.
- **Free cooling** — Running energy-consuming compressors less by using only the cooling towers when indoor and outdoor conditions are favorable.
- **Heat recovery integration** — Repurposing energy during periods of simultaneous heating and cooling by using heat recovery chillers to move waste heat from cooling spaces to areas that need heating.
- **Enhanced cooling tower staging** — Determining the right number of cooling towers to operate most efficiently under any circumstance.
- **Chiller/tower optimization** — Maintaining the optimal tower water setpoint to balance energy use between cooling towers and chiller compressors.
- **Thermal storage integration** — Leveraging installed Thermal Battery® ice storage systems to avoid high-cost, peak-demand energy use, and storing waste energy for use later.

Every project is slightly different. Your Trane team can adapt and modify our engineered solution to customize your outcomes.

Team Up with the Chiller Plant Pros

No one understands thermal management for data centers better than Trane. From equipment and sensors to controls and programming, we bring deep expertise across your entire HVAC subsystem. Tracer chiller plant control integrates seamlessly with your existing HVAC infrastructure, leveraging built-in unit capabilities without the need for additional controllers.

Trane has experience in chiller plants and data centers all over the world.

Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit *trane.com or tranetechnologies.com.*

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