Ascend™
Air-Cooled Chiller
Model ACR

Air-Cooled Magnetic
Bearing Chiller
Model TCA

Air-Cooled Chillers Deliver Rapid Restart™ Capability

When the power goes out, Trane keeps it cool.

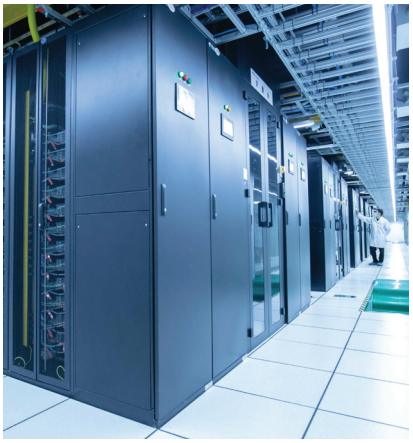
For many mission-critical applications, bringing a chiller back online rapidly after a power loss is crucial. When every second counts, having this rapid restart capability proven on the test stand will demonstrate the chiller's ability to adapt to power-loss situations.

Trane systems deliver Rapid Restart capabilities, which offer industry-leading start-up times in the event of a power outage. Once power is restored, your Trane system is fully back in operation in two minutes or less. Competitive rooftop equipment can take up to 15 minutes, long enough for servers to overheat and shut down. With Trane Rapid Restart, the mechanical cooling starts up before the servers heat up.

Trane understands that every second counts.

Trane equipment, controls, and control sequences are designed to get your system back online and properly functioning should your facility experience a power cycle event.

- Trane HVAC system design is optimized for fast restart, and will provide mechanical cooling in 120 seconds or less.
- RTU controls and equipment provide an integrated, pre-engineered solution for fast restart.
- Proven operational procedures maximize uptime during critical outages and get the system up and running as quickly as possible.
- Rapid Restart can be programmed at the chiller control panel to accur anytime unit high voltage power is lost and restored.
  All compressors are started at once.
- No external signal is required to initiate Rapid Restart, programing done at unitl level.
- Ramp up time to 80% load is about 3 minutes.



Chiller Rapid Restart Sequence of Events

-10 seconds	Chiller running at "X" TonR and power is turned off
0 seconds	Main power is re-established on the unit
64 seconds	Compressors get the start command and they all ramp up together
135 seconds	Compressor status become operational and keep loading with PID loop
160 seconds	Chiller is producing more than 80% "X" capacity
~250 seconds	At 100% load

Note without Rapid Restart, the time increased to 15 min till chiller gets on its 80% "X" capacity

Smaller Tanks, Bigger Savings with Trane Rapid Restart™

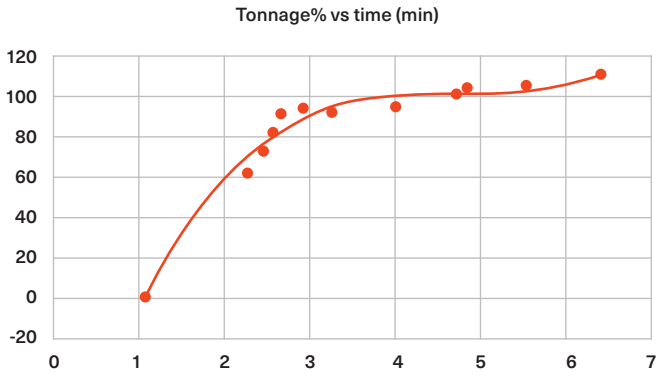
Reduce thermal storage cost.

Trane's industry-leading Rapid Restart capability means your chiller can be back online and restoring comfort in 120 seconds or less after a power outage. With such high-speed recovery, your building's chilled water system doesn't need large storage tanks to bridge the gap during power interruptions.

Why does restart speed matter?

When a chiller can return to operation quickly, it reduces the reliance on large, expensive thermal storage tanks. This translates to:

- **Lower capital investment:** You don't need to oversize your chilled water tank to compensate for long downtime.
- **Smaller footprint:** Less space required for tanks means more usable space in your facility.
- **Reduced operational cost:** Minimizing tank size also reducesmaintenance and operating expenses.



Design with confidence.

Trane's Rapid Restart technology allows you to optimize your system design for speed and efficiency. In applications where thermal storage is required, rapid restart lets you specify smaller tanks and invest in what matters most to your facility. Stay cool, spend less, and trust Trane to recover quickly—so your mission-critical operations keep running smoothly.

The complete package.

Trane not only provides customers with data center solutions, but we also ensure individual needs are met, installation is done properly, usage is understood and service is ongoing. Trane sets customers up for success through:

- **Pre-sale support:** Trane experts make the most thorough recommendations possible.
- **Best-in-class service:** Throughout the installment process, Trane is with our customers every step of the way. Trane experts go through a comprehensive training processes to be able to provide customers with the counsel needed for effective equipment use. Trane also offers technical training at our training facilities across the United States.
- **Post-sale support:** Trane Intelligent Services enable real-time monitoring of your chiller operation 24/7/365, leading to improved energy efficiency, higher productivity and reduced costs.

With industry-leading expertise and a wide array of solutions and services, Trane—a holistic provider—can help customers ensure data center facilities are highly reliable, efficient and sustainable. Trane's application engineering expertise and systems approach allows for efficient, flexible and scalable integrated designs, meeting specific customer needs that ensure uptime and performance is at the forefront of any data center implementation project.

Mission Critical

Trane experts and its broad solutions portfolio can help transform data centers with experience, innovation and passion for making buildings better—all while helping reduce energy intensity and ensure uptime.
Contact your Trane Account Manager to get started today!