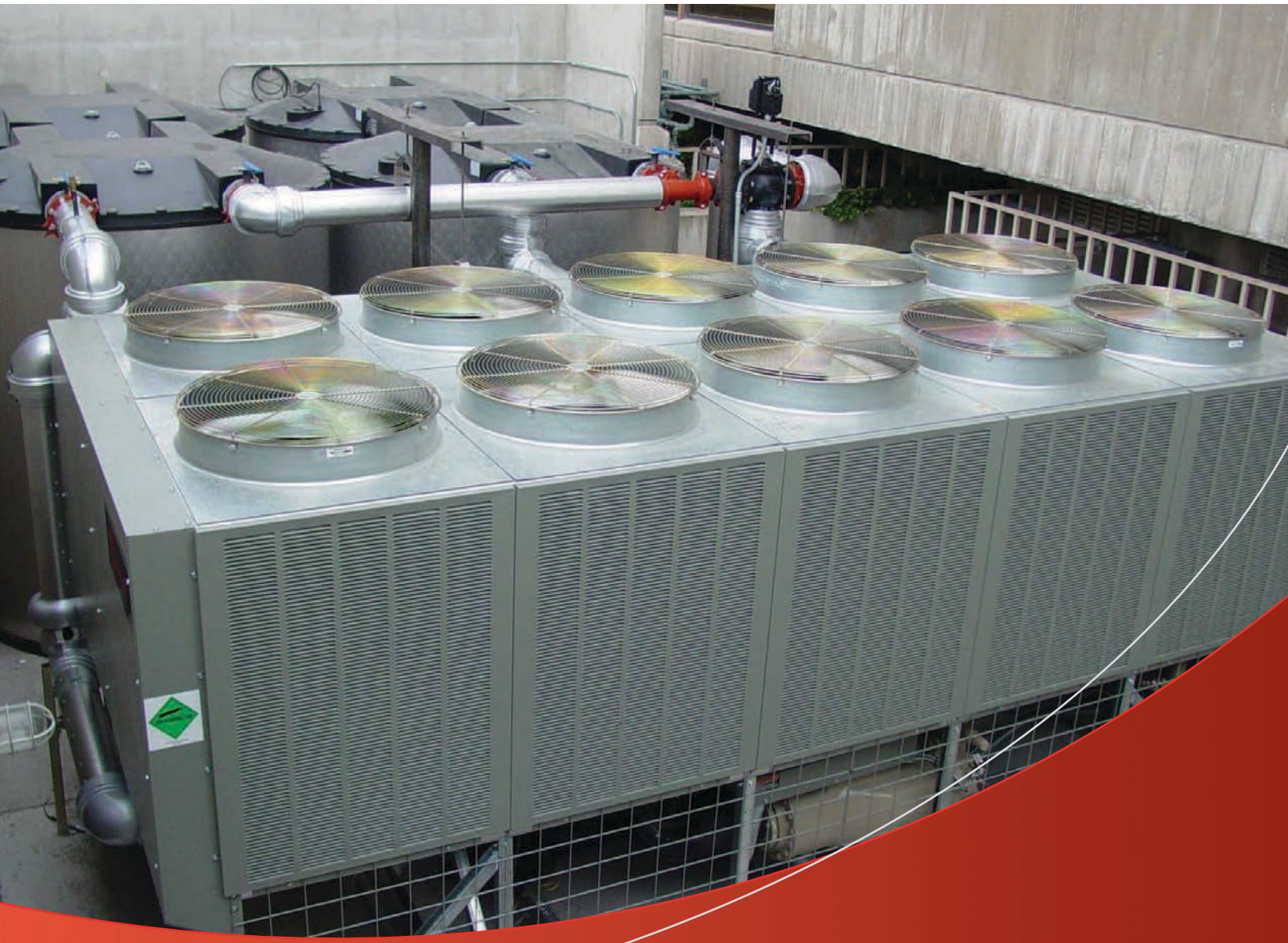
TRANE



Series R™ Helical Rotary Chiller model RTAC

A Reliable Source of Chilled Water from Trane

Ingersoll Rand

World-class testing sets Trane chillers apart from the competition.

Trane offers units and compressors that have been extensively tested to verify that their operation is robust and that a smooth start-up is ensured.

Reliability

You need performance that is dependable and reliability you can count on. We are committed to the highest level of design and manufacturing accuracy to make sure your chiller performs as expected.

Over 50,000 Pueblo-built RTAC chillers are installed around the world and attest to our unequaled reliability. There are more than 250,000 helical rotary compressors (including both air and water cooled chillers) operating with our proven direct-drive, low speed, semi-hermetic compressor design. These facts, along with over 25 years of helical-rotary chiller manufacturing know-how and a continued drive to improve our processes, are the ingredients for our sustained reliability.

Our rigorous design verification helps ensure reliable operation over a wide range of operating conditions. Testing involves:

- Extreme testing, including cold ambient starts, hot water starts and high ambient operation
- Compressor-accelerated lifecycle testing, including high-pressure ratio, high load test, flooded starts/stops, start/stop testing and phase reversal
- FEA analysis to confirm the unit structure can withstand shipping, rigging and operational activity
- Electrical testing with destructive testing for short-circuit withstand rating
- Performance modeling and verification, both during design and for the life of the chiller

World-class testing facilities

Trane's world-class testing facilities set us apart from the competition. We look at environmental performance, operating longevity, and overall operating efficiency in order to provide you with the most reliable product for the long term.

On-site factory performance testing confirms that the actual chiller performance matches predicted performance, and test results serve as a benchmark during the commissioning process.

On-going testing is conducted to continually confirm that performance expectations are being met and quality product is being produced. After the chiller goes into production, we keep looking for ways to make it better, quieter, more reliable, and more efficient.

Responsible energy savings

Businesses around the world are being challenged to improve energy efficiency. The HVAC systems that keep building environments comfortable and healthy are responsible for 45% to 65% of building energy use. The slightest inefficiencies in cooling and heating equipment create a huge energy drain that can have a significant financial impact.

The advanced controls, versatility and durability of the RTAC make it a good choice for a variety of chilled water system types including variable primary flow and series applications.

EarthWise™ systems

EarthWise systems use Trane RTAC chillers, building controls, and innovative system applications strategies to provide documented sustainability of high efficiency and low emissions over the entire lifetime of a building. Compared to conventional designs, Trane EarthWise systems help reduce total cost of ownership and reduce ongoing operating costs.

To help provide more system reliability and flexibility, a flow switch is factory installed as standard, reducing jobsite installation requirements and ensuring reliable operation.

Ice-making

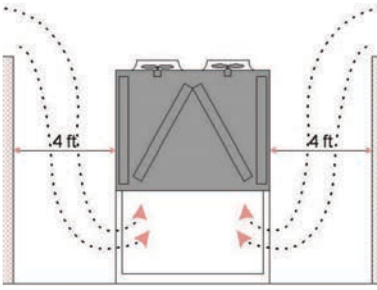
The RTAC supports an energy-efficient thermal storage system by making ice at night, when utility companies charge less for electricity. The stored ice supplements, or even replaces, mechanical cooling during the day when utility rates are at their peak. In addition, the RTAC can often make ice at the same efficiency (or better) than producing 44°F water during the day. This is because of reduced ambient temperatures at night when ice is made.

Contributing to building certifications

Because of its energy efficiency and refrigerant selection and usage, a Trane Series R Helical Rotary Chiller model RTAC can move you forward on your path to LEED®, Energy STAR, and ASHRAE 189 building certification. Both full- and part-load performance of the RTAC chiller exceeds the ASHRAE 90.1 standard. In addition, the falling film evaporator design minimizes refrigerant charges, helping the chiller to attain the LEED Energy and Atmosphere Credit 4 for Enhanced Refrigerant Management.

Energy analysis

Whether you are calculating energy efficiency to determine eligibility for LEED credits, earn tax deductions, or select the HVAC system with the lowest operating costs, Trane's System Analyzer™ software can help. The software estimates building loads and performs preliminary energy and economic analyses of virtually any combination of air distribution system and cooling/heating equipment for a specified building type and climate.



The RTAC has the tightest recommended side clearance in the industry: 4 ft for maximum performance. Where space is further limited and airflow is restricted, the RTAC will stay on-line.

Increased ease and efficiency through advanced control

In the event of a power outage, Trane really shines through. The RTAC chiller can restart a compressor in as little as 60 seconds.

Intelligent controls

RTAC chiller controls support BACnet™ and LonTalk® open protocols without the need of gateways, reducing the complexity and cost of integration with other building control systems. The underlying intelligence is Trane's Adaptive Control™ algorithms, which have patented strategies for responding to variable conditions while maintaining tight water control and effective chiller plant operation.

Powerful, flexible chiller management

The Tracer™ SC system controller includes a Chiller Plant Control (CPC) software application, which allows configuration of a chiller plant for optimal efficiency and reliability. The CPC application provides a flexible, cost-effective management solution for monitoring and controlling daily operation, including lighting and energy consumption. Its simplified, Web-based management tools help improve efficiencies, increase tenant comfort and reduce energy costs.

The powerful CPC application

- Controls the leaving-water temperature by adding chillers as the building cooling load increases and by calculating the chilled water setpoint for each chiller
- Matches chillers to the building load and equalizes runtime and wear on each chiller by using different rotation schemes
- Offers pre-programmed chilled water systems for easy use with series applications, variable primary flow, and many other system types

Trane Intelligent Services

Your building's HVAC system operates around the clock, even when no one is there to keep watch. Trane Active Monitoring provides continuous (24/7/365) off-site monitoring of the critical alarm points that you define and specify. Using the advanced technology of our Intelligent Services Center, Trane Technical Specialists work behind the scenes and around the clock to detect and diagnose failures early. Events can be mitigated, often remotely, without even involving a field service technician.

Every minute of every day, your Tracer™ building control system generates a steady stream of data: such as temperature, pressure, humidity and energy consumption. The Building Performance Package contains exclusive analytical programs that automatically translate all that raw data into informational reports that Trane Optimization Engineers use to identify performance trends and deviations that even the best technicians can't detect. Your local Trane sales and service professionals make actionable recommendations to align the performance and efficiency of your HVAC system with your business objectives.

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Ingersoll Rand (NYSE:IR) is a world leader in creating and sustaining safe, comfortable and efficient environments in commercial, residential and industrial markets. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Schlage®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings, transport and protect food and perishables, secure homes and commercial properties, and increase industrial productivity and efficiency. We are a $14 billion global business committed to sustainable business practices within our company and for our customers. For more information, visit www.ingersollrand.com.

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