



EFFICIENCY AND UPTIME HVAC SOLUTIONS FOR DATA CENTERS

Optimization or emergency -
Trane's unrivaled expertise, scale and speed
gives you greater control over your growth destiny.

Cooling and
heating needs
for data centers

Equipment
solutions for
data centers

Trane
services

Plant control
and remote
monitoring

Data center
references –
a glance

MAXIMUM RELIABILITY, MINIMUM FOOTPRINT

At Trane, we answer both needs – no compromise. Innovation combined with proven reliability and our Global reach to resolve your challenges on time and on target.

EXCEPTIONAL EFFICIENCY - CERTIFIED

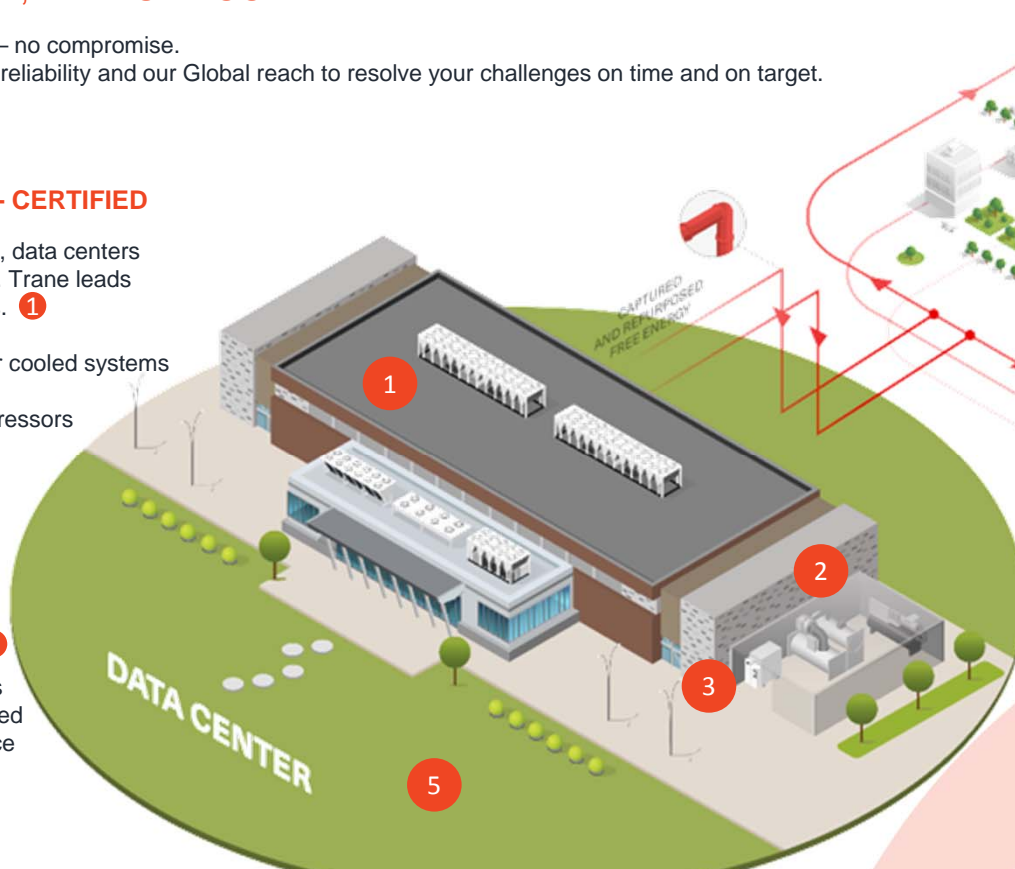
To minimize their energy footprint, data centers need maximum efficiency chillers. Trane leads with the market's best efficiencies. ①

Our technologies on air and water cooled systems include: ②

- Latest Magnetic bearing compressors
- Upgraded Free-cooling
- Low GWP HFO refrigerants
- Fast restart features
- Latest generation controllers

REPURPOSING ENERGY ③

Trane water-to-water heat pumps allow the re-use of energy captured from data processing to heat office space.



DISTRICT HEATING ④

Our heat pumps can enable the transfer of energy from your data center to contribute to district heating, further reducing your footprint.

LARGEST SERVICE ORGANIZATION IN THE INDUSTRY ⑤

Trane has in-region manufacturing and service capacity to help you scale operations anywhere in the world:

- Over 1,000 service engineers and factory-trained technicians across Europe available 24/7.
- Over 5,000 service experts globally
- Largest rental fleet in Europe

TRANE SOLUTIONS INCLUDE:

- Data center specific units and options
- Heat recovery chillers & heat pumps
- Rental chillers & heat pumps

Trane services many of the world's leading data centers across Europe

Cooling and heating needs for data centers



PRECISE TEMPERATURE CONTROL

→ **MINIMUM PUE**
(Power Usage Effectiveness)
HIGHEST EFFICIENCY
AND WIDEST CHOICE



The Sintesis™ air-cooled platform is certified the most efficient on the market

- Screw compressors for most extreme conditions
- Magnetic bearing compressors for maximum efficiency
- Low GWP refrigerant
- Designed for maximum Free Cooling and minimum PUE.

→ **KEEP YOU RUNNING SAFELY**
PRECISE CONTROL
FOR MAXIMUM UPTIME



Trane Adaptive Controller Symbio 800 features

- 7" display screen interface
- Wide variation of secured remote monitoring options
- Precise control for reliability under the toughest conditions
- Fastest restart with and without UPS connection.

→ **ENERGY INTENSITY REDUCTION**
FREE COOLING
AND HEAT RECOVERY



Because you operate 24/7, energy optimization is a must-have

- Upgraded Free Cooling systems for ultra-efficient cooling
- Heat recovery and heat pump technologies to repurpose your energy for heating.

→ **QUICK AND EASY INSTALLATION**
PLUG AND PLAY
DATA CENTER DESIGN



Installation time needs to be minimal to reduce cost and disruption. Trane data center platform is

- Factory pre-tested
- Plug and play
- Flexible and adaptable to your needs.

Designed to quickly provide sustainable cooling

Equipment solutions for data centers



TRANE SINTESIS™ EXCELLENT: THE BEST SOLUTION FOR DATA CENTERS

1

TRUE EFFICIENCY

Proven best in class performances for minimized PUE

2

UNSTOPPABLE RELIABILITY

It's hard to Stop a Trane, and if power stops it, the restart is fast and safe

3

ALL CONDITION READY

New technologies to cover the widest range of running conditions

4

PLUG AND CHILL

Solutions for easy and fast integration into your system

5

THE FUTURE OF SUSTAINABILITY

Highest efficiency and near zero GWP refrigerants for a drastically reduced carbon footprint



Our Specialists are there to support design and execution

Equipment solutions for data centers



1

TRUE EFFICIENCY

Proven best in class performances for minimized PUE

PERSONALIZED WITNESS TESTS

Our Highly qualified Support and Lab teams combined with the best equipment will set up the exact witness test you need



State of the art Large Air-Cooled Test Facility (LACTF) to test, qualify and optimize performances

THIRD PARTY VERIFIED WINNING EFFICIENCY



Trane is fully committed to transparency in its numbers and sustainable solutions. That's why SINTESIS™ EXCELLENT efficiency is proudly standing at the **first position of all Eurovent certified air-cooled products!**

Testing is in our genes. All performances we provide are based on and subject to thorough testing at the largest laboratories of Europe.



2

UNSTOPPABLE RELIABILITY

It's hard to Stop a Trane, and if power stops it, the restart is fast and safe

INNOVATIVE SOFTWARE FOR FAST RESTART



Latest Trane Controller Symbio 800 with embedded upgraded software for boosted reactivity on fast restart

ENHANCED CONNECTIVITY



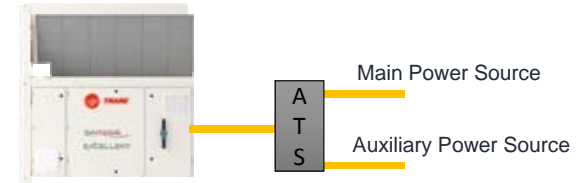
Symbio 800 enabling communication to connect and monitor the unit in full detail

UNINTERRUPTED POWER SUPPLY (UPS) READY



Optional UPS-ready connection of the unit controller to avoid reboot time

AUTOMATIC TRANSFER SWITCH



ATS option allows you to connect the unit to two power sources



3

ALL CONDITION READY

New technologies to cover the widest range of running conditions

LATEST COMPRESSOR TECHNOLOGIES

We implemented the latest technologies available to meet data centers' specific applications and needs such as:

- High leaving water temperature
- Increased capacity with HFO
- Lower Pressure Ratio operation

FLEXIBLE FANS SOLUTIONS



Numerous fans options provide the airflow your installation needs.

ADAPTIVE CONTROL



Our latest controller, the Symbio 800 manages the reactivity of the unit in every situation and keeps the unit running in the most extreme conditions.

Equipment solutions for data centers

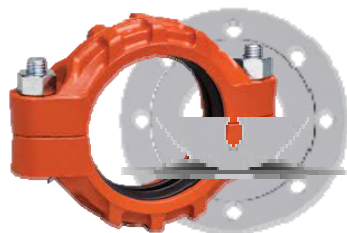
overview



4 PLUG AND CHILL

Solutions for easy and fast integration into your system

WATER CONNECTIONS OPTIONS



Whether you prefer PN16 flanges or Victaulic connections, we have it as a standard option to quickly integrate our unit into your installation

REDUCED FOOTPRINT



Modular design offers shorter condenser versions for restricted area

FLEXIBLE PUMPS SOLUTIONS



Numerous unit mounted hydraulic module options to meet your system requirements and optimize energy consumption



5

THE FUTURE OF SUSTAINABILITY

Highest efficiency and near zero GWP refrigerants for a drastically reduced carbon footprint



SINTESIS™ EXCELLENT with Glycol Free - Free Cooling, hydraulic module and Coated coils ready to leave the factory

R1234ze

HFO FOR SUSTAINABILITY

R1234ze with low GWP (<1) is the best choice for environment



MAINTENANCE AND PARTS AVAILABILITY

Trane chillers are known for being unbreakable. Still it is wise to be prepared for the unexpected to happen. Preventive actions such as maintenance should not be your concern. That's why we offer maintenance and lifecycle management, backed by 24/7 support and rapid parts availability. We have a global organization of experts ready to coordinate and serve all your data center needs across the globe.

→ OPTIMIZE RUNNING TIME

PREVENTION IS BETTER THAN CURE



Trane maintenance contracts

- Technical Health analysis
- Tailored advise based on findings
- Service, Production and Engineering sharing insights at trainings and support
- Available with 24/7 call-out support and remote services

→ RAPID, DEPENDABLE RESPONSE

JUST ONE PHONE CALL AWAY FOR ANY SUPPORT



Support includes

- Factory trained Service Engineers
- On site within 4 hours
- Critical parts within 24 hours.

→ ENABLE SYSTEM UPGRADES

INNOVATION DOESN'T STOP AT INSTALLATION DATE



Trane Building Advantage offers tailored upgrades to meet your sustainability goals

- Adiabatic cooling
- Refrigerant management and upgrades
- Advanced controls
- Connected services
- Heat Recovery Solutions
- Any other innovation

TAKE CONTROL OF YOUR HVAC OPERATIONS

Trane Tracer SC+ is a fully flexible control solution that provides a clear and intuitive user Interface for local or remote monitoring. This includes remote service from Trane chiller engineers.

→ OPTIMIZE DAILY OPERATIONS

A USER INTERFACE TO MANAGE EQUIPMENT AND SYSTEM



You get

- Real time data to answer your questions
- Built-in functions for ease of use
- Full-screen instructions in plain language showing “what’s next” and “why”.

→ MAXIMIZE PERFORMANCE

LEVERAGE OUR EXPERTISE TO GAIN EFFICIENCY

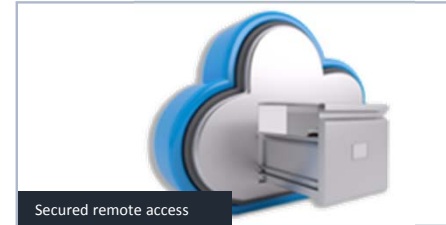


Our intuitive, task-based interface allows

- Continuous monitoring of running conditions
- Identification of potential faults
- Clear direction to avoid unnecessary costs and unscheduled outages
- Rapid, proactive responses.

→ ACCESS YOUR EQUIPMENT ANYTIME, ANYWHERE

A FULLY SECURED REMOTE CONNECTION

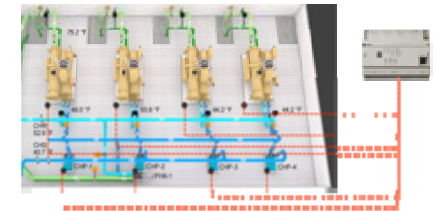


Tracer SC+ enables your facilities management team to

- Monitor temperature 24/7, even off site
- View the building status
- Receive immediate notification and diagnostics
- Keep your building performing optimally
- Avoid unnecessary on-site visits.

→ FOCUS ON WHAT YOU DO BEST

WITH TRANE INTELLIGENT SERVICES



Remote support means

- We use a secure connection to monitor equipment remotely
- We anticipate and address issues before they have an impact on your business
- We service your systems faster and more cost effectively
- You can focus on running your operation.

DATA CENTER, MADRID, SPAIN

The Challenge

- Maximize energy efficiency with free cooling capability
- Optimize sustainability with ultra-low GWP refrigerant.

The Solution

Trane installed and commissioned

- Glycol-free free cooling RTAF 280 XE Sintesis chillers
- R1234ze refrigerant with zero ODP and <1 GWP.

The Results

- A customer who reports full satisfaction with Trane high efficiency units and world-class service capability
- A maintenance contract to keep the customer at this satisfaction level
- The customer already started collaboration with Trane for their next site developments



DATA CENTER, IRELAND

The Challenge

- Reduce operating costs of existing system
- Keep chiller system footprint the same
- Recover energy for existing system

The Solution

Trane installed and commissioned

- New variable speed drive (VSD) on existing chiller compressors
- VPF control system on the full water loop/system
- New heat recovery system with water sourced heatpump for office buildings

The Results

- Improved efficiencies and reduced operating costs
- Sustainability goals achieved with greater energy savings



Data center references – a glance





THANK YOU