



# *Climate control precision in Hi-tech environments*

*Jupiter and Mercury Close Control Units*



# *Precision control – from the total provide*

## **Uncompromised precision**

More than ever data centers, server rooms, and other hi-tech areas require extreme reliability in their Climate Control System. If temperature or humidity levels stray (even slightly), then system failure and financial losses can often be catastrophic.

That's why Trane, as part of its total building comfort solution concept, offers excellence in precision climate control for hi-tech areas.

Trane's close control units are not only precision controlled. They provide the cooling to precisely where it is needed.

## **Energy savings**

A number of energy saving options, such as Electronically Commutated fan motor, electronic expansion valve, energy saving units, etc., result in reduced cost of ownership. And by using the latest electronic control strategies, Trane's close control units give you a +90% Sensible Heat Ratio (SHR).



# r Trane

## **Flexibility – to answer your needs**

The Trane range of Jupiter and Mercury close control units gives you one of the widest choices of cooling capacities anywhere: from just 5kW to 130 kW. So whatever your cooling requirements, you can rest assured that we can handle them.

What's more, the range offers a wide choice of configurations and airflow technologies. Choose from direct expansion air-cooled or water-cooled units, or even chilled water, energy-saving or twin-cool units. You can also select from a range of fan types and options – everything you need to ensure you get the exact solution you want.

## **Ultimate reliability for your vital processes**

Thanks to smart design, rigorous laboratory testing and total-quality production processes, your Trane precision Climate Control System promises fault-free operation 24 hours a day, day after day after day...

And in the extremely rare event that a component starts to fail, it will be logged and alarmed and even sent to a remote location via your Trane BMS (Building Management System), by the microprocessor control which constantly monitors all unit components and environmental parameters. Any needed maintenance can therefore be immediately carried out.



Ultimate precision using a user-friendly interface.

• *Precise* • *Flexible*

• *Reliable* • *Efficient*

# Trane's excellence shows

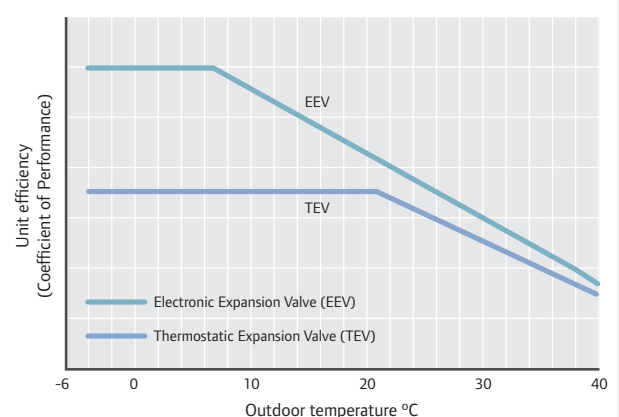


## Extreme precision

Electronic expansion valves are available for even more precise control of refrigerant flow, resulting in energy savings and absolute operation stability more particularly when the cooling load or condensing temperatures variations are important.

Intelligent controls allow tight control of your critical parameters resulting in high reliability, complete flexibility and elevated performance.

Options such as an electrode boiler humidifier, electric heater, hot water reheat, and hot gas reheat for dehumidification, facilitate precise humidity and temperature control.



### Free-cooling

Further energy savings are achieved through the “Free Cooling” capabilities on Energy-saving units. The system adapts operation according to the outdoor conditions, reducing power consumption from 20% to 60% depending on the local climate.

### Efficiency

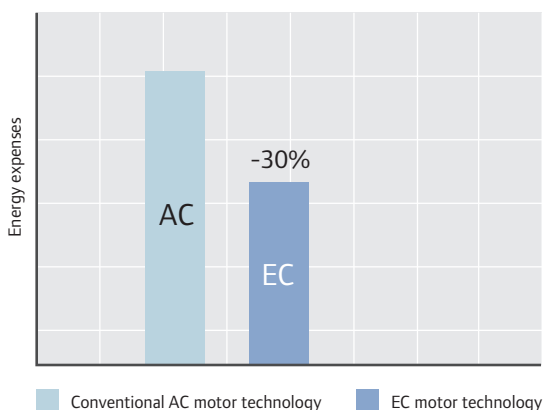
Our direct drive plug fans with electronically commutated (EC) motors require up to 45% less power on chilled water units and 60% less power on air-cooled units than units with standard AC motor fans. They are highly efficient at part-load since the fan speed is adjusted by the microprocessor control while the unit is running. In addition, compared to

AC motors, the EC motor has a longer life span and needs less servicing, because maintenance costs can be mainly associated to the wear of the brushes, which EC motors do not have.

### BMS integration

The unit controls are designed to communicate using today’s most common protocols, allowing for easy integration into your Building Management System.

Right from your desktop, you can monitor and control operating parameters or obtain a history of data or alarms of units installed in one or more sites. Maintenance interventions can be better managed, and the risks of costly breakdowns are reduced.



**LONMARK®**  
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## *Engineered for mission-critical applications*

### **① Electronic expansion valve**

The unit follows the cooling load with high accuracy, from about 5 to 115 % of nominal load (from 50 to 110 % in the case of Thermostatic Expansion Valves), which improves the Coefficient of Performance (COP) at lower condensation temperature.

### **② Electronically Commutated fan motor**

Also known as brushless DC motors, EC motors allow superior control and variable speed on your fans. This translates into lower power consumption and improved system longevity than standard AC motors.

### **③ Safety and reliability**

Units with a direct expansion circuit are equipped with scroll compressors for optimized reliability and efficiency. A

wide range of options is also available for improved safety and reliability: Fire, smoke and water leak detectors. External sensors for high ambient temperature and humidity alarm signals, dirty filter alarm, high efficiency filters, etc.

### **④ Safer and easier maintenance**

You have full access to all main components from the front panel of the unit. Inner and outer door panels provide extra security, continual operation and reduced sound levels during maintenance.

### **⑤ Advanced control**

Easy-to-use interface with graphic display allows control over a large number of parameters, reports and alarm signals. Units can be connected together in a number of configurations thanks to the local area network operation.



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# Technologies and choice of air flows

## Direct expansion air-cooled

Simple direct expansion unit, can operate independently.

## Direct expansion water-cooled

Simple direct expansion unit with water-cooled condenser. Can be convenient to avoid long refrigerant piping on some building configurations.

## Twin cool water-cooled or air-cooled

Operates like a direct expansion water-cooled unit or air-cooled, but the unit can also be connected to chilled water circuit. Direct expansion can be used at night if the chiller is off. Having the 2 systems in one unit can also be used for back-up.

## Energy saving

The unit can work in 3 different modes:

- **Summer season:** operates like a direct expansion water-cooled unit.
- **Mid-season:** Direct expansion water-cooled + free-cooling. When outdoor conditions are cooler, both refrigerant and water are used to cool the air. The water goes through an interlaced coil in the evaporating coil before flowing through the water condenser, in order to reduce compressor use.
- **Winter, 100% free-cooling:** when outdoor conditions are cold enough, compressors are switched off, and only water circulates through the coil.

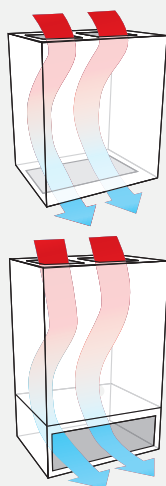
## Chilled water

Connects to a chiller.

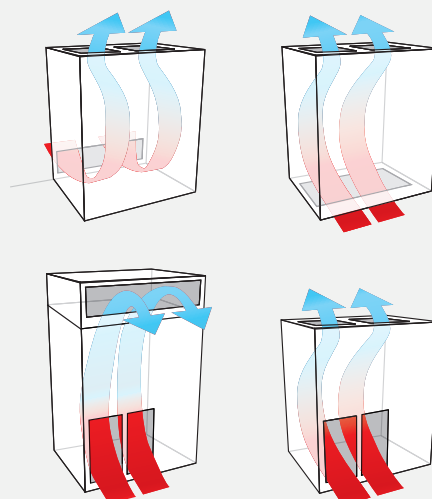
## Choice of airflow configurations

We can advise which airflow configuration best suits your area – the choice could depend on whether you have an access floor, the type of heat loads you need to handle, the desired installation costs.

### Downflow

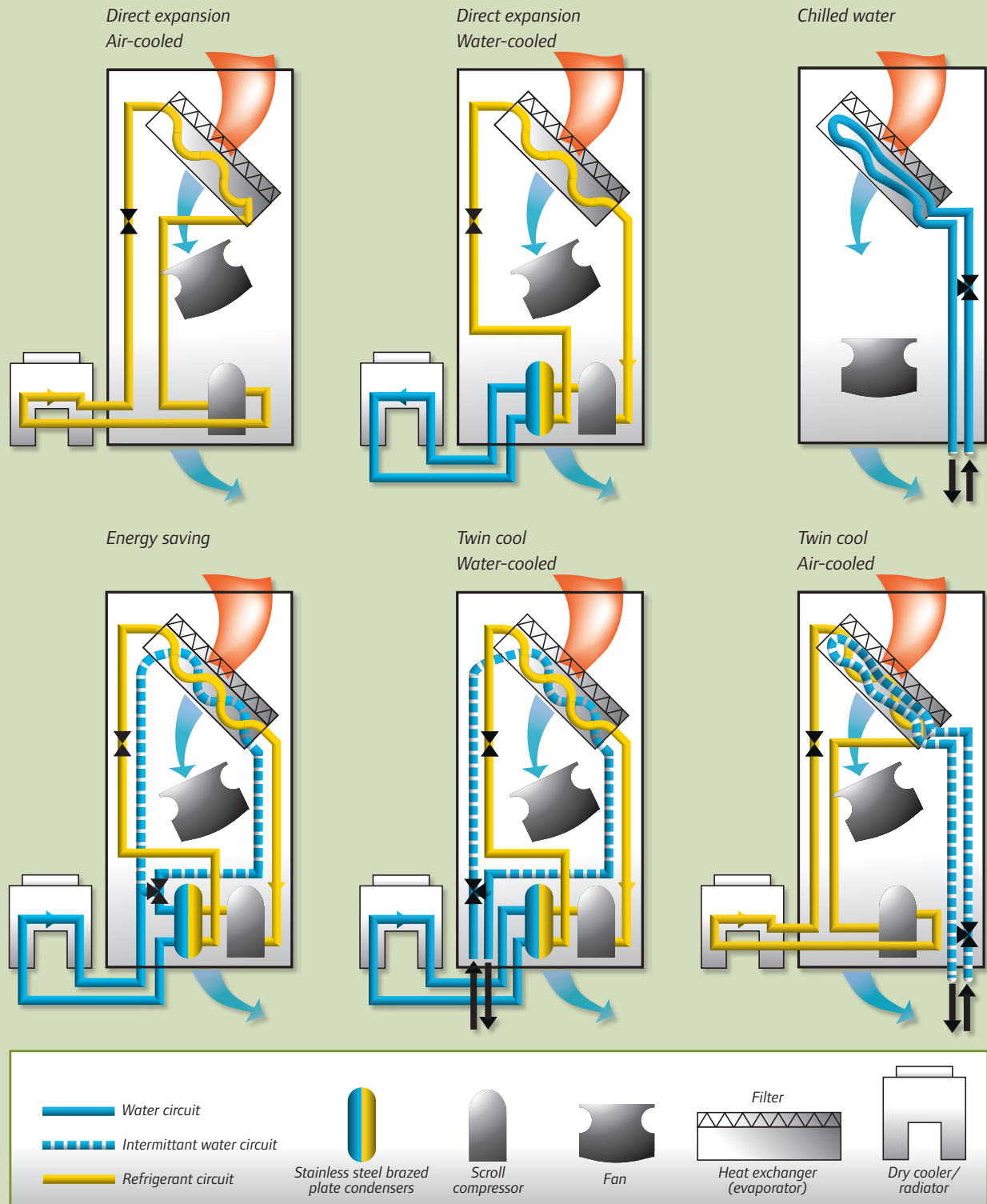


### Upflow





## Choice of technologies





## *The single source for all your building needs*

*When you specify a Trane close control unit, you don't just get a top-class product, you also get the expertise to optimize your whole HVAC system and keep your total building operating cost to a minimum while maintaining the utmost level of comfort.*

### **Heating, ventilating and air conditioning systems**

Depending on your building or process, you may need a chiller, an air handling unit or terminals. And here Trane can help as well. As one of the world's leading HVAC equipment manufacturers we can provide the exact solution. Moreover, you can be sure it fits perfectly with your close control units, because they will use the same protocols and control strategies. Trane chillers, fan coils and air handling equipment come with factory-mounted controllers for integration within a Trane Building Management System.

### **Building Management Systems**

The **Tracer Summit™** building management system provides supervision and control through a single, integrated system. Its user-friendly graphical interface, associated with its pre-engineered functions, and standard communication protocols allows you to efficiently pilot your building performance.

**Tracer Summit™** can help you meet your building's temperature, humidity, ventilation and energy management needs, no matter how challenging. High quality, easy-to-use, integrated and reliable controls are the key to maximizing efficiency and to prolonging the life of your building comfort system.

*Peace of mind from  
total accountability*

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### *Peace of mind with service and parts*

*At Trane, we are committed to providing full service solutions that are efficient and reliable, just like our equipment.*

#### **Elite Start™**

Trane equipment is commissioned by technically competent factory trained technicians. Trane commissioning confirms that the system has been not only accurately installed, but also configured and fine-tuned to operate according to your requirements.

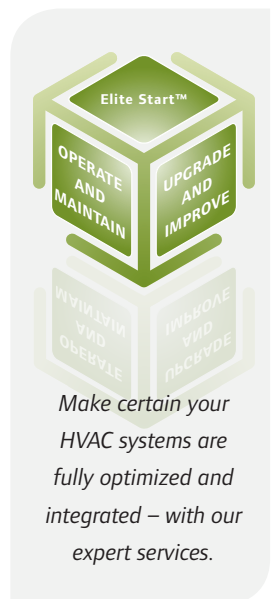
#### **Operate and Maintain**

To keep your Trane equipment operating at peak efficiency, Trane offers technical expertise to maintain or repair your system. Our full range of HVAC spare parts, both Trane-specific and generic, coupled with our advanced logistics network ensures a quick and reliable service. The result? Even in the rare event of equipment failure, downtime is kept to an absolute minimum.

#### **Upgrade and Improve**

To help you conserve energy while maximizing cost saving in your building systems and operations, Trane offers:

- **Trane Select Contracts** tailored to your needs, your business, and your application. They are comprised of several levels of services, ranging from a 24/7 duty to full 'all parts and labor' coverage, including life cycle management and maintenance.
- **Trane Care Services** to offer a wide range of upgrade products to answer your needs in terms of reliability, energy conservation, and respect of the environment.





### How do you choose?

There are hundreds of possible system designs, air handling unit or chiller configurations.

How do you possibly narrow the choices and definitively determine the right HVAC system design for your building?

Amazingly, it's quite easy... with Trane's help.

Our System Analyzer™ helps estimate building loads and performs preliminary energy and cost analyses of virtually any building, system and equipment combination. For LEED certification, TRACE™ 700 (Trane Air Conditioning Economics) software helps analyze the energy and economic effects of virtually any system configuration. It allows you to manipulate a wide range of variables to create a detailed energy usage profile for your specific building. Unlike overly simplified spreadsheet-based energy analyses,

TRACE 700 software accurately compares the impact of building alternatives. You can test the effects and consequences of different architectural features, HVAC systems, and building utilization or scheduling scenarios. And you can see the different economic options for each scenario. This enables you to make genuine life-cycle, cost-based system decisions with absolute confidence.

### Contact us – we're here to help

We can help you plan, install and manage your next HVAC system – so you can concentrate on your core business. Our experience and expertise in designing, commissioning and maintaining HVAC systems not only guarantees a solution that best answers your needs, it also gives you complete efficiency and peace of mind.

Call us, let's talk.



Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. Only qualified technicians should perform the installation and servicing of equipment referred to in this publication. For more information, visit [www.Trane.com](http://www.Trane.com).

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