



# *High Efficiency Terminal Products*

*Single Zone VAV Solutions*



# Trane Family of Terminal Products

## It's time to take another look at terminal.

As your partner, Trane understands it takes more than a concept to design an effective HVAC system. Between cost and code compliance – not to mention comfort, acoustics and efficiency – the conflicting interests can be challenging to satisfy.

The Trane family of terminal products has been redesigned from the inside out, with innovative high efficiency upgrades guaranteed to fulfill virtually any building's requirements without compromising your needs.

Now, the industry's only terminal units with an exclusive Trane electronically commutated motor (ECM) standard on all products, integrated with the industry's first factory programmed variable speed controller, means a Single Zone VAV solution that improves efficiency by up to 66%.

*Problem? Solved.*

### UniTrane Fan Coil

Fan coil is an in-room unit composed of a fan and chilled or hot water coils. Applications include hotels, condominiums, dormitories and apartments.

Force-Flo™ cabinet heaters are a high capacity, forced air fan coil unit for entryways and corridors in large office buildings, schools, hospitals and dormitories.

### Trane Unit Ventilator

Unit ventilator operates on the same principles as a fan coil, but are tailored specifically for schools with a sturdy institutional design and an integrated airside economizer. Applications include schools, as they are an especially effective solution for classroom renovation projects.

### Trane Blower Coil

Blower coil is a light duty air handler for chilled water or refrigeration systems with ducted air distribution. Applications include schools, hospitals, offices, retail stores and stadiums.

## Single Source Solution

*From chillers to compressors, the complete line of variable speed Trane HVAC solutions are designed to work together to deliver exceptional performance and value. These high efficiency systems with flexible configurations can be the perfect fit for your building.*



# Single Zone VAV

## Frequently Asked Questions

<p>What is Single Zone VAV?</p>	<p>Single Zone Variable Air Volume (VAV) is a high efficiency system in which the motor speed and air volume automatically adjust in response to a space's needs.</p>
<p>What are the applications?</p>	<p>Spaces where occupancy varies. Examples include classrooms, office buildings, gymnasiums, dormitories and barracks.</p>
<p>Why is it better than a Constant Volume system?</p>	<p>Single Zone VAV offers substantial operating savings because a high efficiency motor driven, variable fan speed can be the most energy efficient way to address partial load conditions.</p>
<p>How does Single Zone VAV impact operating cost?</p>	<p>Single Zone VAV lowers operating costs because of the efficiency gains that come from the ability to operate at low speeds for partial loads.</p>
<p>How does a Single Zone VAV system improve comfort for building occupants?</p>	<p><b>Temperature Stability</b> – Variable speed technology gradually changes fan speed, which reduces temperature swings.</p> <p><b>Quiet Operation</b> – Variable speed units run at the lowest fan speed necessary, and move up and down slowly between speeds. This soft ramp capability means fewer audible changes and a substantial 5 to 8 decibel reduction in system noise.</p> <p><b>Dehumidification</b> – Operating at lower speeds for more time improves dehumidification, a key factor for IAQ and comfort.</p>
<p>How can I get a Single Zone VAV system?</p>	<p><b>Trane ECM terminal units integrated with the UC400 Unit Controller offers the only factory commissioned Single Zone VAV solution in the industry.</b></p>

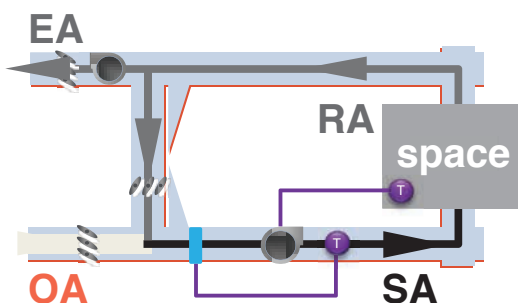


### Building Life

Trane knows that careful attention to the unique needs of a building can improve the life of equipment, controls and HVAC systems.

This solutions-oriented commitment to delivering exceptional performance fosters an environment that has a positive impact on the lives of the people within it.

## Single Zone VAV System Configuration



In a Single Zone VAV system, the temperature sensor in the zone is used to vary the air temperature and the air volume in order to maintain the desired set point.

# Terminal Transformed

Terminal units shouldn't be an industry afterthought. Trane understands they are a critical system component, and careful consideration was given to every design and performance specification to transform our family of terminal solutions into a high performance way to drive a building's efficiency.

Whether you're concerned with occupant comfort or system design, Trane has the answer.

## Innovation in ECM

Terminal products were upgraded from conventional PSC motors to our exclusive new EC motors, making Trane the only manufacturer currently offering ECM as standard technology.

Trane EC Motors ...	Giving You...
have sealed bearings and completely enclosed construction.	extended motor life and lower maintenance costs over the life of the system.
optimize performance at every speed.	dramatically enhanced efficiency, with energy savings up to 66%.
have fewer moving parts and are much more reliable.	lower maintenance systems with lower total cost of ownership.
are 30% smaller.	less restricted air flow.

## Real Time Feedback

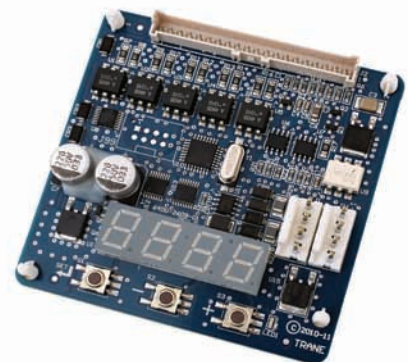
VelociTach™ is our EC motor control board that features a Trane exclusive LED screen to provide real time feedback to installers and maintenance staff. This eliminates the inconvenience of using a separate service tool.

## Control Board Benefits

- Enhances serviceability and improves response time for maintenance staff
- Allows maintenance to monitor performance and maximize efficiency
- Eliminates cost of additional computer hardware and software
- Reduces the time needed to balance the unit during installation.

## Single Zone VAV

Trane terminal ECM units integrated with the UC400 Unit Controller are the industry's first factory commissioned Single Zone VAV solution, with automated and optimized motor speed adjustments to meet a space's heating or cooling needs.



# Advanced Controls

Even the most skillfully engineered solutions may never deliver their full potential without controls designed to leverage the system's capabilities. Trane developed innovative control algorithms that maximize the performance and efficiency for each of our units under all operating conditions.

Only Trane terminal products are available with factory mounted, wired and programmed Tracer™ unit controllers, providing unmatched system integration and performance optimization.

### Tracer UC400 Unit Controller

The UC400 Single Zone VAV controller minimizes fan speed and energy use by delivering only the airflow necessary to address the space load.

This programmable controller's functions include:

- Random Start
- Warm-up, Pre-cool
- Freeze Avoidance
- Built-in Dehumidification
- Auto Fan Speed Adjustment
- Discharge Air Temperature Control

### Controlled Costs

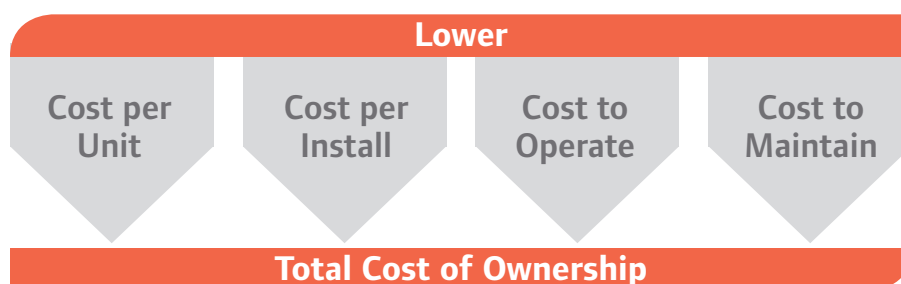
The lowest total cost of ownership in the industry makes the new Trane high efficiency terminal units a value-added asset to any building's HVAC system.



### Separation Innovation

We separated the Trane EC motor from the VelociTach™ motor control board, and added an LED display and manual interface.

This delivers the convenience of a visual status report and the ease of push button adjustments, facilitating optimal performance and simplifying serviceability.



# Understanding the Upgrades

The terminal products upgrade is more revolution than redesign. Rather than incremental improvements, we took a technological leap forward and elevated the industry standard for this product class.

We leveraged the synergy of the new technology suite to produce dramatic improvements in ease of installation, cost of ownership, acoustics and temperature control.

## Streamlined Installation

Units, unit controls and piping packages are installed, configured and tested during manufacture. A factory commissioned system makes job site installation a streamlined, single point power, plug and play process and ensures long term, trouble free operation.

## Quiet Operation

Soft ramp technology slowly ramps motor speeds up and down to address the space load and eliminates the distracting noise associated with units turning on and off. And because the moderated air flow achieves the same comfort levels as running at full capacity, variable units are 5 - 8 decibels quieter than traditional three speed models.

## Continuous Comfort

Innovative tempering algorithms in the UC400 controller eliminates the typical temperature variations that cause occupants discomfort. This discharge air temperature control means your space reaches the desired set point more quickly and the temperature maintenance is more stable.

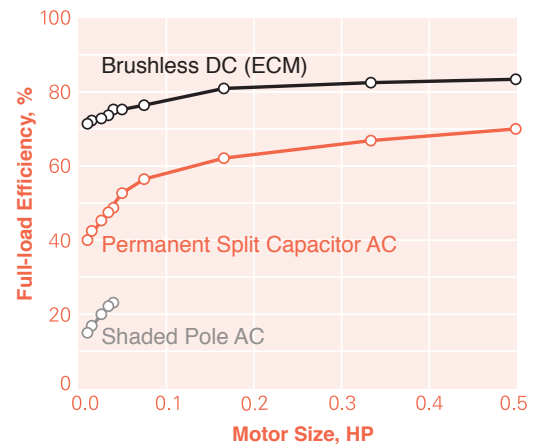
## Superior Performance

ECM is a high efficiency, programmable motor technology. Motors require less maintenance, are more reliable and have a longer service life. They can be performance optimized at any speed, dramatically increasing energy efficiency over conventional three speed PSC motors.

## Trusted Partners

*Your new Trane system is built on a foundation of expertise earned with a century of hard work. We bring a commitment to industry leadership, product innovation and superior performance to our partnership with you, and we are focused on providing comprehensive solutions you can count on.*

## ECM has significant efficiency gains over PSC



# No Compromise Solution

The features you want. The technology you need.

Trane Delivered...	You Asked For...						
	Total Cost of Ownership	Efficiency	Serviceability	Flexibility	Acoustics	Comfort	Trane Exclusive
ECM Standard	●	●	●	●	●	●	●
Advanced Controls		●	●	●	●	●	●
Plug & Play	●						●
Soft Ramp	●	●		●	●		
Discharge Air Temperature Control	●	●				●	●
Real Time Feedback	●		●	●			●
Reduced FLA				●			●

Trane asked customers what they need in a terminal unit. Then, we built their feedback into the new designs.

The result is a flexible line of high efficiency solutions that meet all your new construction and renovation needs. No compromise necessary.

### Universal Compatibility

Trane terminal units offer flexible solutions for variable speed operation through compatibility with existing thermostats and controllers.

The open communication protocol of the Tracer™ UC400 supports seamless integration at the building system or equipment level through BACnet communication.

With a smart controls retrofit solution, there are no limits to what Trane can do for you.



### Lighten Your Load

Trane developed an exclusive application to reduce the nameplate Full Load Amps (FLA) of standard size EC motors. This eliminates wiring limitations common with renovations, bringing the benefits of Single Zone VAV to older buildings.



**Visit [Trane.com/TerminalTech](http://Trane.com/TerminalTech) for more information.**



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