



VRF Systems

*Fully integrated, pre-engineered solutions featuring
Trane® / Mitsubishi Electric VRF Equipment*





Variable refrigerant flow (VRF) systems solutions.

Trane has paired applications knowledge and expertise with its extensive equipment and controls offerings to provide variable refrigerant flow (VRF) systems solutions. This fully integrated, high-performing HVAC system solution is designed to deliver customized comfort throughout any commercial space. Regardless of the capacity, energy efficiency, functionality or performance-monitoring requirements, our VRF Systems Solutions, featuring Trane® / Mitsubishi Electric VRF Technology, are designed to exceed the comfort and sustainability goals established for commercial building projects.

One-Stop-Shop Solution

Trane is uniquely positioned to offer a one-stop-shop VRF system solution that engineers, contractors and business owners can rely on now and for years to come — backed by a vast network of pre and post-sales, engineering and support resources.

From initial design and selection to post sales, service and support, Trane is with you every step of the way. Because Trane can offer all product components, customers get the best solution for each custom project.

Built-in Expertise

Trane offers contractors and technicians installment and certification training, featuring Trane® / Mitsubishi Electric technology, at its training centers across the United States. Once a system is up and running, Trane has the unique ability to provide service and maintenance as your needs evolve and change over time.

What this means to you:

- Proper equipment sizing and selection
- Custom system design that meets the specifications and performance expectations of your commercial project
- Worry-free installation, set up and integration
- Ongoing, aftermarket service and support
- A complete solution for your next project or building

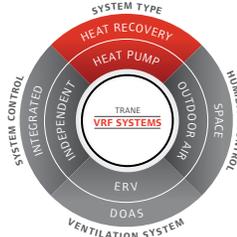
Trane offers concierge-level care from teams dedicated to providing best-in-class solutions for its customers. Your success is our success.

VRF systems design does not have to be complicated

By answering the questions on the following page, you can begin to shape a VRF system to fit your project.

1

System Type



Should the VRF system be a heat pump or heat recovery type?

Heat pump

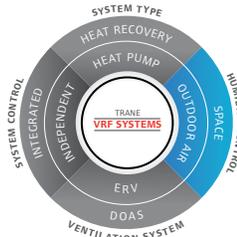
- Uses coils to heat or cool building zones
- Only able to provide cooling or heating at a single time, exclusively
- Should be used in applications with zones that experience uniform load profiles or cooling-only applications

Heat recovery

- Redirecting heating or cooling energy from one space to another
- Provides the ability to simultaneously heat and cool regardless of system operation or tenants
- Should be used for applications with dissimilar or divergent zones

2

Humidity Control



Will the ventilation air be conditioned to a predetermined supply air temperature or to ensure adequate space humidity?

Outdoor air

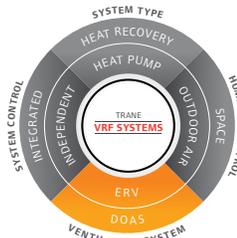
- Ventilation equipment sized to treat outdoor air to predetermined level
- Can be accomplished by using dedicated outdoor air system (DOAS) to manage only the humidity of incoming outdoor air

Space

- Air temperature is determined based upon anticipated zone humidity throughout the system
- Accomplished by heating or cooling outdoor air to meet both the latent-cooling load and the ventilation requirements for all spaces in a system
- Can only be accomplished through the use of a DOAS

3

Ventilation System



Will the ventilation air be conditioned by an energy recovery ventilator (ERV) or a DOAS?

ERV

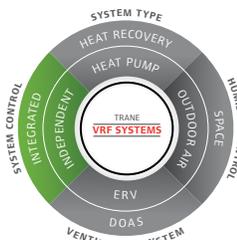
- Transfers energy from the somewhat conditioned air leaving the building, to the unconditioned air entering the building
- Serves to partially heat in the winter and partially cool in the summer
- Has limited control of outdoor air pretreatment

DOAS

- Cooling, heating and dehumidifying devices that treat the outdoor air stream independently of the recirculated air stream
- Can be designed to deliver conditioned outdoor air directly to each occupied space or the individual VRF terminals
- Makes it easier to effectively ventilate and dehumidify occupied spaces

4

System Control



How will the system be controlled?

Integrated controls

- Uses one system to control and coordinate the operation of both the ventilation and VRF terminal system

Independent controls

- Separates ventilation system and VRF terminal system control



LET'S GO BEYOND™

Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply.

For more information, please visit trane.com or tranetechnologies.com.

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VRF-SLB034-EN

March 6, 2020