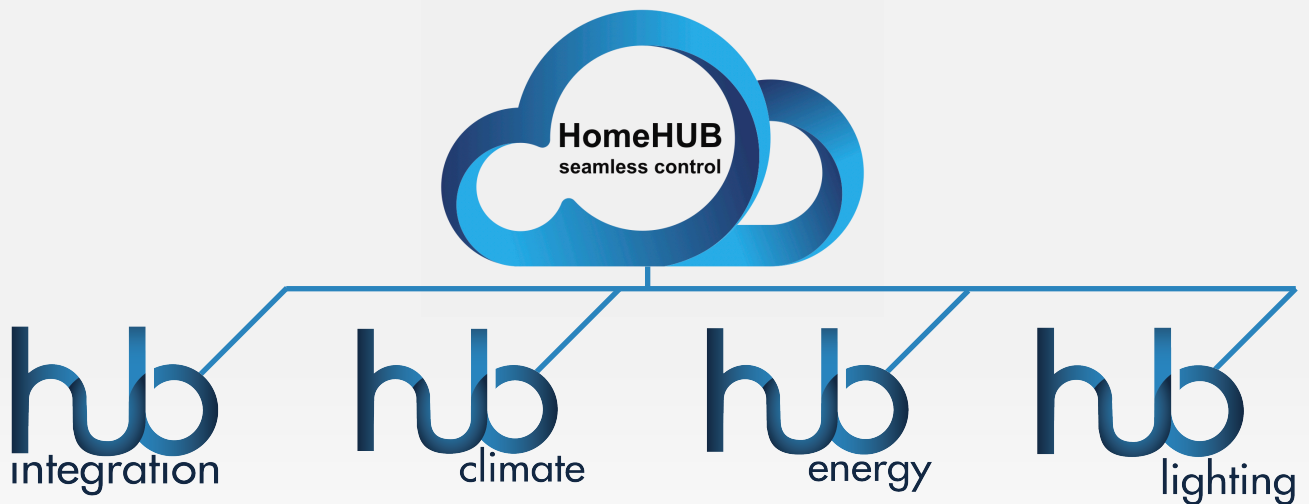




SMART HEATING AND COOLING

# Bringing Systems Together



ClimateHUB connects heating and cooling systems to the HomeHUB. HomeHUB, the most advanced automation platform incorporating multi-zone temperature control, provides a smart device gateway within the home and outside of the home. Concealed ducted, VRV, VRF, and high wall split systems are all controlled from your computer, iPad, Android or iPhone.

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## On The Wall



ClimateHUB removes the need for the outdated controller supplied with traditional air conditioning systems. In each room a HUB capacitive touch series switch or touch-pad provides access to your climate and lighting system.

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## Off The Wall



HomeHUB provides seamless connectivity, linking products from all manufacturers into a single integrated system.

# ClimateHUB Works With

## System Types

- Concealed Ducted Split Systems
- High Wall Split Systems
- Cassette Split Systems
- VRV Systems
- VRF Two Pipe Systems
- VRF Three Pipe Systems
- VRAF Systems

## Main System Brands

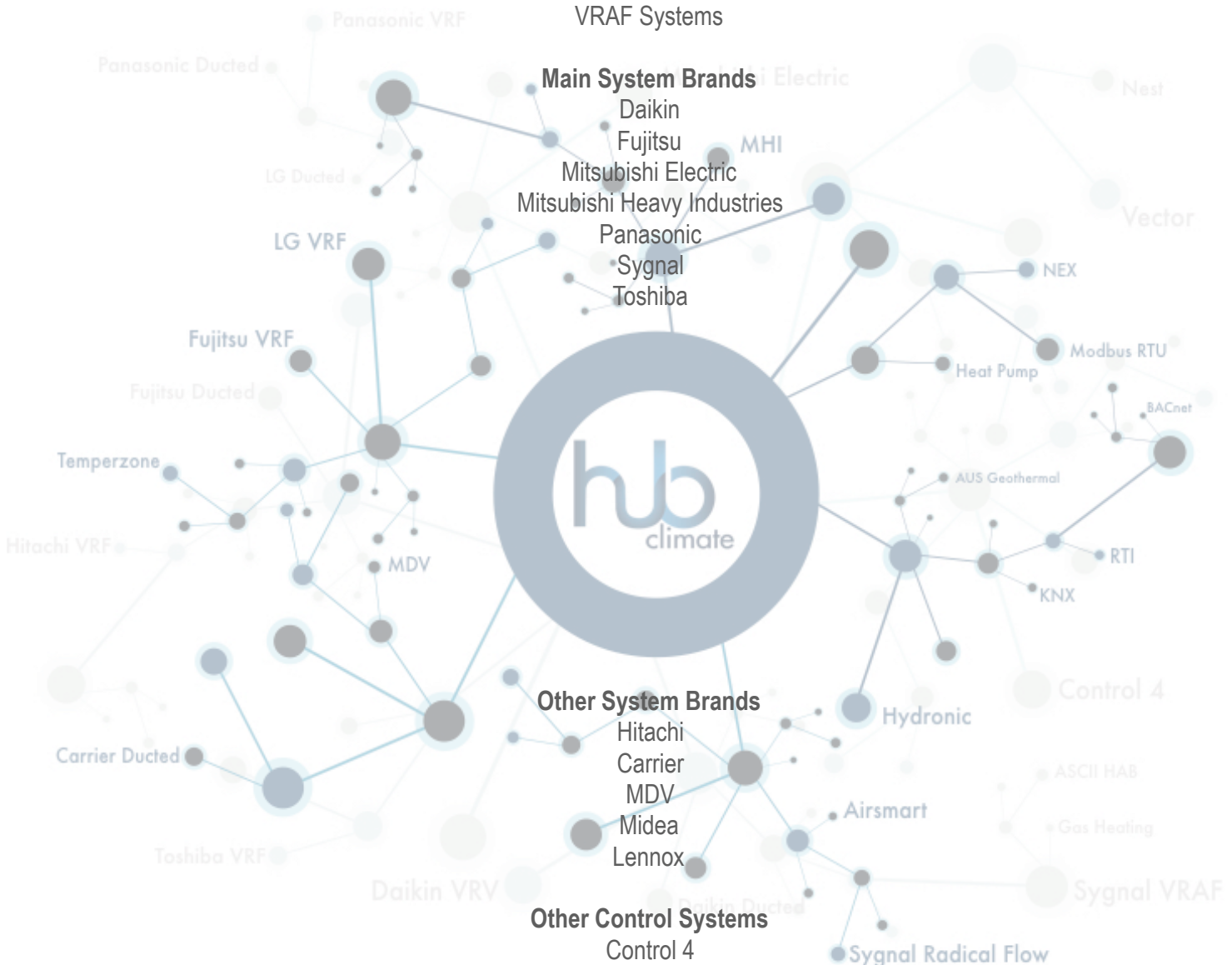
- Daikin
- Fujitsu
- Mitsubishi Electric
- Mitsubishi Heavy Industries
- Panasonic
- Sygnal
- Toshiba

## Other System Brands

- Hitachi
- Carrier
- MDV
- Midea
- Lennox

## Other Control Systems

- Control 4
- RTI
- AMX
- Nest
- Vector
- NEX
- KNX
- Dali
- Modbus RTU
- BACnet



# Three Speed Fan Split Ducted Unit

## Global Screen



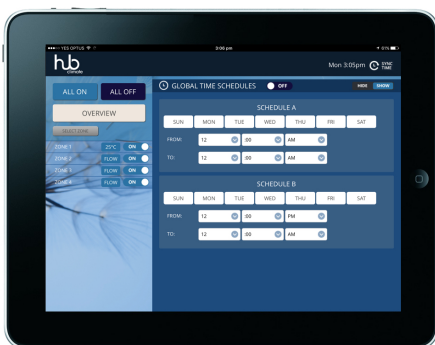
- Multi-zone Full Temperature Control (a setpoint in every room)
- Dynamic Energy Recovery (thermal banking to reduce energy use)
- Electronic Zone Labelling
- Proportional Capacity Calculation
- Proportional Airflow Calculation
- Easy Set Global Commands
- Heat, Cool, Ventilation, Fireplace and Auto Mode
- Global and Zone Time Schedules
- Supply Air Injection (Refrigerant Flow Control)

## Room / Zone Screen



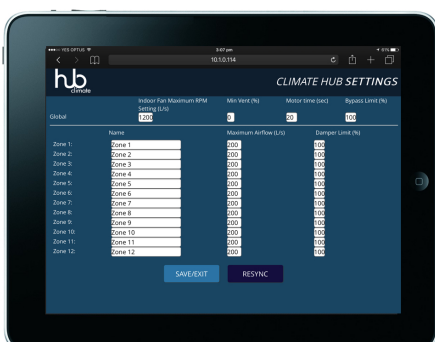
- Dedicated Room Temperature Target
- Dedicated Room Airflow Target
- Room Airflow Display
- Two Dedicated Time Schedules
- Proportional Airflow Calculation

## Time Schedules



- Event-based On/Off
- Seven Day Schedule A
- Seven Day Schedule B
- Two Dedicated Time Schedules

## Commissioning Screen



- System Airflow Adjustment
- Minimum Airflow Adjustment
- Actuator Rotation Time Adjustment
- Supply Air Scale Adjustment
- Electronic Zone Labelling
- Room Peak Flow and Airflow Scale Adjustment

# HUB Proprietary Technologies for Three Speed Fan Systems

## Heating & Cooling Demand

Conventional multi-zone temperature control systems measure the room temperature, typically modulating the room airflow over a proportional band to move the temperature in the room closer to the setpoint. ClimateHUB utilises a proprietary algorithm to determine the size of each room, then generates a cooling demand and a heating demand for every zone. The heating and cooling demand is then aggregated and used for system mode and energy calculations.

## Airflow Demand

During the commissioning phase a maximum airflow is set for each room. ClimateHUB uses the peak airflow to calculate the damper position at different fan speeds. This process limits noise and precisely matches room airflow to demand.

## Supply Air Injection

ClimateHUB is designed for electronically commutated indoor fan motors combined with DC Full Wave Inverter outdoor units. When a HUB plant control module (PCM) is connected ClimateHUB utilises Supply Air Injection to achieve variable refrigerant and air flow control. The Supply Air Injection system is a capacity control strategy unique to HUB and not available on any other multi-zone full temperature control systems.

## Dynamic Energy Recovery

The largest consumer of energy in a direct expansion vapour compression heating & cooling system is the compressor. With DC full wave inverter units compressor speed is modulated when the heating or cooling demand reduces. When all zones are at their target temperature the compressor is cycled to the off state. When cooling or heating demand increases the compressor is cycled to the on state and the process continues. Dynamic Energy Recovery when activated keeps the compressor in the off state for longer periods by utilising the central area of the home as a thermal bank. As perimeter rooms increase or decrease in temperature air is transferred from the centre of the home into the areas where heat is being gained or lost.

## Control Your System Remotely

HomeHUB connects your home to a secure server so you can control your home's climate from any location that has internet access. You can create a portfolio of your properties bringing your holiday home, your office and your home together onto a single interface.

## Cloud Cover

Preventative maintenance is important for making sure your climate control system gives you decades of trouble free operation. Your air conditioning professional would normally schedule a preventative maintenance each year and this is often a condition of the product warranty. Providing access to your home is inconvenient. Cloud Cover monitors your system performance and run time, enabling services to be scheduled only when necessary. Cloud Cover can reduce the number of services required over the life of the system by 80%. Cloud Cover also notifies you immediately if a fault occurs. Cloud Cover brings peace of mind and unsurpassed convenience.

# Two Pipe VRF

## Global Screen



- Capacity Mapping
- Global Mode Selection
- Energy Run Timer
- Electronic Zone Labelling
- Proportional Cooling Capacity Calculation
- Proportional Heating Capacity Calculation
- Easy Set Global Commands
- Global and Zone Time Schedules
- All On / All Off Function

## Two Pipe VRF AHU Screen



- Fan Speed Control
- Temperature Target / Setpoint
- Two Start Event Time Schedules
- Two Stop Event Time Schedules

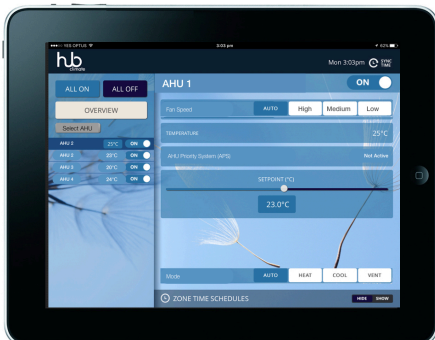
# Three Pipe VRF

## Global Screen



- Capacity Mapping
- Energy Run Timer
- Electronic Zone Labelling
- Proportional Cooling Capacity Calculation
- Proportional Heating Capacity Calculation
- Easy Set Global Commands
- Global and Zone Time Schedules
- All On / All Off Function

## Three Pipe VRF AHU Screen



- Mode Selection
- Fan Speed Control
- Temperature Target / Setpoint
- Two Start Event Time Schedules
- Two Stop Event Time Schedules

# HUB Proprietary Technologies for VRF/VRV Systems

## Electronic AHU Labelling

VRF & VRV systems are designed for slab-on-slab commercial office applications. Typically these systems are set up by a building engineer, facility manager or a technician. The use of VRF/VRV systems in a home presents a number of challenges including a central controller and a smart device gateway. ClimateHUB solves both problems by bringing all indoor units together on to a single interface. Electronic zone labelling allows each indoor unit to be named individually to clients requirements.

## AHU Priority System

The design of VRF & VRV systems limits the capacity ratio between the indoor units and the outdoor unit. In a residential home often the system designer will typically push the capacity ratio to the limit to provide air conditioning to all of the rooms at the lowest possible capital and running costs. Unfortunately VRF & VRV systems have no way of managing the system refrigerant flow when the outdoor capacity is not sufficient to meet the demand of the active indoor units. HUB's proprietary AHU Priority System (APS) monitors all active indoor units and if the required capacity demand exceeds the capacity of the outdoor unit the ClimateHUB APS is activated. ClimateHUB's APS function places low priority indoor units on hold until the higher priority room temperatures approach setpoint.

## Capacitive Touch Controllers

VRF & VRV systems are designed for commercial use. The wall controllers supplied are bulky and built to a budget price. ClimateHUB allows a stylish capacitive touch control station to be used in place of the factory control. A range of options are available from single button controllers for guest and children's rooms to touchscreen controllers that act as a central control station.

## Security Interface

ClimateHUB has a number of off the shelf interface options that link your climate control system to your security system. When you arm your security system your air conditioning will automatically turn off, conserving energy and providing peace of mind.

## Control Your System Remotely

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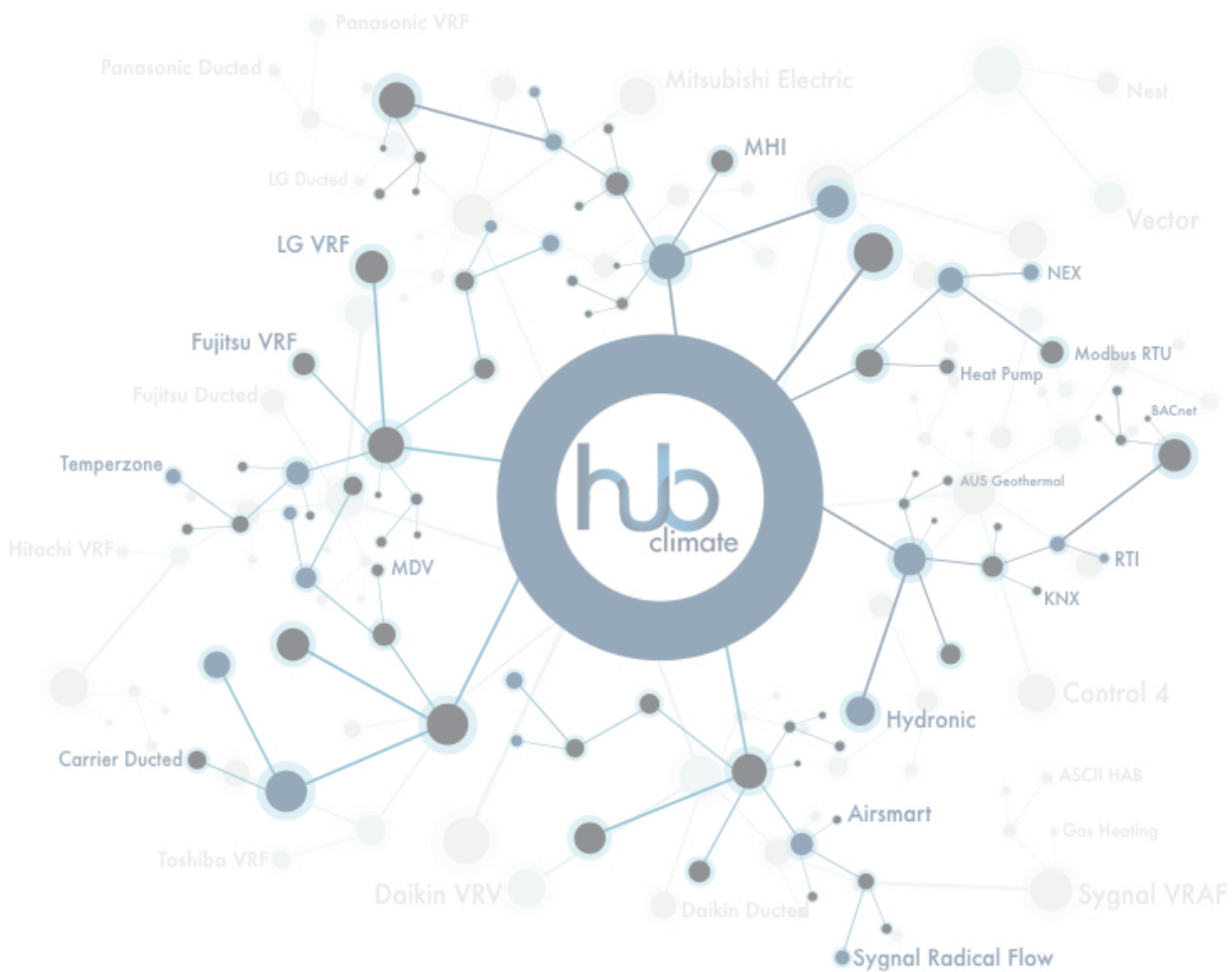


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