

Powering the recovery and rebuild

HVAC SOLUTIONS FOR HOTEL INDUSTRY

- Flexibility
- Sustainable Growth
- Heath & well-being

Johnson Controls - Hitachi Air Conditioning

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Hotel-B-2209



Cooling & Heating



Table of contents

-
- 03 About us
 - 04 Market Trends & Customer Challenges
 - 05 Our Experience & Expertise
 - 05 Value Proposition
 - 07 Hitachi hotel HVAC solutions
 - 09 A full-scale HVAC solution provider
-

About us

With over 70 years experience in air conditioning, Hitachi Cooling & Heating solutions deliver living harmony through 3 unique philosophies:

- End-to-end thinking which makes it quicker and easier to use our solutions
- Invention & re-invention – an innovation strategy that embraces the new and refines the old
- A focus on the comfort & well being of people who use indoor spaces

In 2015 the Johnson Controls-Hitachi Air Conditioning joint venture was established, combining two 100-year-old cultures and histories to create an exciting new company.

Market Trends & Customer Challenges

The worldwide hotel market was severely impacted by the coronavirus pandemic during 2020 and 2021. Towards the end of 2021, following a global drive for vaccination and relaxing of travel restrictions, the travel market and hotels have experienced a gradual re-opening.

The hotel industry now faces unique challenges related to HVAC systems in the post pandemic world: finding and meeting the needs of new types of customers, lower staffing levels, higher energy prices & tougher sustainability goals, plus the need to optimize indoor air quality (IAQ).



HITACHI HVAC SOLUTIONS FOR HOTEL INDUSTRY

Today's Challenges

New types of customer

Need to attract a balance of domestic and returning international tourism

International business travel is recovering much more slowly, BUT opportunities to serve other workers:

- 'Digital nomad' – travelling workers who want long-stay accommodation
- Home workers looking for a 'third space' between home and office
- ... means different timings on room bookings and use of spaces such as lobbies for 'hot desking'

Lower staffing levels, higher energy prices & sustainability goals

Reduced frontline & maintenance staffing; some furloughed or laid off have not returned

Focus on easy-to-maintain systems which also reduce hotel down-time

Adoption of (tougher) sustainability targets

Must find low-energy solutions that do NOT compromise guest comfort

Optimizing IAQ, promoting well-being

Rising global awareness of IAQ issues – even pre-pandemic

Airborne virus a concern to guests & staff; need to demonstrate action

Ventilation, filtration and air conditioning is an important aspect of indoor health

'Well-being' is a popular trend with related services including re-designed interior spaces, spas, health treatments and 'experiences'

OVERVIEW

Our Experience & Expertise

With a global presence, we have deep industry expertise and end-to-end capabilities that make us a trusted partner for hotel industry leaders. We help them to deliver on the promise to their guests of a comfortable, and healthy environment by providing advanced technology and sustainable solutions.



Our Value Proposition

Hitachi Cooling & Heating provides a full range of air conditioning solutions that are flexible for changing needs, support the sustainable growth of your business and enhance comfort and well-being for your guests.

New types of customer

Do you have difficulty finding space for HVAC equipment or wish you could more easily re-configure it for changing needs?



Flexibility

Integrate HVAC seamlessly into building plans or refurbishments with flexible solutions that can adapt to changing needs

Lower staffing levels, higher energy prices & sustainability goals

Are your energy bills and maintenance costs increasing?



Sustainable growth

Whether new build or a refurb, reduce energy costs, simplify maintenance and meet your sustainability goals

Optimizing IAQ, promoting well-being

Are you investing in new or revamped spaces for improved guest comfort and experience?



Health & well-being

Creating safe, comfortable and relaxing spaces for guests with Hitachi's 3R framework – right temperature, right feeling, and right purity



Our HVAC solution for hotels

Large conference hotel

Guestrooms

IDU
Ducted or Floor Concealed units

IAQ
ViroSense AQtiv-Ion Kit Total Heat Exchanger for ventilation

Controllers
Wired remote controls with attractive design and easy to use



Conference Rooms

IDU
4-way Ceiling Cassette with Silent-Iconic panel for seamless design integration

IAQ
ViroSense Z2 filter
Total Heat Exchanger for ventilation

Controllers
Wired remote controls with attractive design and easy to use



Guestrooms, Restaurants & Gym

Topflow VRF
One comprehensive solution delivers comfort and efficiency



Independent Coffee Shop

Primary large single split
Reliable, easy to maintain and inexpensive



Hotel HVAC management solution

- H-LINK wiring network connecting all HVAC systems
- Connect to BACnet BMS system via adapter
- Touch screen central controller
- airCloud Pro IoT app and SW for remote maintenance



Resort hotel

Wellness Centre including spa & gym

IDUs
4-way Ceiling Cassette with Silent-Iconic panel for seamless design integration and intelligent sensors for advanced comfort features Ultra-quiet Ducted units

IAQ
ViroSense Z2 filter for cassettes ViroSense AQtiv-Ion Kit for Ducted unitsTotal Heat Exchanger for ventilation



Banqueting Hall

Air-cooled scroll chiller for high efficiency in large spaces



Remote Service Centre

Primary large single split
Easy to maintain and change if building usage changes



Indoor Swimming Pool

Water cooled screw chiller for removing humidity



Hotel HVAC management solution

- H-LINK wiring network connecting all HVAC systems
- Connect to BACnet BMS system via adapter
- Touch screen central controller
- airCloud Pro IoT app and SW for remote maintenance



Guestrooms, Restaurants & Wellness Centre

Topflow VRF
One comprehensive solution delivers comfort and efficiency



Guestrooms

IDU for guest rooms
Ducted or Concealed units



IAQ for guest rooms
Total Heat Exchanger for ventilation

Controllers
Wired remote controls with attractive design and easy to use



Our HVAC solution for hotels

City hotel

Guestrooms

IDU
Ducted or Floor
Concealed units

IAQ
Total Heat Exchanger
for ventilation

Controllers
Wired remote controls
with attractive design
and easy to use

Guestrooms, Restaurant & Lounge

SideSmart VRF
One comprehensive solution
Requires less outdoor space
than traditional VRF

Hotel HVAC management solution

- H-LINK wiring network connecting all HVAC systems
- Touch screen central controller
- airCloud Pro IoT app and SW for remote maintenance

Independent Shop

Primairy large single split
Reliable, easy to maintain
and inexpensive

Restaurant, Lounge & Lobby

IDUs
4-way Ceiling Cassette
Ultra-quiet Ducted units

IAQ
ViroSense Z2 filter for cassettes
ViroSense AQtiv-Ion Kit for Ducted units
Total Heat Exchanger for ventilation

A full-scale HVAC solution provider

VRF | a flexible solution for spaces throughout the hotel



guest rooms

- Quiet rooms
- Clean air
- Easy control

Hitachi Solutions

Range of IAQ solutions
including filters and ionizers
provide cost-effective ways to
improve air quality in guest
rooms without installing
separate equipment



kitchens

- Oil-proof cabinet
- Oil-proof controller
- Easy-to wash filter

Ceiling Suspended units
can direct airflow up to 8m
away, making them ideal for
kitchens where cooler air
needs to be dispersed over
a wide area



restaurants,
bars & lounges

- Higher rates of air flow
and air-renewal
- Avoid direct airflow on
guests

Automatically direct airflow
away from people to avoid
creating draughty spaces in
restaurants, bars and lounges.
Requires compatible 4-way
Cassette with Twin-Sense
panel



gyms & spas

- High air-flow rate
- Ventilation may be needed
- Automatic control of AC
based on occupancy to
save energy

Total Heat Exchanger is a 2-
way ventilation unit that
expels dirty indoor air and
brings fresh air indoors, while
using heat recovery to reduce
energy consumption



lobbies

- Adequate zoning to
ensure even temperature
distribution
- High ceilings and large
windows require efficient
cooling and heating
solutions

**Build HVAC networks of up
to 160 indoor units across 64
independent control zones
with H-LINK wiring and
modular VRF solutions**



meeting rooms

- Adequate zoning to ensure
even temperature
distribution
- Automatic control of AC
based on occupancy to
save energy

**Twin-Sense Panel with
CrowdSense** automatically
adjusts loading to account
for occupation density in the
area covered by each indoor
unit



mid-sized
banqueting spaces

- Ducted solutions that
blend into interior design
features
- Variable occupation
density depending on the
type of event hosted,
requiring a HVAC solution
that can efficiently adjust
in real-time
- High capacity solutions
needed for large open
spaces

Range of ducted indoor units
with different capacities and
adjustable ESP settings,
enabling placement further
away from ODUs

A full-scale HVAC solution provider

VRF | a flexible solution for spaces throughout the hotel

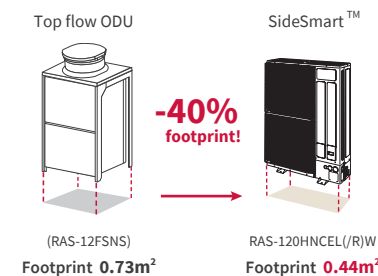


Flexibility

VRF equipment is compact compared to conventional 'packaged' HVAC units and can also be installed with pipes rather than ducts, saving ceiling plenum space. The modular nature and our wide variety system types provide great flexibility for hotels.

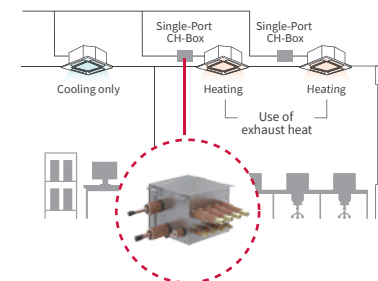
Space-Saving SideSmart

Up to 40% smaller than standard outdoor VRF units, enabling placement on balconies, indoor equipment rooms or rooftops with limited space. Transports easily in elevators making installation cheaper.



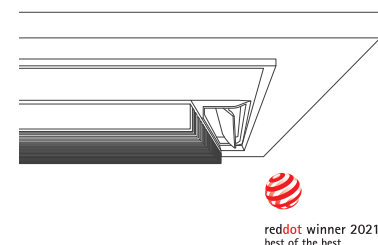
Compact Heat Recovery Systems

For simultaneous cooling & heating, our patented CH-Box eliminates condensation while being small from just 19x30x21cm in size, helping realize higher ceilings in guest rooms and noise-free operation.



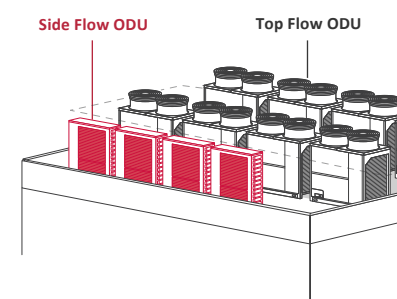
Premium Design

Our unique Silent-Iconic cassette panel combines the benefits of smaller ceiling plenums for non-ducted systems with the visually silent appearance of a ducted unit. Streamlined 4-way air outlets appear as slits, minimizing their visual impact, looking contemporary and minimalist.



Modular Flexibility

200m piping runs support installation of ODUs further away from guest areas, minimizing noise and enabling them to be hidden. Modular system can be added to over time, so you can finish a hotel refurb floor-by-floor based on operational needs or defer installation costs in multi-use buildings where spaces are not yet let to other tenants.



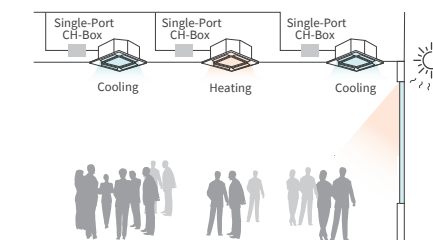
Sustainable Growth

Resuming business post-pandemic while also investing in future growth is a common requirement in today's hospitality industry. Consider Hitachi VRF solutions as a way of reducing future energy bills through both designed-in efficiency of the solution and intelligent management that proactively reduces power consumption and requires less maintenance.

Efficiency designed-in

EER up to 5.1 (Top Flow VRF) or 4.51 (SideSmart VRF)

Heat Recovery configurations enable waste heat to be re-used in areas of the hotel which are naturally cooler due to their facing aspect, saving energy bills and improving temperature consistency through the building

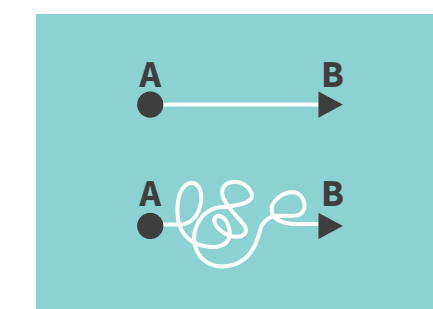


Less is more

Purchase fewer outdoor units with unit capacities up to 120HP and 200% IDU to ODU connection ratio

Easier installation with H-LINK wiring: connect units together in any order using the shortest or easiest path

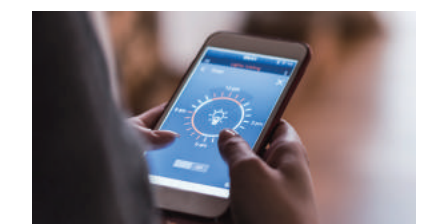
Faster configuration and maintenance with airCloud Tap – copy & paste settings to multiple ODUs from a phone and download operational data faster



Smart Energy Management

Eco Genius – an Active Set-Point Management tool built into airCloud Pro software which enables optimization of cooling & heating based on off-peak energy pricing

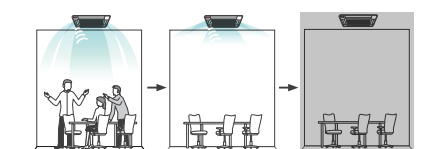
Software and hardware controllers can place caps on power consumption during peak pricing periods and offer modes to moderate capacity



Intelligent operation

For areas with light traffic during parts of the day, (e.g. lounges, restaurants, gyms), **Auto-Save** enables individual units to automatically reduce output when spaces are vacant and shutdown after a prolonged period of vacancy. Available on a range of units with optional motion sensor kit.

For guest rooms, **Setback Mode** enables interlock with a hotel key card so that AC is activated based on room occupancy, whilst also setting a baseline temperature to be maintained when guests are out



A full-scale HVAC solution provider

VRF | a flexible solution for spaces throughout the hotel



Sustainable Growth

Resuming business post-pandemic while also investing in future growth is a common requirement in today's hospitality industry. Consider Hitachi VRF solutions as a way of reducing future energy bills through both designed-in efficiency and intelligent management that proactively reduces power consumption and maintenance costs.

Efficient Ventilation

Ventilation enables better air quality but at the same time it can increase energy bills by reducing the efficiency of an AC system. Our **Total Heat Exchanger** - a 2-way ventilation unit - can reduce your annual electricity consumption up to 36%* if replacing a ventilation fan. It does this by using heat recovery to bring outdoor air closer to the required indoor air temperature.

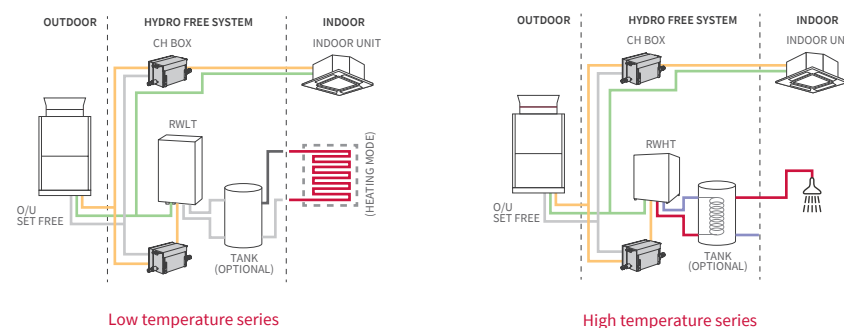
*Simulation; Tokyo, operation 8am-18pm, office, 135m², Econofresh*800, Indoor temperature 25C, based on weather data Feb 16, 2020, Cooling/Heating operation



Domestic Hot Water built-in

Hydro Free unit can be installed in a VRF Heat Pump or Heat Recovery system using the refrigerant loop to provide domestic hot water to various parts of a hotel, whether guest rooms or kitchens, for example.

- Can connect to a hot water storage tank for onward use as domestic hot water in guest bathrooms, commercial kitchens, or even in floor heating and radiators
- Suitable for refurb and modernization projects – easily connects to existing tanks and/or under-floor heating or radiators
- Water output ranging from 7C to 45C (regular model) or up to 80C (High Temperature model)
- Reduces operating costs and improves energy efficiency compared with a traditional electric water heater or gas boiler
- Ultra compact design can be installed on a wall; weighs from just 30-129kg
- All internal components are easily reachable with access to all piping connections underneath the unit
- Hydro Free High Temperature module uses a second compression cycle to boost water temperature up to 80C only when needed – saving energy and removing the need for a direct electricity-powered heating filament



Health & Well-being

Whether guests are visiting for relaxation, a business trip or staycationing, more than ever hotels are expected to provide a comfortable environment while also taking reasonable precautions to reduce transmission of viruses and germs. Hitachi's 3R philosophy is a useful framework for considering HVAC solutions that can contribute to the health and well-being of hotel guests.

Right temperature

Precise and accurate temperature control with the following features available..

- **SmoothDrive** uses intelligent trend analysis to directly deliver the precise amount of cooling or heating to meet demand at any given moment, improving temperature stability compared with other VRF systems
- In heating mode **FeetWarm** prevents cold floors by detecting a temperature drop on the floor from a sensor in the ceiling cassette and directing warm air to the floor level
- In cooling mode **FloorSense** prevents over-cooling of the floor by detecting floor temperature and adjusting airflow



Right feeling

Control airflow for guest comfort with **Direct/In-Direct airflow control** options. Ideal for spa treatment rooms, restaurants and lounges.

A motion sensor divides the room into 4 areas and can detect human presence in each of them, directing air towards or away from people according to the selection option.

Available with Twin-Sense cassette panel.



Right purity

ViroSense S filter now fitted as standard on all VRF cassette and some ceiling suspended units, providing > 99% inhibition of viruses (exc. SARS-CoV-2) and bacteria.

ViroSense Z2 filter available as an optional upgrade on 4-way cassettes, with proven SARS-CoV-2 inhibition of >99.9%.

AQtiv-Ion Kit for ducted units. Generates negative ions and emits through AC airflow, which bind to pollutants sending them harmlessly to the floor. >99.9% inhibition of SARS-CoV-2.

Total Heat Exchanger - a 2-way ventilation unit that expels dirty indoor air and brings fresh air indoors with airflow capacity options from 150-5,000 m³/hr covering small or large spaces

A full-scale HVAC solution provider

VRF SOLUTIONS



Top Flow VRF

Hotels with adequate roof space
Looking to maximize energy savings

Key Specs & Features

- Scalable modular system
- Up to IDU 200% connection capability
- Single ODU cabinet up to 120HP capacity
- EER up to 5.10
- Heat Recovery option for best energy efficiency in seasonal climates and buildings with large variations in ambient conditions
- Low & High Ambient options
- airCloud Tap available for faster service & maintenance



SideSmart VRF

Hotels where outside space is very limited but can use ground, balcony or indoor equipment rooms with louvred ventilation

Key Specs & Features

- Scalable modular system
- Single ODU cabinet up to 18HP
- 40% smaller footprint than TopFlow VRF - from just 420mm deep and 1050mm wide
- EER up to 4.51
- Designed for indoor equipment rooms with 60Pa ESP setting enabled. Hot air is discharged from the side enabling more effective dispersal



Indoor Units

Wide variety of indoor units including concealed, floor, ceiling suspended, cassette, ducted and wall mounted

- More than 100 models to choose from
- Award-winning **Silent-Iconic** cassette panel for better interior design but without the cost and installation complexity of ducted units
- Intelligent sensors enabling advanced comfort features like **CrowdSense** which automatically adjusts loading to account for occupation density, **FeetWarm** and **FloorSense** which prevent cold air at the floor level
- For areas with light traffic during parts of the day, (e.g. lounges, restaurants, gyms), **Auto-Save** enables individual units to automatically reduce output capacity when spaces are vacant and shutdown after a prolonged period of vacancy.



Indoor Air Quality

Ventilation units, filters and ionizers enabling upgrades in indoor air quality without excessively increasing running costs

- **ViroSense S filter** now fitted as standard on all VRF cassette and some ceiling suspended units, providing > 99% inhibition of viruses (exc. SARS-CoV-2) and bacteria
- **ViroSense Z2 filter** available as an optional upgrade on 4-way cassettes, with proven SARS-CoV-2 inhibition of >99.9%
- **AQtiv-Ion Kit** for ducted units. Generates negative ions and emits through AC airflow, which bind to pollutants sending them harmlessly to the floor. >99.9% inhibition of SARS-CoV-2
- **Total Heat Exchanger** - a 2-way ventilation unit that expels dirty indoor air and brings fresh air indoors with airflow capacity options from 150-5,000 m³/hr covering small or large spaces. Uses heat recovery to bring outdoor air closer to the required indoor air temperature, reducing energy consumption



A full-scale HVAC solution provider

VRF SOLUTIONS

Physical Controllers

Central Controllers

- Operate up to 160 indoor units across 64 independent control zones
- Visualize energy consumption, errors and program 140+ settings
- Synchronize time/date with individual controllers in guestrooms

Room Controllers

- Stylish room controllers, ergonomically designed for better haptics
- Hotel Setback temperature with interlock to key card
- Temperature limit setting: prevent excessive use
- airCloud Tap compatible: engineers can copy/paste commissioning settings for all guestroom controllers using their phone via NFC

Wireless Controllers

Handheld remotes ideal for bungalows and beach resorts.
Our latest Room Controllers include an integrated IR receiver so no need to purchase separately



IoT Controls

airCloud Pro

- Smartphone app and browser-based PC software
- Requires airCloud Pro Gateway adapter to connect HVAC system to the internet
- Enables remote management of HVAC system by offsite personnel, who can manage multiple sites/hotels through a single interface
- Visualization of energy consumption by zone
- Error & filter cleaning notifications for each IDU
- Eco Genius - an Active Set-Point Management tool built into airCloud Pro. It enables building managers to optimize cooling & heating based on off-peak energy pricing

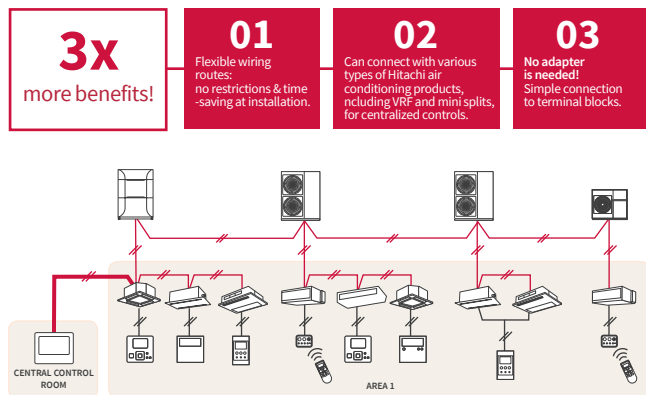


H-LINK Wiring

- Hitachi's proprietary wiring system enables all units and controls to form a single network, regardless whether they are distributed across one or more refrigerant systems.
- Easier installation with H-LINK wiring: connect one or more refrigeration systems via any IDU or ODU – simply connect from one unit to the next on the shortest or easiest path
- Connect Hitachi PAC systems to the same control network as a Hitachi VRF system using the PRIMARY H-LINK Adapter

Connection to BMS

Connect to a BACnet Building Management System using our BACnet adapter, enabling integration with lighting, security and fire alarm systems.



A full-scale HVAC solution provider

PRIMARY| a cost-effective solution for independent areas or separate buildings



 independent shops & cafes	 isolated spaces	 refurbs & retrofits	 server/equipment room
Independently operated spaces which may have separate energy billings and operating hours • Areas not operated by the hotel and which may have separate utility billings • Space might be tenanted later than the hotel so a low-cost retrofit solution is preferred	Separate smaller buildings, for example small gyms, lounges or cafes in resort hotels • Not feasible to run refrigerant piping from main buildings • Spaces may change use and therefore require retrofit	When it's not practical to install VRF due to cost or lack of space to install piping across multiple rooms • Historical or converted buildings where installation of VRF piping is not possible • Retrofits to areas which previously did not require air conditioning	Rooms for computer servers and other electronic equipment • Require a stable, cool temperature • May be installed in addition to another HVAC system as a back-up • Isolated from main HVAC system in the event of servicing or faults
Hitachi Solutions			
PRIMARY includes a choice of indoor units including 4-way Cassette, Ducted and Floor/Ceiling convertibles for different tenant needs	With H-LINK wiring and an adapter, even isolated spaces using PRIMARY can be connected to a Hitachi VRF network, providing seamless central control	PRIMARY Floor/Ceiling convertibles require minimal installation work making them suitable for some refurb scenarios	PRIMARY units include an internal drain pan reducing the risk of blockage from dust and debris, making them more reliable when used for server rooms

A full-scale HVAC solution provider

PRIMAIRY | a cost-effective solution for independent areas or separate buildings



Flexibility

PRIMAIRY are 1:1 split units that can be used when installation of multi-room VRF pipework or ducts is not possible or unnecessary. This includes isolated spaces, independently operated areas of hotels, or refurb and retrofits which may be changing the use of a space post-pandemic.

Compact units for single or multi-storey buildings

Outdoor units can be installed at ground level, small ledges or roofs of low-rise buildings, weight from just 19kg weight and 236×580mm footprint.

Outdoor units can be placed up to 30m above or below indoor units, making them suitable for multi-storey accommodation buildings up to 8 or 9 floors.



Flexible ducting routes

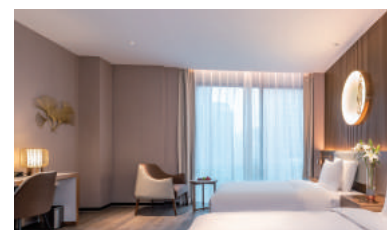
Hotel accommodation and service areas are more likely to have recesses and areas where AC ducts can't be routed. PRIMAIRY's wide external static pressure (ESP) range from 60-120Pa allow longer ducts with more turns to be installed without impacting air pressure, increasing the flexibility of placement between indoor and outdoor units.



Indoor units for every space

Choose from a range of indoor units:

- 4-way cassettes for large open spaces like gyms and cafes
- Low profile ducted units from just 190mm height for premium guest accommodation
- Convertible floor/ceiling units for low-cost retrofits



Fire alarm connection

Outdoor unit includes a PCB connector for wiring connection to a fire alarm and enabling automatic shutdown to prevent the spread of smoke.

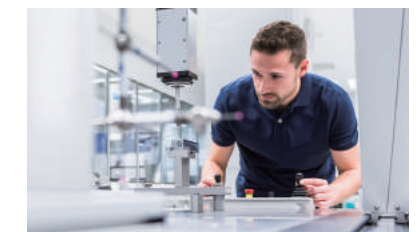


Sustainable Growth

Many hotels are looking to re-design spaces to attract guests. PRIMAIRY has lower up-front investment than a VRF system but can still deliver operational energy cost and maintenance savings compared with many other split-systems or packaged units.

16-step compressor control for energy efficiency

Efficient DC motors and 16-step inverter compressor control enables more precise adjustments in output to use just enough energy to maintain the desired temperature.



Preventative maintenance

Small details in PRIMAIRY units add up to a big difference in maintenance costs...

- Hydrophilic aluminum coating prevents water and mineral deposits on the heat exchanger, helping to maintain long-term energy efficiency
- Automatic refrigerant level monitoring
- Internal drain pan reduces the risk of blockage from dust and debris
- Automatic blockage detection triggers shutdown rather than risking water damage to buildings
- Easy to remove and wash indoor unit filters without requiring a HVAC technician



Guest room energy saving

Integrate hotel key card system into operation of the AC for guestrooms to enable auto on/off operation based on occupancy.



A full-scale HVAC solution provider

PRIMAIRY | a cost-effective solution for independent areas or separate buildings

Health & Well-being

Although hotel guests have heightened awareness of air quality and virus transmission, they are also looking for comfort and relaxation. PRIMAIRY enables hotels to control temperature and airflow while minimizing noise.

Fresh air inlet function

Optional 1-way ventilation port on indoor units. Sucks outside air into the unit via a pipe, and blends it with conditioned air enabling poorly-ventilated areas



Ultra-quiet 26dB ducted units

For noise-sensitive areas including guest accommodation, spas and relaxation rooms, select our ultra-quiet ducted units from just 26dB-33dB on low-high fan speeds



Advanced airflow control with 4-way cassette

- Horizontal-vertical powered louvre adjustment for complete flexibility in airflow direction
- For rooms with high ceilings, for example lobby areas, a special mode can be enabled automatically adjusting airflow to compensate (requires HCWA21NEHH wired controller)



A full-scale HVAC solution provider

PRIMAIRY SOLUTIONS

PRIMAIRY

- For isolated spaces and separate accommodation buildings in a hotel including resort villas
- Independently operated shops & cafes within hotels
- Refurb and retrofit projects, including changing the use of hotel spaces, or where it's not practical to install VRF due to cost or lack of space for piping

Key Specs & Features

- 1:1 split system with capacities up to 6.5tons (23kW)
- Choice of inverter model for lower running costs or fixed speed
- Choice of Ducted, Cassette or Floor/Ceiling Convertible indoor units
- Heat Pump, Cooling Only, Low and High Ambient types



Indoor Units

Choose from 3 types of indoor unit based on the type of hotel space.

- **4-way Cassettes** are ideal for large open spaces with higher ceilings including lobbies, lounges and ports facilities.
- Effective from heights of up to 5.5m with high ceiling operation mode
- 4-direction air flow with horizontal-vertical powered louvre adjustment



- **Ducted** units for premium spaces where seamless integration into interiors is important.
- Low height profile from just 190mm
- Near-silent operation from just 26dB; ideal for guest accommodation



- **Floor/Ceiling Convertible** units can be mounted on the wall at floor level or the ceiling.
- No need for ducting or for running piping through a false ceiling
- Cost-effective way of adding AC to a hotel space that's changing use.



Indoor Air Quality

- **Optional 1-way ventilation port** on indoor units. Fresh air from outside can be led into the room via a pipe, and blends it with conditioned air enabling poorly-ventilated areas.
- **Total Heat Exchanger** - a 2-way ventilation unit that expels dirty indoor air and brings fresh air indoors with airflow capacity options from 150-5,000 m3/hr covering small or large spaces

Controllers

Choice of wall-mounted controller with large LCD display or handheld remote control



Integrate with a Hitachi VRF System

Connect to a Hitachi VRF system using the PRIMAIRY H-LINK Adapter, enabling control of PRIMAIRY units from a central VRF controller



A full-scale HVAC solution provider

CHILLERS | reliable & efficient solution for large spaces



- Air-cooled, Water-cooled or Centrifugal
- Proven high-quality Hitachi compressor inside
- Available as Heat Pump or Cooling Only
- From 64.5kW to 1,808kW capacity per unit



lobbies

- Can be difficult to efficiently cool or heat due to frequently-opened doors, often large glass walls and high ceilings
- Possibility for significant energy savings with a more efficient HVAC solution



banqueting & conference centers

Variable occupation density depending on the type of event hosted, requiring a HVAC solution that can efficiently and precisely adjust accordingly



spas & indoor swimming pools

High-humidity environments which if not properly managed will lead to building damage and odors

Hitachi Solutions

Water-cooled chiller solutions with IPLV of up to 9.93 for incredible energy efficiency

Variable Frequency Drive (VFD) technology and an electronic expansion device with 500-step flow resolution, enable precise capacity matching from 25-100% load

Modular air-cooled inverter chiller solution can be used in combination with air handling units to dehumidify and if necessary, re-heat spaces of varying size



Flexibility

Our range of air and water-source chillers enable flexibility in how capacity is scaled up or down as hotel usage requirements change, space-saving designs, and adaptable water temperature parameters to optimize efficiency under high or low load.

Scalable capacity

Suitable for open spaces from a few hundred square meters to over 10,000m². Up to 16 **Air-Cooled Modular Inverter Chillers** can be connected to provide capacity from 65kW to >2,000kW while being easy to re-size the system by adding or removing modules.



Space-saving & flexible installation

Air-Cooled Modular Inverter Chillers do not require a chiller plant room or condenser side piping. They have a footprint of just 1.37*1.2m and require only 0.5m between units, making them suitable for rooftop placement in a variety of layouts from “L” shape for corner spaces to “U” or “Z” shape placement around obstacles or architectural features.



Wide temperature adjustment range

Variable Speed Water-Cooled Chillers can work with a wide range of water temperatures, maximizing efficiency in different climates and loading factors. Supports chilled water output range from 4-15°C with 0.5°C adjustment accuracy, and condenser output range from 22-40°C



Heating & cooling in any weather

Air-Cooled Modular Inverter Chillers can operate in ambient temperatures from -15°C (or -25°C for Low Ambient model) to 43°C and include a smart defrosting mode for cold climates.



A full-scale HVAC solution provider

CHILLERS | reliable & efficient solution for large spaces

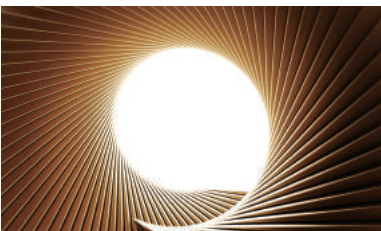


Sustainable Growth

The operating costs of a chiller in a hotel will reach at least 10x the initial cost of the equipment, so accurately meeting the required cooling or heating load can provide significant energy savings over the lifetime of the unit. In hotels this load can fluctuate significantly throughout the day, whether because of event spaces with different occupant densities, or changing ambient conditions outside impacting hotel lobby areas.

Designed for efficiency

Air-Cooled Modular Inverter Chillers feature a heat exchanger with internal copper tube threads to increase heat transfer area, and an electronic expansion valve with 500-step flow resolution for precise capacity matching from 25-100% load. These technologies help to achieve an IPLV of 6.06 / COP 3.0.



IPLV up to 9.93 (COP 5.9)

Variable Speed Water-Cooled Chillers have 15-100% stepless capacity control range, so they can efficiently meet the needs of changing cooling demands through the day.



Servicing without downtime

Air-Cooled Modular Inverter Chillers can function independently of each other, so if one unit is being serviced another can run as normal, which means servicing and maintenance doesn't need to impact hotel event schedules



40+ years building compressors

With over 200,000 twin screw compressors sold since 1979, the latest compressors in our **water-source screw chillers** include multiple failure safeguards including a pressure-differential driven oil system which removes the need for an oil pump and a semi-hermetic structure with a built-in refrigerant-cooled motor.



A full-scale HVAC solution provider

CHILLER SOLUTIONS



Air-Cooled Modular Inverter Scroll Chillers

- Hotels with roof space
- Hotels with conferencing or banqueting facilities, large lobby areas or indoor swimming pools
- Looking for a scalable solution with flexibility to meet changing needs and expansion
- Looking for cooling or cooling & heating solution



Key Specs & Features

- Scalable modular system
- IPLV up to 6, COP up to 3.0
- Choose from 65kW or 130kW modules
- Heat Pump, Cooling Only and Low-Ambient options
- 4.3" color control panel and remote management options via ModBus/RS-485 communication module



Variable Speed Water-Cooled Screw Chillers

- Hotels with large banqueting or conference halls looking for maximum possible energy efficiency
- Hotels where outside space is limited but an indoor plant room is available
- Require cooling solution only



Key Specs & Features

- Scalable modular system
- IPLV up to 9.93, EER up to 5.9
- Range of capacities from 542-1808kW
- Connect up to 8 units on a H-LINK network and operate remotely
- Cooling Only
- 4.7" color control panel and remote management options via optional ModBus/RS-485 communication module