

HITACHI

HEAT PUMPS

Technical Guide

Utopia: Premium Inverter



Utopia Premium Inverter

Key Benefits of a Hitachi Premium Inverter Multi-Head System

- Five different indoor styles and four outdoor units with varying capacities allow for greater system customisation
- Combining up to six indoor units running off a single outdoor unit allows you to preserve space and save on installation and running costs
- Indoor units can operate independently of each other and at different temperatures allowing for greater control and energy savings
- A comprehensive range of intelligent Hitachi controllers allow for precision control of individual or combined areas
- Benefits of having a variety of indoor units e.g eliminate air cross contamination, less ducting reduces duct loss conserving fan power
- Utopia Premium Inverter is a mini VRF equivalent
- Runs on single phase 230V power

Utopia Premium Inverter Range

The Hitachi Utopia Inverter range of heat pump air conditioners is designed to provide effective and economical air conditioning for offices, shops, restaurants, residential homes and separate or isolated areas within large premises.

Hitachi Utopia Premium Inverter systems have the versatility of combining multiple indoor units to a single outdoor unit. Choose a simple one-to-one connection or a combination of up to 6 indoor units made up of ducted, cassettes, underceiling and wall mounted styles all run from a single outdoor unit with individual or joint controls. The system can be customised to suit specific applications whether that be for shop, home or office.

Key Features

DC Inverter Technology

Hitachi Inverters are designed to reduce electricity usage as much as possible by self-adjusting their output up and down as conditions vary through the day to ensure only the minimum power, and no more, is used at any particular time to maintain a consistent air temperature.

6 Year Warranty



The Premium Inverter range is reliable, thoroughly tested, built to last and carries a 6 Year Parts & Labour warranty which is backed by Temperzone Ltd – the NZ distributor of Hitachi heat pumps and the leading air conditioning manufacturer in New Zealand.



Ducted Type (RPI)



Cassette Type (RCI)



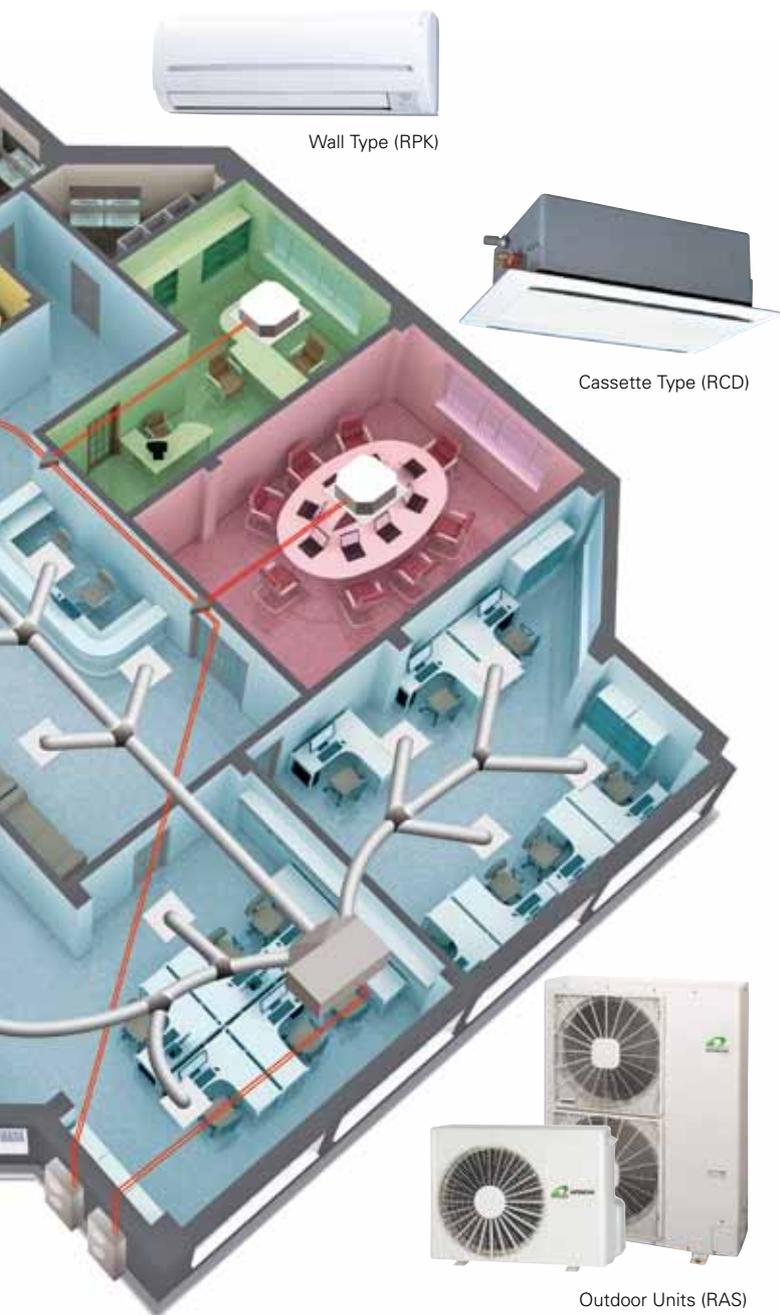
Wall Controllers



Wireless Controllers



Half Sized Wall Controllers



Wall Type (RPK)

Cassette Type (RCD)

Outdoor Units (RAS)



Ceiling Type (RPC)



Auto-Changeover Control

Hitachi Premium Inverter systems heat and cool. As conditions alter Auto-control changes the unit from heating to cooling automatically, as required, maintaining the temperature without user intervention. The Premium Inverter range is a two pipe system so every unit must run in the same mode i.e. all heating or all cooling.

Quiet Operation

The system has been designed using the latest noise reduction techniques to ensure they are not intrusive. Night shift noise reduction is available on outdoor units.

Non Ozone Depleting Refrigerant

The system uses R410A refrigerant which is non-flammable with zero ozone depletion.

Fresh Air Input

Fresh air from outside is essential, indeed required, in many applications. Both the Cassettes and the Ducted units are designed to be able to draw air from the outside and mix it in with conditioned air to ensure there is always a proportion of fresh air in the air supplied.

Hitachi Set-Free/IVX Compatibility

As Utopia Premium Inverter systems utilise the same indoor units and common controls they can be used in conjunction with Hitachi VRF and IVX systems, i.e. larger capacity systems.

Energy Efficient

Each indoor unit is able to independently self adjust to match the load which allows for a better energy efficiency. 4-way cassettes can be installed with motion sensors for further efficiency.

Area Zoning

The Premium Inverter system can provide dedicated air conditioning to separate spaces allowing for separate billing areas e.g multi-tenanted residences, and also reduced coverage, e.g. when office spaces are not being fully utilised - some units can be switched off.

Long Pipe Lengths

With a maximum piping length of 75m and height difference of 30m these systems can accommodate a wide range of installation projects such as office blocks, multi-tenanted residences and large homes.

Intelligent Controls

Hitachi Premium Inverter systems utilise the same controls and features as larger Hitachi VRF systems.

Units are able to accept inputs from external controls e.g. remote stop/start, fire alarm, external thermostat. System outputs are also available, e.g. fault conditions, mode (heat or cool), thermostat on.

A fully-programmable centralised 7 day timer is available to switch all units on/off automatically to conserve power at times when there are not people normally working in the area. Central controls are available for control of up to 128 air conditioning units.

4-Way Cassette (RCI) One-to-One

Cassette System

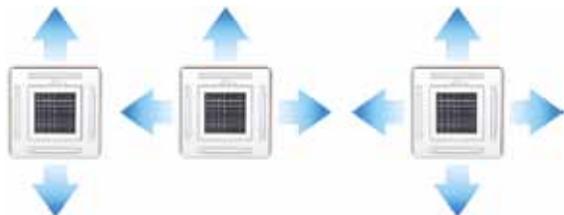
Four-way airflow cassettes, which fit into the ceiling, are an economical and effective way of air conditioning open areas with high occupancy or traffic, such as shops, walkways, and restaurants.

Usually located centrally within an air conditioned space they do not use up valuable wall space. Suited to ceilings up to 4.2m high they provide excellent general air conditioning.

The cassette system does not require specialised duct design and manufacture.

Features

- Available in 3 sizes ranging from 7–12.5kW cooling and 8-14kW heating
- Supplies heating down to -20°C outdoor ambient and cooling up to +46°C outdoor ambient
- Has an attractive fascia and new silky flow curved louvre which prevents smudging on the ceiling
- Option of fitting a ducted air outlet or fresh air inlet
- Four air volume settings, now includes 'UHi' allowing for higher ceiling heights
- 4-way airflow as standard but can be modified to 2 or 3-way



Low Voltage Drain Pump



An internal low voltage drain pump (850mm lift) removes accumulated condensate from the drain pan even during unit operation. A float switch monitors the water level and automatically activates the pump as necessary. A silver ion antibacterial agent inhibits slime build up and a larger 22mm drain diameter assists in more efficient drainage.

One Touch Panel

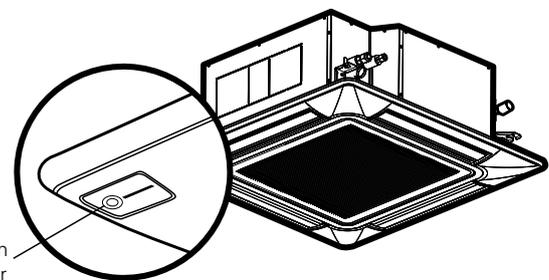
The unit has a one-touch panel which is easily swung open 90° with just one push so the filter can be removed for cleaning.



Energy Saving Features

New Motion Sensor

An optional panel with an infrared motion sensor is available on all models. It functions to automatically adjust the airflow volume, airflow direction and temperature according to the amount of human activity. It can be turned off or on and settings can be adjusted by remote.



New Energy Saving Additions

New energy saving additions include: a newly developed high performance heat exchanger with a 5mm diameter pipe; a high efficiency turbo fan with a 3D twist blade and a new electric power-saving low voltage drain pump.

Cassette Type (RCI)

Model: Indoor Unit Model: Outdoor Unit	RCI-3.0FSN3 RAS-3HVRNM2	RCI-4.0FSN3 RAS-4HVRNM2	RCI-5.0FSN3 RAS-5HVRNM2
Capacity			
Cooling Capacity (kW)	7.1	10.0	12.5
Range (kW)	3.2 ~ 8.0	4.5 ~ 11.2	5.7 ~ 14.0
Heating Capacity (kW)	8.0	11.2	14.0
Range (kW)	3.5 ~ 10.6	5.0 ~ 14.0	5.0 ~ 18.0
Electrical			
Interconnecting Wires (mains)	0.75mm ² 2C+E min.		
Interconnecting Wires (comms)	Twist-Pair Cable with Shield, 0.75mm ² min.		
Max Current (Amps)	23	32	32
Efficiency			
Power Consumption kW (Cooling)	1.77	2.29	3.37
Power Consumption kW (Heating)	1.67	2.18	3.08
AEER Cooling / ACOP Heating	3.44 / 4.06	3.84 / 4.34	3.40 / 3.94
Airflow			
Fan Speeds	4	4	4
Air Flow (l/s) UHi / Hi / Med / Low	450 / 383 / 300 / 233	617 / 517 / 400 / 333	617 / 550 / 433 / 350
Dimensions & weights			
Dimensions IU (H x W x D mm)	298 x 840 x 840	298 x 840 x 840	298 x 840 x 840
Dimensions OU (H x W x D mm)	800 x 950 x 370	1380 x 950 x 370	1380 x 950 x 370
Weight IU / OU (kg)	26 / 66	26 / 103	26 / 103
Adaptable Panel Model	P-AP160NA1 (without motion sensor) / P-AP160NAE (with motion sensor)		
Noise levels			
Sound Pressure Level IU dB(A) (UHi / Hi / Med / Low)	42 / 36 / 32 / 28	48 / 43 / 39 / 33	48 / 45 / 40 / 35
Sound Pressure Level OU dB(A) (Cool / Heat / Night)	45 / 47 / 41	47 / 49 / 43	48 / 50 / 44
Installation			
Pipe Connection Sizes: Gas / Liquid (mm)	15.88 / 9.52	15.88 / 9.52	15.88 / 9.52
Refrigerant Pipe Charge Length (m)	30	30	30
Max. Pipe Length (m)	50	75	75
Max. Pipe Lift (m) (above / below OU)	30 / 20	30 / 20	30 / 20
Working range			
Outdoor Operating Temp. (Cooling) °C db	-5 to +46	-5 to +46	-5 to +46
Outdoor Operating Temp. (Heating) °C wb	-20 to +15	-20 to +15	-20 to +15

NOTES:

- The **nominal cooling capacity** is the combined capacity of the Hitachi standard split system, and is based on the JIS standard B8616.

Cooling Operation Conditions

Indoor Air Inlet Temperature : 27°C DB, 19.0°C WB

Outdoor Air Inlet Temperature : 35°C DB

Heating Operation Conditions

Indoor Air Inlet Temperature : 20°C DB

Outdoor Air Inlet Temperature : 7°C DB, 6°C WB

Published capacities based on Piping Length: 7.5 metres.

- The **sound pressure level** is based on following conditions.

Indoor Units: 1.5 metres beneath the unit

Outdoor Units: 1 metre from the unit service cover surface, and 1.5 metres from floor level.

Voltage of the power source for the indoor fan motor is 220V. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.



Ducted (RPI) One-to-One



Ducted System

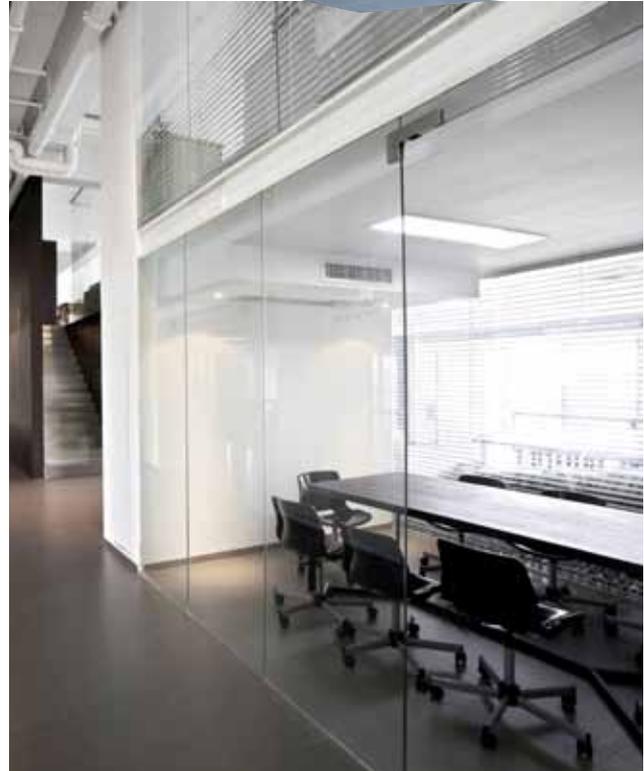
Provided there is sufficient space ducted units are often the first choice because of their versatility.

Subtle vents, located throughout your home or office, quietly and efficiently deliver cool or warm ducted air throughout the building to maintain a constant temperature, while the indoor unit can be easily installed out of sight, in the ceiling or under the floor.

Hitachi ducted systems can be combined with temperzone ducting, grilles and accessories to provide superior filtration and to distribute clean air more effectively ensuring the air conditioning requirements of each room are fully met.

Key Features

- The most up-to-date inverter technology
- Available in 5 sizes ranging from 7.1–16kW cooling and 8–18kW heating
- Supplies heating down to -20°C outdoor ambient and cooling up to +46°C outdoor ambient
- Up to 140 Pa external pressure available
- Outdoor/indoor pipe length up to 75m and 30m elevation
- Self-diagnostic function for easy servicing
- Separable indoor unit for ease of installation (excludes RPI-7)



Key Benefits of the Ducted System

- Capable of air conditioning more than one room with a single indoor unit through the use of in-ceiling ducting
- Does not use up valuable wall space and diffusers can be positioned to fit around lighting and other services to suit your interior design
- Ducted systems are one of the quietest available types of heat pump
- For convenience of servicing the ducted unit does not necessarily have to be located above the air conditioned area

Ducted Type (RPI)

Model: Indoor Unit Model: Outdoor Unit	RPI-3.0FSN1SQ RAS-3HVRNM2	RPI-4.0FSN1SQ RAS-4HVRNM2	RPI-5.0FSN1SQ RAS-5HVRNM2	RPI-6.0FSN1SQ RAS-6HVRNM2	RPI-7.0FSN1SQ RAS-7HVRNM2
Capacity					
Cooling Capacity (kW)	7.1	10.0	12.5	14.0	16.0
Range (kW)	3.2 ~ 8.0	4.5 ~ 11.2	5.7 ~ 14.0	6.0 ~ 16.0	6.0 ~ 18.0
Heating Capacity (kW)	8.0	11.2	14.0	16.0	18.0
Range (kW)	3.5 ~ 10.6	5.0 ~ 14.0	5.0 ~ 18.0	5.0 ~ 20.0	5.0 ~ 20.0
Electrical					
Interconnecting Wires (mains)	0.75mm ² 2C+E min.				
Interconnecting Wires (comms)	Twist-Pair Cable with Shield, 0.75mm ² min.				
Max Current (Amps)	23	32	32	32	32
Efficiency					
Power Consumption kW (Cooling)	2.04	2.51	3.65	4.20	4.76
Power Consumption kW (Heating)	1.93	2.25	3.05	3.83	4.28
AEER Cooling / ACOP Heating	3.21 / 3.68	3.64 / 4.24	3.24 / 4.04	3.17 / 3.84	3.35 / 3.75
Airflow					
Fan Speeds	3	3	3	3	3
Ex Static Max (Pa)	120	120	120	120	140
Air Flow (l/s) Hi / Med / Low	483 / 433 / 333	600 / 550 / 416	783 / 716 / 566	933 / 833 / 666	1083 / 950 / 766
Dimensions & weights					
Dimensions IU (H x W x D mm)	350 x 1076 x 800	350 x 1076 x 800	350 x 1300 x 800	350 x 1300 x 800	440 x 1430 x 550
Dimensions OU (H x W x D mm)	800 x 950 x 370	1380 x 950 x 370	1380 x 950 x 370	1380 x 950 x 370	1380 x 950 x 370
Weight IU / OU (kg)	52 / 66	57 / 103	61 / 103	63 / 103	75 / 104
Duct flange sizes					
Supply Air Connection (mm)	980 x 220	980 x 220	1205 x 220	1205 x 220	830 x 300
Return Air Connection (mm)	813 x 306	813 x 306	813 x 306	935 x 306	1288 x 402
Noise levels					
Sound Pressure Level IU dB(A) (Hi / Med / Low)	46 / 44 / 40	48 / 45 / 41	49 / 46 / 43	53 / 49 / 45	51 / 47 / 42
Sound Pressure Level OU dB(A) (Cool / Heat / Night)	45 / 47 / 41	47 / 49 / 43	48 / 50 / 44	49 / 51 / 46	49 / 53 / 46
Installation					
Pipe Connection Sizes: Gas / Liquid (mm)	15.88 / 9.52	15.88 / 9.52	15.88 / 9.52	15.88 / 9.52	15.88 / 9.52
Refrigerant Pipe Charge Length (m)	30	30	30	30	30
Max. Pipe Length (m)	50	75	75	75	75
Max. Pipe Lift (m) (above / below OU)	30 / 20	30 / 20	30 / 20	30 / 20	30 / 20
Working range					
Outdoor Operating Temp. (Cooling) °C db	-5 to +46	-5 to +46	-5 to +46	-5 to +46	-5 to +46
Outdoor Operating Temp. (Heating) °C wb	-20 to +15	-20 to +15	-20 to +15	-20 to +15	-20 to +15

NOTES:

- The **nominal cooling capacity** is the combined capacity of the Hitachi standard split system, and is based on the JIS standard B8616.

Cooling Operation Conditions

Indoor Air Inlet Temperature : 27°C DB, 19.0°C WB

Outdoor Air Inlet Temperature : 35°C DB

Heating Operation Conditions

Indoor Air Inlet Temperature : 20°C DB

Outdoor Air Inlet Temperature : 7°C DB, 6°C WB

Published capacities based on Piping Length: 7.5 metres.

- The **sound pressure level** is based on following conditions.

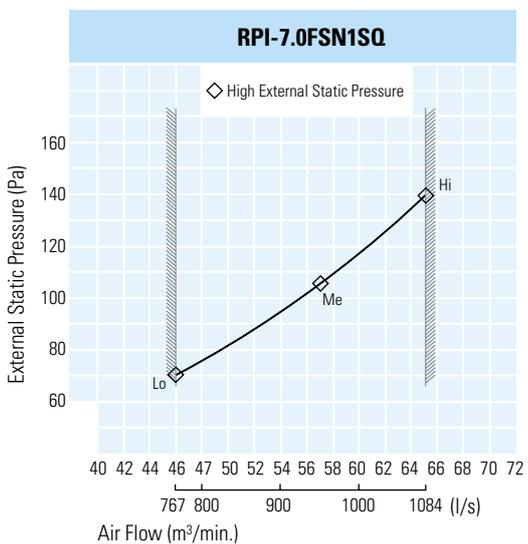
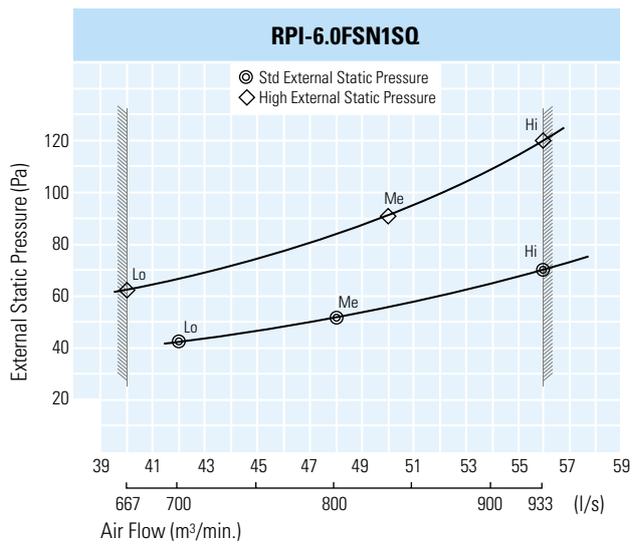
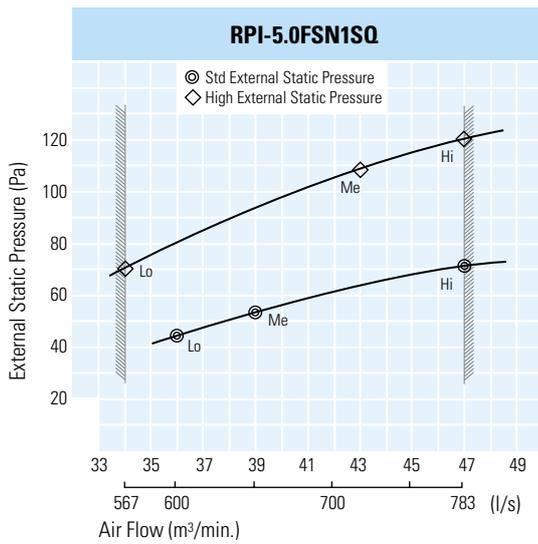
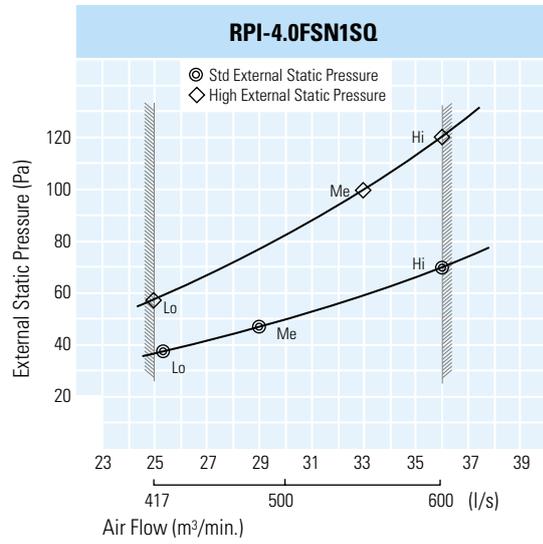
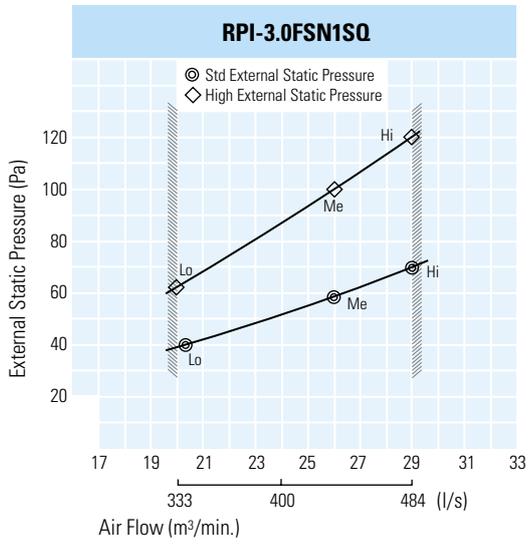
Indoor Units: 1.5 metres beneath the unit with discharge duct (2.0m) and return duct (1.0m)

Outdoor Units: 1 metre from the unit service cover surface, and 1.5 metres from floor level.

Voltage of the power source for the indoor fan motor is 220V. In case of the power source of 240V, the sound pressure level increases by about 1 or 2dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.



RPI-FSN1SQ Series Fan Performance



Accessories



Temperzone Flexiduct

Temperzone Flexiduct is flexible ducting that is certified to AS 4254. AS 4254 is the Australian Standard for ductwork of air-handling systems in buildings.

Flexiduct is available in a variety of sizes and two types: Nude (uninsulated) and Insulated. Both types are certified in accordance with AS 4254.

Visit www.temperzone.biz for further information.



Temperzone Grilles and Diffusers

Temperzone combined with Krantz offers the full range of air distribution products allowing the flexibility to formulate customised solutions to meet all of your air distribution requirements. As one of the largest and longest serving designers and manufacturers of air distribution equipment to New Zealand, temperzone's products and solutions are at the forefront of the air distribution industry.

Visit www.temperzone.biz for further information.



Krantz Diffusers

Krantz Komponenten in Germany, has been an international leader in the design and manufacturing of specialised air diffusion products for over 35 years. Through Temperzone, Krantz offers the full range of high performance air diffusion products to suit all applications.

Visit www.temperzone.biz for further information.



Lokring

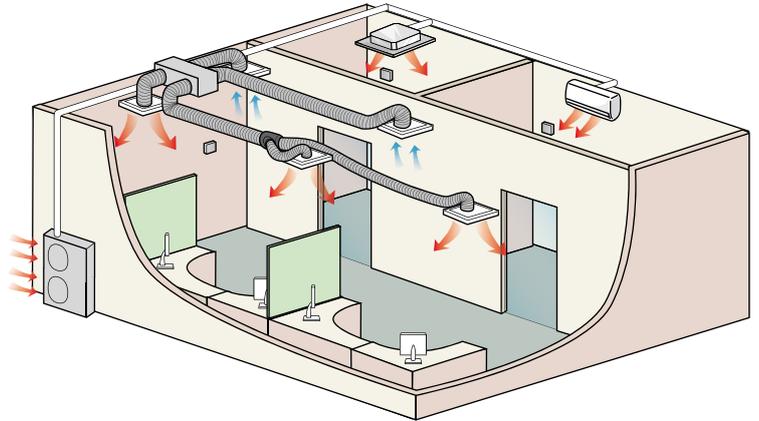
Vulkan Lokring has produced solder-free tube connection technology for refrigerant lines for more than 30 years. By eliminating welding, many overhead costs relating to safety, personnel, equipment and supplies, inspection rework, and monitoring can be eliminated or substantially reduced. Lokring tube connection can be made without a great deal of effort. All you need is a Lokring tube connection, a hand assembly tool and some Lokprep.

Contact Temperzone Ltd for further information.

Premium Inverter Multi-Head

Air Conditioning Design Flexibility

With the versatility of running up to 6 indoor units off one outdoor unit and the ability to create systems of varying capacity, the Premium Inverter multi-head range gives you the flexibility to design systems that precisely meet the specifications of your project. Whether it's your family home with one outdoor unit linked to multiple indoor units or an office block that requires multiple outdoor units linked to numerous individually controlled indoor units, Premium Inverter does it all.



Homes / Apartments

Hitachi Premium Inverter is the ideal choice for homes that require air conditioning in multiple rooms. Units can operate individually and take up minimal room inside and out so are also a perfect choice for tenanted apartments.

Offices

Hitachi Premium Inverter systems can meet the specific air conditioning requirements of separate areas within an office building. Indoor units selected for individual spaces and utilising individual operation allow for high energy savings.

Shops

Shops are constantly changing environments and Hitachi Premium Inverter systems provide the flexibility to be able to alter, add or remove units as required with very little hassle saving both time and money.

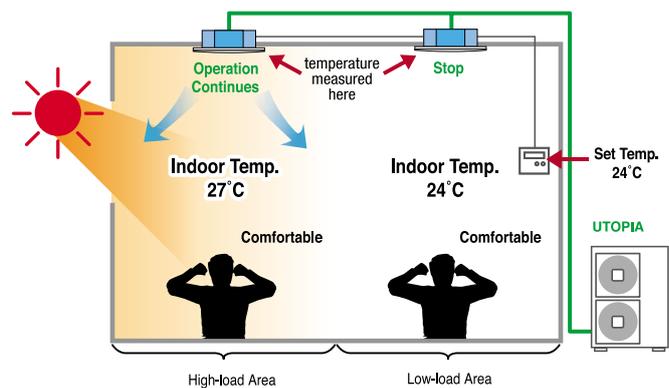
Restaurants

With the ability to select from a number of indoor units Premium Inverter is the perfect choice for restaurants where there is a need to avoid air cross contamination while air conditioning different spaces.

Individual Operating Function

Energy Saving / Comfort

Even if an indoor unit in the low-load area which has reached the set temperature stops, an indoor unit in the high-load area continues to function, a system which leads to energy savings. Operation of multiple indoor units with unbalanced loads in the same room is possible and can be operated from a single wall controller.



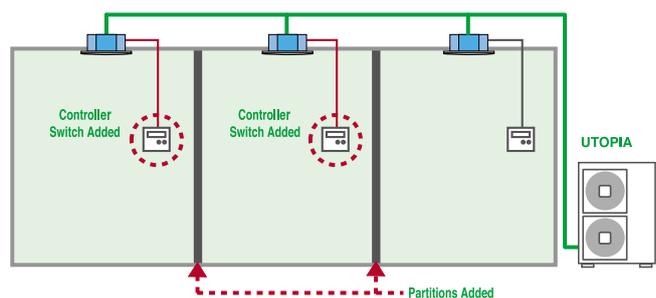
One indoor unit can continue to operate in a room with unbalanced loads

Easy Design / Installation

A sudden change of layout can be handled simply by adding a controller, no additional outdoor units or large-scale construction is required.

Combining a single outdoor unit (7.1–14kW) to multiple indoor units means piping and wiring runs are shorter and installation is easier as there is only one refrigeration system. This results in lower installation costs and shorter construction periods.

Only having to accommodate a small single outdoor unit is great where space is a premium.



Individual operation is achieved simply by adding a controller

Multi-Head Connection Options

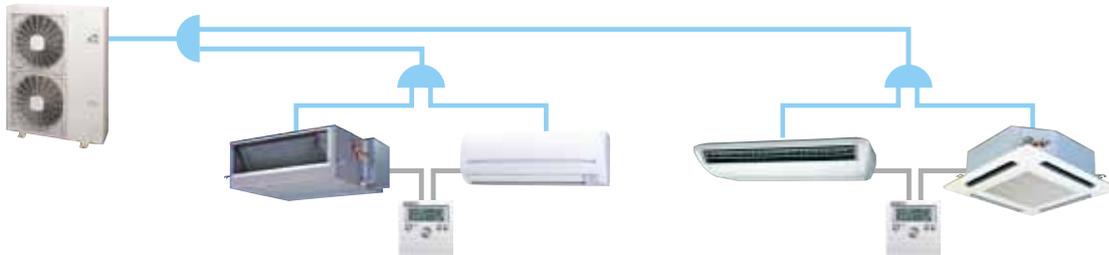
System Configurations

The Premium Inverter multi-head range gives you the flexibility of connecting up to 6 indoor units to a single outdoor unit (refer page 19 for branch kit and line length information). Individual operating function allows the use of one-to-one controllers to control separate indoor units within a system or alternatively use one controller to control a number of indoor units.

Example: Twin/Triple - Individual operation for two to three units



Example: Quadruple - Grouped operation for two by two units



Multi-Head Options

Model	RAS-3HVRNM2	RAS-4HVRNM2	RAS-5HVRNM2	RAS-6HVRNM2
Multi-Head Connection				
Nominal Cooling Capacity (kW)	7.1	10.0	12.5	14.0
Inverter Range (Cooling) (kW)	3.2 ~ 8.0	4.9 ~ 11.2	5.7 ~ 14.0	6.0 ~ 16.0
Min. no. IU's Connectable	2	2	2	2
Max no. IU's Connectable (up to / above OU nominal kW)	3 / 2	5 / 4	6 / 4	6 / 4
IU Capacity Connectable (kW)	4.4 ~ 9.6	5.6 ~ 13.0	6.8 ~ 16.0	8.0 ~ 19.6
Ratio Largest IU Cap. : Smallest IU Cap. (approx.)	2 : 1	2 : 1	2 : 1	2 : 1

Outdoor Unit	3.2 ~ 8.0kW		4.9 ~ 11.2kW		5.7 ~ 14.0kW		6.0 ~ 16.0kW	
Outdoor (RAS)	●		●		●		●	
Indoor Unit	2.2kW	2.8kW	4.0kW	5.6kW	7.1kW	8.0kW	11.2kW	14.0kW
4-Way Cassette (RCI)		●	●	●	●	●	●	●
2-Way Cassette (RCD)		●	●	●	●	●	●	●
Ducted (RPI)	●	●	●	●	●	●	●	●
Under Ceiling (RPC)				●	●	●	●	●
Wall (RPK)		●	●	●	●	●	●	●

Ducted (RPI) Multi-Head



Versatile

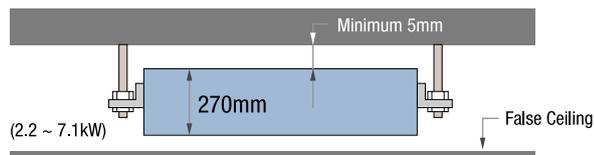
Ducted units are often the air conditioning unit of first choice because of the versatility of being able to duct to where the conditioned air is needed.

Installation Flexibility

A broad range of available external static pressure (up to 170Pa) means you can select units that are suited to your installation e.g. can support longer duct work.

Space-saving Design

These units are low profile allowing them to be fitted easily into any existing ceiling space (2.2 – 7.1kW).



Model: Indoor Unit	RPI-0.8FSN2	RPI-1.0FSN2	RPI-1.5FSN2	RPI-2.0FSN2	RPI-2.5FSN2	RPI-3.0FSN2	RPI-4.0FSN2	RPI-5.0FSN2
Capacity								
Nominal Cooling Capacity (kW)	2.2	2.8	4.0	5.6	7.1	8.0	11.2	14.0
Nominal Heating Capacity (kW)	2.5	3.2	4.8	6.3	8.5	9.0	12.5	16.0
Power Supply								
Power Supply	AC 1Ph 220 ~ 240V 50Hz							
Airflow								
Air Flow (l/s) Hi / Med / Low	133 / 117 / 100	133 / 117 / 100	217 / 183 / 150	250 / 217 / 183	267 / 233 / 200	317 / 283 / 233	450 / 383 / 317	617 / 517 / 417
Dimensions & weights								
Dimensions (H x W x D mm)	270 x (650 + 75) x 720	270 x (650 + 75) x 720	270 x (650 + 75) x 720	270 x (900 + 75) x 720	270 x (900 + 75) x 720	350 x (650 + 75) x 800	350 x (900 + 75) x 800	350 x (1300 + 75) x 800
Weight (kg)	26	26	26	35	35	37	46	58
Noise levels								
Sound Pressure Level dB(A) (Hi / Med / Low)	35 / 33 / 31	35 / 33 / 31	35 / 33 / 31	35 / 33 / 31	36 / 34 / 32	42 / 39 / 35	43 / 40 / 36	44 / 41 / 37
External Pressure (Pa)	80	80	80	80	80	170	170	170
Installation								
Connections	Flare-Nut Connection							
Pipe Connection Sizes: Gas / Liquid (mm)	6.35 / 12.71	6.35 / 12.71	6.35 / 12.71	6.35 / 15.88	9.53 / 15.88	9.53 / 15.88	9.53 / 15.88	9.53 / 15.88

1. The **nominal cooling and heating capacity** is the combined capacity of the Hitachi standard split system, and is based on the JIS standard B8616.

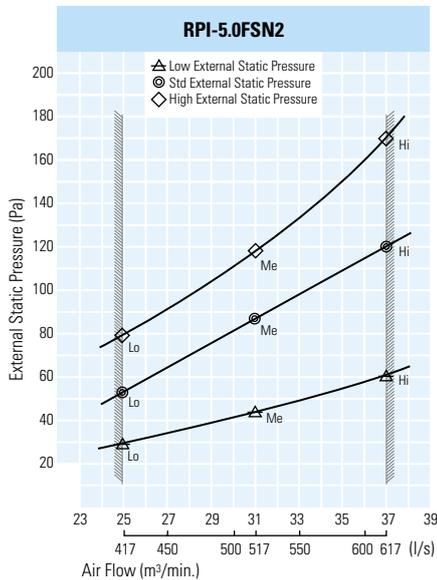
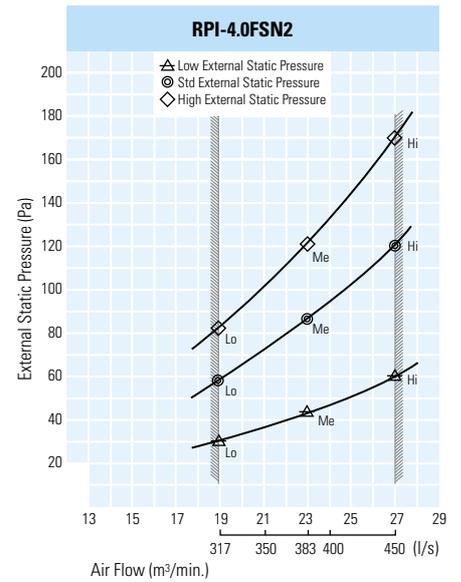
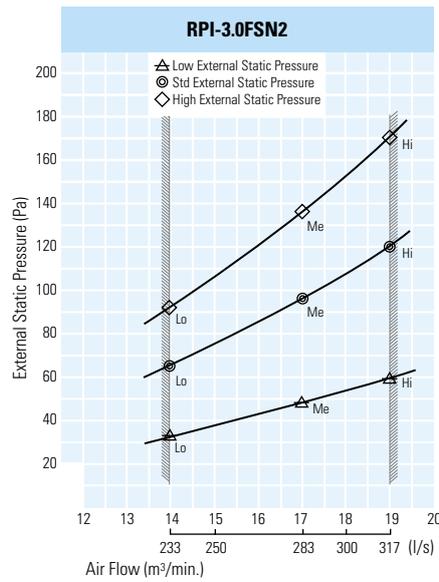
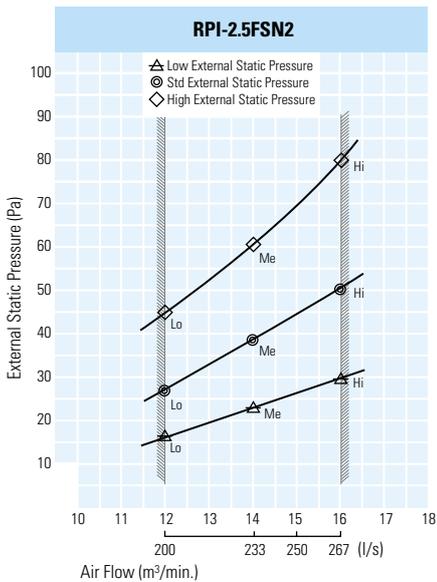
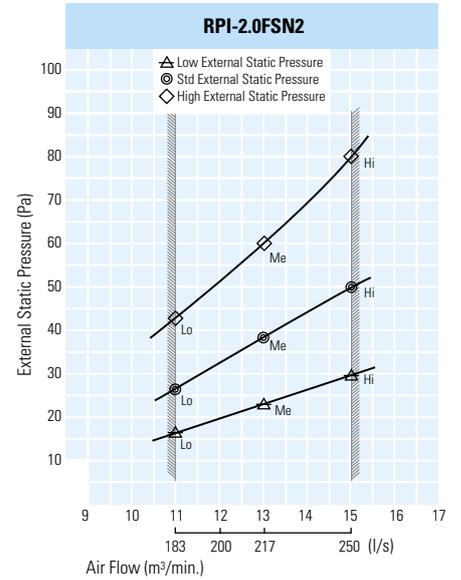
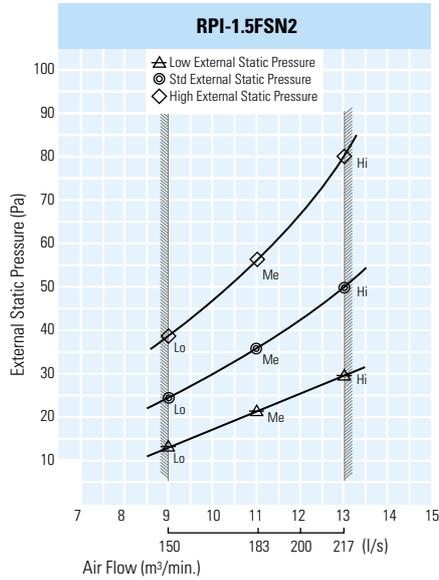
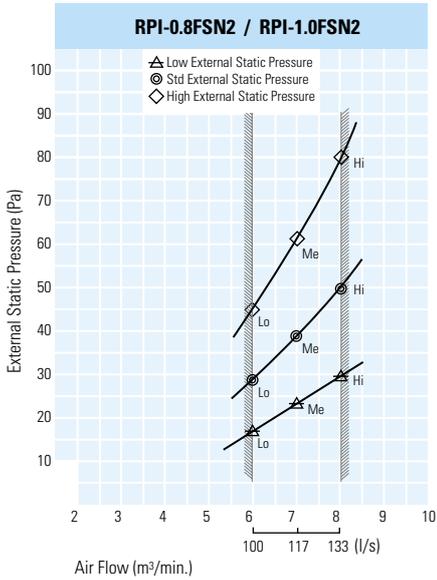
Cooling Operation Conditions: Indoor Air Inlet Temperature: 27°C DB, 19.0°C WB; Outdoor Air Inlet Temperature: 35°C DB

Heating Operation Conditions: Indoor Air Inlet Temperature: 20°C DB; Outdoor Air Inlet Temperature: 7°C DB, 6°C WB

Published capacities based on Piping Length: 7.5 metres, Piping Lift: 0 metres.

2. The **sound pressure level** is based on following conditions: 1.5 metres beneath the unit. With discharge duct (2.0m) and return duct (1.0m). Voltage of the power source for the indoor fan motor is 220V. In case of the power source of 240V, the sound pressure level increases by about 1 or 2dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

RPI-FSN2 Series Fan Performance



4-Way Cassette (RCI) Multi-Head

Cassette System

Four-way airflow cassettes, which fit into the ceiling, are an economical and effective way of air conditioning open areas with high occupancy or traffic, such as shops, walkways, and restaurants.

Usually located centrally within an air conditioned space they do not use up valuable wall space. Suited to ceilings up to 4.2m high they provide excellent general air conditioning.

Features

- Optional motion sensor for power saving
- Low voltage drain pump removes water from drain pan
- One touch panel opening for filter cleaning
- Four air volume settings, now includes 'UHi' allowing for higher ceiling heights
- 4-way airflow as standard but can be modified to 2 or 3-way

See **page 4** for detailed features on this unit.



Model: Indoor Unit	RCI-1.0FSN3	RCI-1.5FSN3	RCI-2.0FSN3	RCI-2.5FSN3	RCI-3.0FSN3	RCI-4.0FSN3	RCI-5.0FSN3
Capacity							
Nominal Cooling Capacity (kW)	2.8	4.0	5.6	7.1	8.0	11.2	14.0
Nominal Heating Capacity (kW)	3.2	4.8	6.3	8.5	9.0	12.5	16.0
Power Supply							
Power Supply	AC 1Ph 220 ~ 240V 50Hz						
Airflow							
Air Flow (l/s) UHi / Hi / Med / Low	250 / 217 / 183 / 150	350 / 283 / 233 / 183	350 / 283 / 233 / 183	450 / 383 / 300 / 233	450 / 383 / 300 / 233	617 / 517 / 400 / 333	617 / 550 / 433 / 350
Dimensions & weights							
Dimensions (H x W x D mm)	248 x 840 x 840	248 x 840 x 840	248 x 840 x 840	248 x 840 x 840	298 x 840 x 840	298 x 840 x 840	298 x 840 x 840
Weight (kg)	20	21	21	22	26	26	26
Adaptable Panel Model	P-AP160NA1 (without motion sensor) / P-AP160NAE (with motion sensor)						
Panel Size (mm)	37 x 950 x 950						
Colour	Natural White						
Noise levels							
Sound Pressure Level dB(A) (UHi / Hi / Med / Low)	33 / 30 / 28 / 27	35 / 31 / 30 / 27	37 / 32 / 30 / 27	42 / 36 / 32 / 28	42 / 36 / 32 / 28	48 / 43 / 39 / 33	48 / 45 / 40 / 35
Installation							
Connections	Flare-Nut Connection						
Pipe Connection Sizes: Gas / Liquid (mm)	6.35 / 12.70	6.35 / 12.70	6.35 / 15.88	9.52 / 15.88	9.52 / 15.88	9.52 / 15.88	9.52 / 15.88

NOTES:

1. The **nominal cooling and heating capacity** is the combined capacity of the Hitachi standard split system, and is based on the JIS standard B8616.

Cooling Operation Conditions: Indoor Air Inlet Temperature: 27°C DB, 19.0°C WB; Outdoor Air Inlet Temperature: 35°C DB

Heating Operation Conditions: Indoor Air Inlet Temperature: 20°C DB; Outdoor Air Inlet Temperature: 7°C DB, 6°C WB

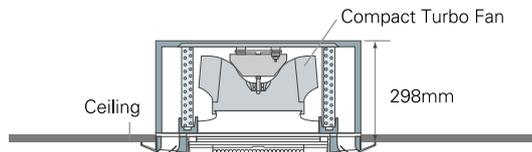
Published capacities based on Piping Length: 7.5 metres, Piping Lift: 0 metres.

2. The **sound pressure level** is based on following conditions: 1.5 metres beneath the unit. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

2-Way Cassette (RCD) Multi-Head

Easy to Install

A compact turbo fan simplifies the structure and reduces the height to 298mm.

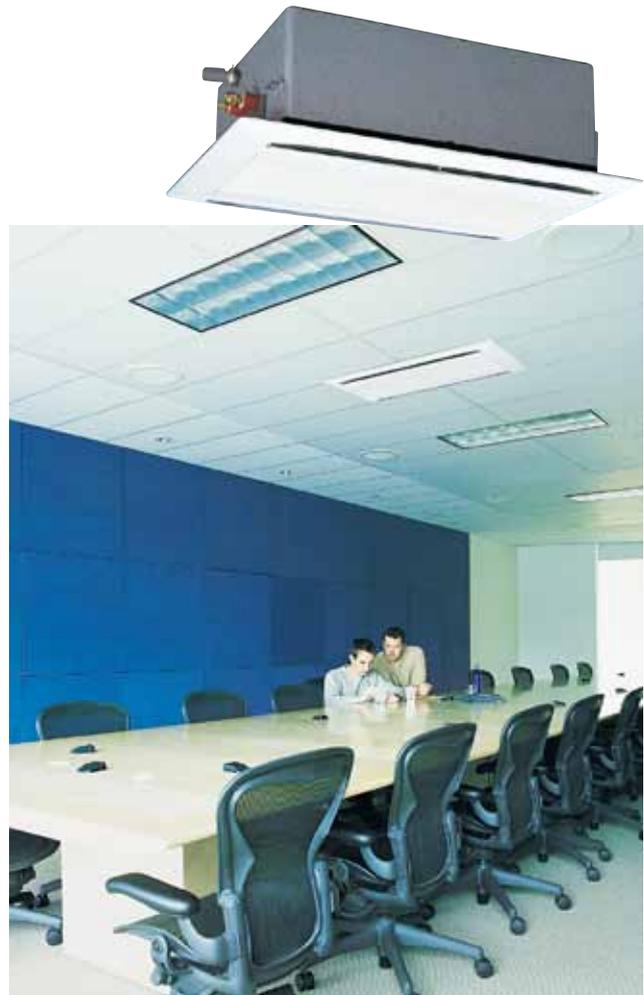


Quiet Operation

The three dimensional twisted wings of the compact turbo fan greatly reduces noise from the cassette unit.

High Performing

Rooms with high ceilings can be comfortably air conditioned by setting ultra high speed with the controller.



Model: Indoor Unit	RCD-1.0FSN2	RCD-1.5FSN2	RCD-2.0FSN2	RCD-2.5FSN2	RCD-3.0FSN2	RCD-4.0FSN2	RCD-5.0FSN2
Capacity							
Nominal Cooling Capacity (kW)	2.8	4.0	5.6	7.1	8.0	11.2	14.0
Nominal Heating Capacity (kW)	3.2	4.8	6.3	8.5	9.0	12.5	16.0
Power Supply							
Power Supply	AC 1Ph 220 ~ 240V 50Hz						
Airflow							
Air Flow (l/s) Hi / Med / Low	166 / 150 / 133	217 / 183 / 150	250 / 217 / 183	317 / 267 / 233	317 / 267 / 233	483 / 400 / 350	567 / 483 / 417
Dimensions & weights							
Dimensions (H x W x D mm)	298 x 860 x 620	298 x 860 x 620	298 x 860 x 620	298 x 860 x 620	298 x 860 x 620	298 x 1420 x 620	298 x 1420 x 620
Weight (kg)	27	27	27	30	30	48	48
Panel Model						30 x 1100 x 710	
Panel Size (mm)						P-N23DNA	
Colour	Natural White						
Noise levels							
Sound Pressure Level dB(A) (Hi / Med / Low)	34 / 32 / 30	35 / 32 / 30	35 / 32 / 30	38 / 34 / 31	38 / 34 / 31	40 / 36 / 33	43 / 40 / 36
Installation							
Connections	Flare-Nut Connection						
Pipe Connection Sizes: Gas / Liquid (mm)	6.35 / 12.70	6.35 / 12.70	6.35 / 15.88	9.53 / 15.88	9.53 / 15.88	9.53 / 15.88	9.53 / 15.88

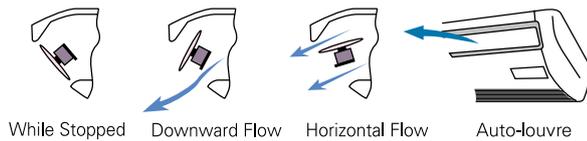
NOTES:

- The **nominal cooling and heating capacity** is the combined capacity of the Hitachi standard split system, and is based on the JIS standard B8616.
Cooling Operation Conditions: Indoor Air Inlet Temperature: 27°C DB, 19.0°C WB; Outdoor Air Inlet Temperature: 35°C DB
Heating Operation Conditions: Indoor Air Inlet Temperature: 20°C DB; Outdoor Air Inlet Temperature: 7°C DB, 6°C WB
 Published capacities based on Piping Length: 7.5 metres, Piping Lift: 0 metres.
- The **sound pressure level** is based on following conditions: 1.5 metres beneath the unit. Voltage of the power source for the indoor fan motor is 220V. In case of the power source of 240V, the sound pressure level increases by about 1dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

Under Ceiling (RPC) Multi-Head

Improved Airflow

Air is evenly distributed by an efficiently designed auto louver. The rounded lower exit of the air opening has been designed for quieter operation.



Noise Reduction

A more efficiently designed interior has reduced air-flow resistance enabling better efficiency at lower fan speeds, therefore reducing noise and vibration.

Low Maintenance

Low maintenance with a long life filter (mildew proof) fitted as standard.



Model: Indoor Unit	RPC-2.0FSN2	RPC-2.5FSN2	RPC-3.0FSN2	RPC-4.0FSN2	RPC-5.0FSN2
Capacity					
Nominal Cooling Capacity (kW)	5.6	7.1	8.0	11.2	14.0
Nominal Heating Capacity (kW)	6.3	8.5	9.0	12.5	16.0
Power Supply					
Power Supply	AC 1Ph 220 ~ 240V 50Hz				
Airflow					
Air Flow (l/s) Hi / Med / Low	233 / 200 / 167	300 / 250 / 200	300 / 250 / 200	417 / 350 / 300	550 / 467 / 383
Dimensions & weights					
Dimensions (H x W x D mm)	210 x 1100 x 670	210 x 1320 x 670	210 x 1320 x 670	270 x 1320 x 670	270 x 1580 x 670
Weight (kg)	26	30	30	34	42
Cabinet Colour	Silky White				
Noise levels					
Sound Pressure Level dB(A) (Hi / Med / Low)	40 / 37 / 34	40 / 37 / 34	40 / 37 / 34	44 / 41 / 38	44 / 41 / 38
Installation					
Connections	Flare-Nut Connection				
Pipe Connection Sizes: Gas / Liquid (mm)	6.35 / 15.88	9.53 / 15.88	9.53 / 15.88	9.53 / 15.88	9.53 / 15.88

NOTES:

- The **nominal cooling and heating capacity** is the combined capacity of the Hitachi standard split system, and is based on the JIS standard B8616.
Cooling Operation Conditions: Indoor Air Inlet Temperature: 27°C DB, 19.0°C WB; Outdoor Air Inlet Temperature: 35°C DB
Heating Operation Conditions: Indoor Air Inlet Temperature: 20°C DB; Outdoor Air Inlet Temperature: 7°C DB, 6°C WB
 Published capacities based on Piping Length: 7.5 metres, Piping Lift: 0 metres.
- The **sound pressure level** is based on following conditions: 1.5 metres beneath the unit and 1 metre from the discharge grille. Voltage of the power source for the indoor fan motor is 220V. In case of the power source of 240V, the sound pressure level increases by about 1dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

Wall Mounted (RPK) Multi-Head

Stylish Design

This range of wall mounted indoor units are designed to suit contemporary spaces. With a flat front panel, it is stylish while remaining inconspicuous and allows for easy maintenance.

User Friendly

Commonly supplied with a wired wall controller, but a simple Dip Switch change on the receiver allows the use of a wireless controller.

Compact Model

This model has been reduced up to 25% in overall size allowing for more flexibility in your installation placements.



Model: Indoor Unit	RPK-1.0FSNSM2	RPK-1.5FSNSM2	RPK-2.0FSNSM2	RPK-2.5FSNSM2	RPK-3.0FSNSM2	RPK-4.0FSNSM2
Capacity						
Nominal Cooling Capacity (kW)	2.8	4.0	5.6	7.1	8.0	11.2
Nominal Heating Capacity (kW)	3.2	4.8	6.3	8.5	9.0	12.5
Power Supply						
Power Supply	AC 1Ph 220 – 240V 50Hz					
Airflow						
Air Flow (l/s) Hi / Med / Low	167 / 133 / 117	183 / 167 / 150	233 / 200 / 167	283 / 267 / 233	283 / 267 / 233	367 / 333 / 283
Dimensions & weights						
Dimensions (H x W x D mm)	280 x 780 x 210	280 x 780 x 210	295 x 1030 x 208	333 x 1150 x 245	333 x 1150 x 245	333 x 1150 x 245
Weight (kg)	10	10	12	18	18	18
Cabinet Colour	White					
Noise levels						
Sound Pressure Level dB(A) (Hi / Med / Low)	38 / 36 / 34	40 / 38 / 36	41 / 39 / 37	43 / 40 / 37	43 / 40 / 37	49 / 46 / 43
Installation						
Connections	Flare-Nut Connection					
Pipe Connection Sizes: Gas / Liquid (mm)	6.35 / 12.70	6.35 / 12.70	6.35 / 15.88 or 12.70*3	9.53 / 15.88	9.53 / 15.88	9.53 / 15.88

1. The **nominal cooling and heating capacity** is the combined capacity of the Hitachi standard split system, and is based on the JIS standard B8616.

Cooling Operation Conditions: Indoor Air Inlet Temperature: 27°C DB, 19.0°C WB; Outdoor Air Inlet Temperature: 35°C DB

Heating Operation Conditions: Indoor Air Inlet Temperature: 20°C DB; Outdoor Air Inlet Temperature: 7°C DB, 6°C WB

Published capacities based on Piping Length: 7.5 metres, Piping Lift: 0 metres.

2. The **sound pressure level** is based on following conditions: 1.5 metres beneath the unit and 1 metre from the Inlet grille. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3. *3) The refrigerant piping size may be required to change depending on the outdoor unit to be connected. If 12.70 mm pipe is used at the gas side, remove the flare adaptor at the indoor unit gas piping. Then attach the flare nut (accessory) for piping connection.

Outdoor Units (RAS)

Improved Efficiency

NEW Inverter Compressor

Improving the inverter compressors intermediate capacity has allowed for higher energy savings. A new shaft mechanism and improved inverter motor have increased low speed operation performance.

Improved Heating Performance

Three new pieces of technology have been adopted to improve heating performance:

Hot gas bypass. Precise electronic control allows spare capacity to be passed through the outdoor coil when required, increasing its temperature and reducing frost build up.

Slitless fin. Increases the fin surface area, and improves water removal from the coil before it is able to form into frost.

Defrost time fuzzy logic. Measures the last defrost time and automatically adjusts to increase time between defrosts and remove unnecessary defrost cycles.

The net result of these developments is approximately a 40% increase in the time spent heating between defrost cycles - vastly improving comfort in winter.

Demand Control Energy Savings

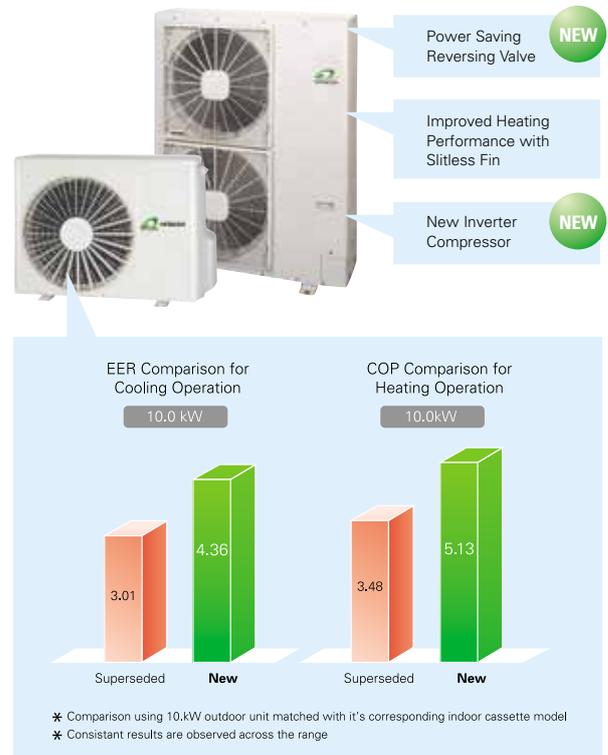
On top of being highly efficient, Hitachi Premium Inverter models offer two additional ways to configure systems to achieve even greater energy savings

Self-Demand Control

Power consumption (as a % of maximum) can be selected by the owner in advance. Without any external command, during operation the system will automatically detect the amount of power being used, and limit itself to the pre-determined amount during peak power usage times.

Wave Mode

When activated by external command, this function cycles the system between full power and a reduced power setting (pre selected by the user) every 10 to 20 minutes until the external command is deactivated. Wave mode results in a lower average power usage, and therefore a cost saving.



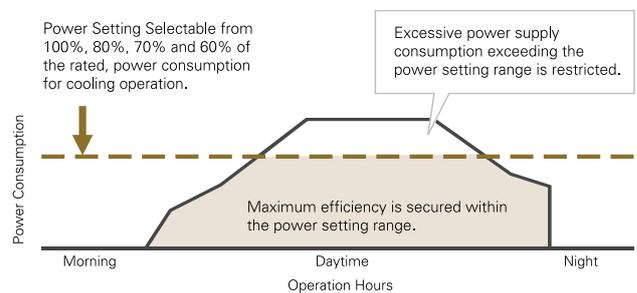
Multiple Indoor Units

Outdoor units can be connected to multiple indoor units (RAS-5 and RAS-6 up to 6 indoor units).

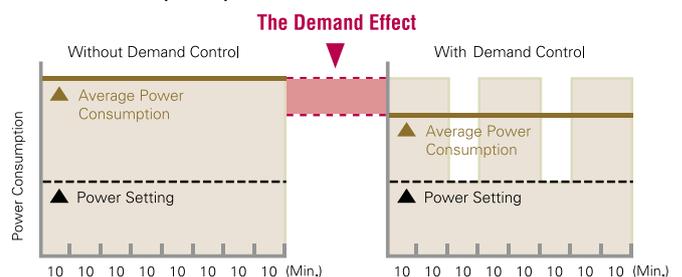
Individual Operating Function

Operation of multiple indoor units with unbalanced loads in the same room is possible and can be operated from a single controller. Multiple indoor units can be controlled and operate individually.

Self-Demand Control



Wave Mode (DRED)



Outdoor Units (RAS)

Model	RAS-3HVRNM2	RAS-4HVRNM2	RAS-5HVRNM2	RAS-6HVRNM2
Power Supply AC 1Ph 220 ~ 240V 50Hz				
Nominal (min.-max.) Cooling Capacity (kW)	7.1 (3.2 ~ 8.0)	10.0 (4.5 ~ 11.2)	12.5 (5.7 ~ 14.0)	14.0 (6.0 ~ 16.0)
Nominal (min.-max.) Heating Capacity (kW)	8.0 (3.5 ~ 10.6)	11.2 (5.0 ~ 14.0)	14.0 (5.0 ~ 18.0)	16.0 (5.0 ~ 20.0)
Multi-Head Connection				
Min. no. IU's Connectable	2	2	2	2
Max. no. IU's Connectable (up to / above OU nominal kW)	3 / 2	5 / 4	6 / 4	6 / 4
IU Capacity Connectable (kW)	4.4 ~ 9.6	5.6 ~ 13.0	6.8 ~ 16.0	8.0 ~ 19.6
Ratio Largest IU Cap. : Smallest IU Cap. (approx.)	2 : 1	2 : 1	2 : 1	2 : 1
Sound Pressure Level				
Sound Pressure Level (dBA) Cool / Heat / Sleep	45 / 47 / 41	47 / 49 / 43	48 / 50 / 44	49 / 51 / 46
Outer Unit Dimensions				
Height / Width / Depth (mm)	800 / 950 / 370	1380 / 950 / 370	1380 / 950 / 370	1380 / 950 / 370
Weight (kg)	66	103	103	103
Cabinet	Synthetic Resin Paint Baked on Galvanised Steel Plate			
Refrigerant				
Flow Control	Micro-Computer Control Expansion Valve			
Condenser Fan				
Quantity	1	2	2	2
Air Flow Rate (l/s)	750	1333	1500	1667
Usable Outdoor Temperature				
Cooling (°C)	-5 ~ +46	-5 ~ +46	-5 ~ +46	-5 ~ +46
Heating (°C)	-20 ~ +15	-20 ~ +15	-20 ~ +15	-20 ~ +15
Refrigerant Piping				
Liquid Line (mm)	9.52	9.52	9.52	9.52
Gas Line (mm)	15.88	15.88	15.88	15.88
Pipe Run				
Max. Pipe Length (m)	50	75	75	75
Max. Pre-charged Length (m)	30	30	30	30
Max. Pipe Lift (m) (above / below OU)	30 / 20	30 / 20	30 / 20	30 / 20
OU Max Current (A)	23	32	32	32
Interconnection Wires mains	0.75mm ² 2C+E (min.)			
Interconnection Wires comms	0.75mm ² Twisted Shielded (min.)			

Cooling Operation Conditions: Indoor Air Inlet Temperature: 27°C DB, 19.0°C WB; Outdoor Air Inlet Temperature: 35°C DB

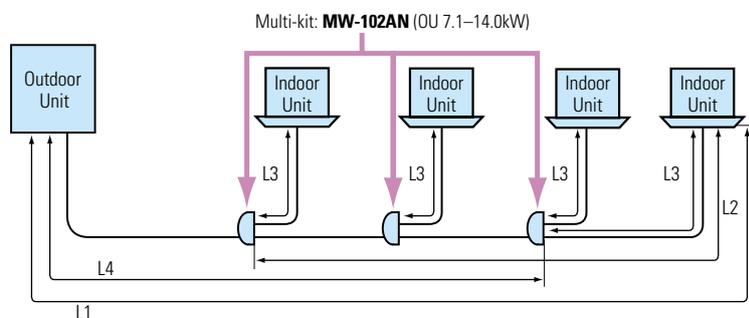
Heating Operation Conditions: Indoor Air Inlet Temperature: 20°C DB; Outdoor Air Inlet Temperature: 7°C DB, 6°C WB

Published capacities based on Piping Length: 7.5 metres,

The **sound pressure level** is based on following conditions: 1 metre from the unit service cover surface, and 1.5 metres from floor level.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

Line Branch For Multiple Connection



Model - OU	7.1kW	10.0kW	12.5kW	14.0kW
Maximum piping length: L1	50 m	75 m		
Piping length between 1st branch and furthest IU: L2	≤ 20 m	≤ 30 m		
Piping length between a branch and its corresponding IU: L3		≤ 10 m		
Total piping length: Sum of all L3 + L4	≤ 60 m	≤ 95 m		

Controls

Intelligent controls

Hitachi offers a range of stylish LCD wall-mounted and handheld controllers suited to both commercial and residential applications.



PC-ARF Wall Controller

- Standard wall controller supplied
- Large screen and simplified button layout
- Controls temp., mode, fan speed, etc.
- 7 day timer with multiple set points
- Up to 16 units can be operated with one controller
- Room name and service company name programmable
- Help menus and error code diagnosis



PC-ARH Half Sized Wall Controller

- Small size for discreet applications
- Simplified functions include temp., mode and fan speed.
- Operates 1 to 16 indoor units (same settings)
- Error code diagnosis



PC-LH3A Wireless Controller

- Standard infrared controller
- Controls temp., mode, fan speed, etc.
- On/Off countdown timers
- Multiple units can be operated with one controller
- Requires receiver to be added to indoor unit
- Not applicable to all models



PSC-A64S Central Controller

- Provides individual control (mode, temp., fan speed, etc.) of multiple indoor units.
- Controls up to 64 groups of units (max. 160 indoors).
- External inputs/outputs for: central stop/run input, emergency stop input, demand control (DRED) input, central operation output and central alarm output.



PSC-A1T Central 7 Day Timer

- Controls up to 64 groups of units (max. 160 indoors).
- 3 intervals programmable per day for each group
- Separate winter and summer schedules can be preset
- Power failure backup remembers settings for 2 weeks
- Use with PSC-A64S only



Central Station EZ

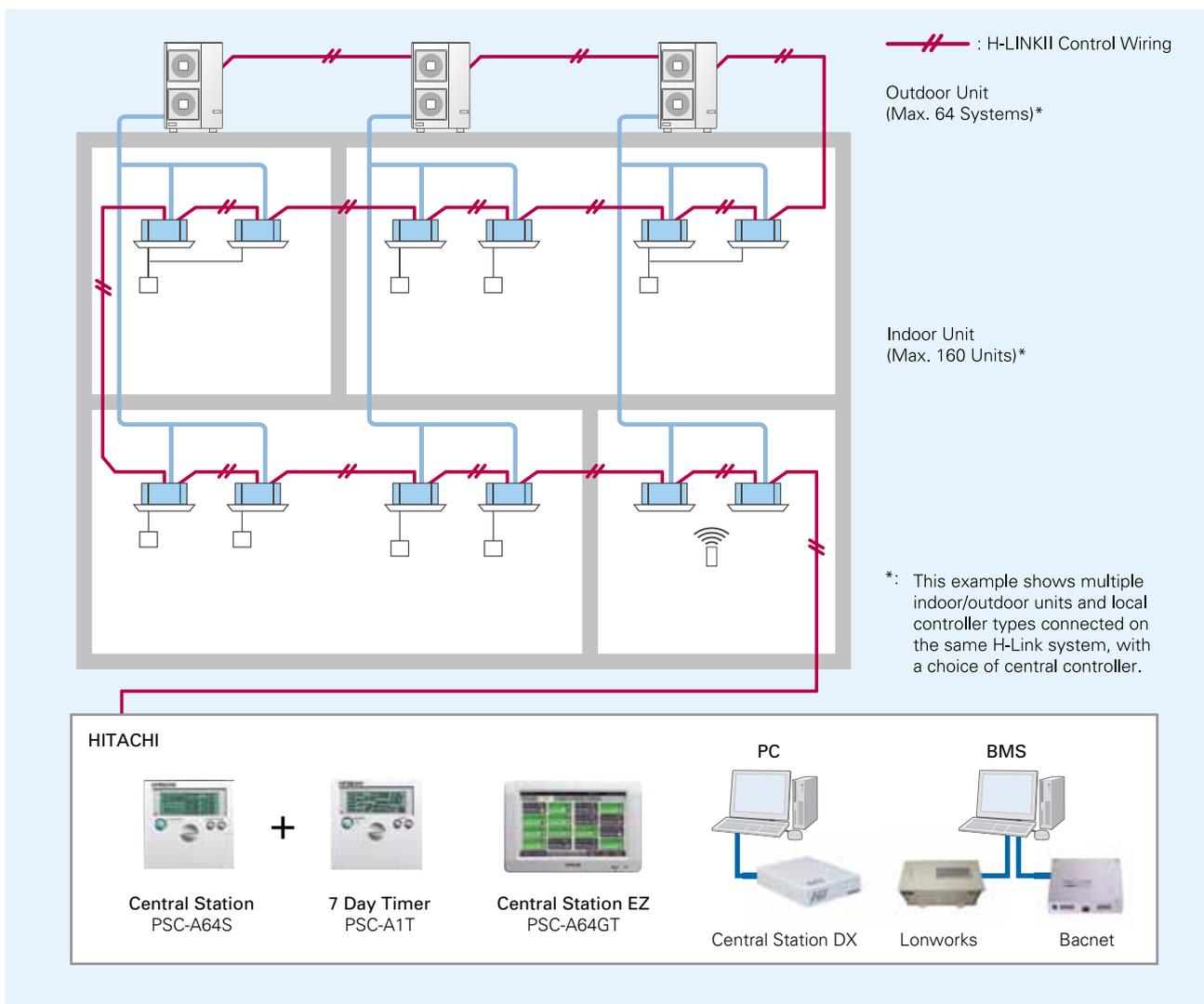
- Touch screen with easy user interface
- Controls up to 64 groups of units (max. 160 indoors).
- Controls temp., mode, fan speed, etc. for all units individually
- Records accumulated operation time for simple tenant billing
- External input and output contacts
- Set up to 10 on/off times per day
- Colour coded graphics for quick reference

H-Link

H-LINK

H-Link II is a unique Hitachi communication system which can be used to control multiple outdoor and indoor units from one control point. Its use assists installers and service engineers by simplifying commissioning and service maintenance. For building owners and occupiers, it provides great versatility to connect various types of central control options giving better system management.

Hitachi VRF, Split Systems, Chillers and even Wall Mounts (via an interface card) can be connected to H-Link II.



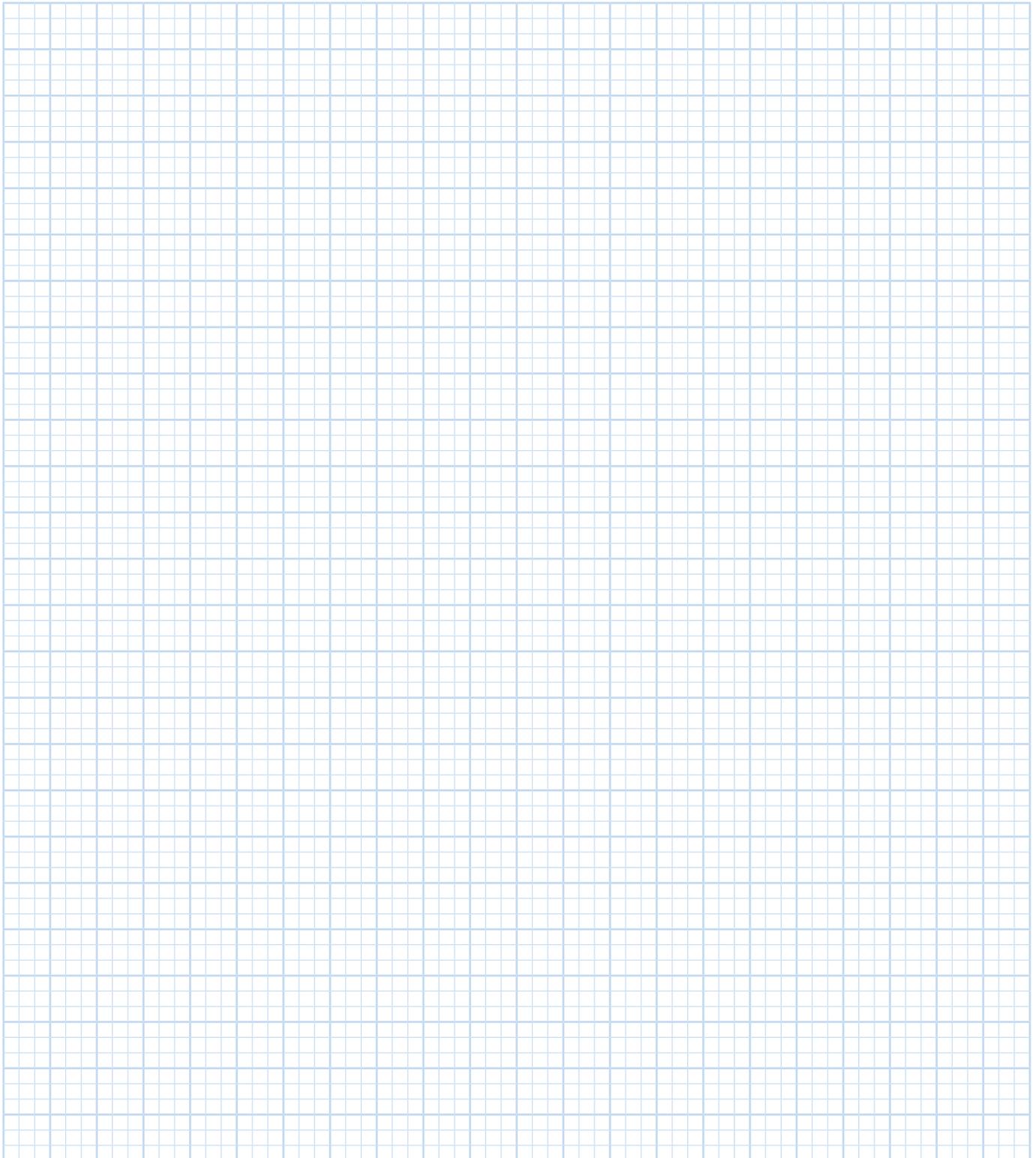
Project

Project:

Consultant / Contractor:

Proposed Delivery Date:

Proposed System Layout



Hitachi Products



Split System Inverter Heat Pumps

This brochure features wall mount and floor mount unit types. These Inverter Split System Heat Pumps have been developed to provide exceptional comfort, easy operation, substantial power savings and full automatic control for homes, apartments, shops, offices and small buildings.

The latest range of heat pumps demonstrate Hitachi's technological leadership, with low noise, high efficiency and simple self-diagnostic controls all wrapped up in smart, compact units.

Visit www.hitachiheatpumps.co.nz for further information.



Multi-Split Inverter Multizone Heat Pumps

A Hitachi Multizone System is a Heat Pump that combines one outdoor unit with multiple indoor units. Different styles of indoor units of varying heating and cooling capacity can be connected – dependent on the number of rooms and their size and shape.

Multizone is ideal for heating your lounge and some of the bedrooms or if you have a commercial area with several small offices you need to cool. Not as sophisticated and versatile as the Premium Inverter range but still an effective and economical way of air conditioning several rooms.

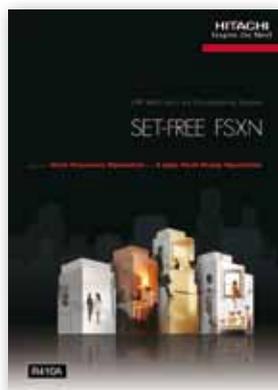
Visit www.hitachiheatpumps.co.nz for further information.



Multi-Split Utopia IVX DC Inverter

The Hitachi Utopia IVX Series is designed for commercial use. With higher capacity outdoor units (20-30kW) which can be connected with up to 4 indoor units of differing styles, these sophisticated systems can cater for most mid-range commercial buildings. If you require a system with a high capacity but find our Set Free system for buildings to be overspecified, then Utopia IVX is the choice for you.

Visit www.hitachiheatpumps.co.nz for further information.



Multi-Split Set Free FSXN VRF

The Hitachi Set Free system is designed for larger buildings. Hitachi Set Free utilises Heat Recovery Operation so as to provide for heating and cooling at the same time or it can be supplied as a 2 Pipe Single Mode System. This state of the art sophisticated system will meet the specification requirements of any modern day building.

Contact **Temperzone Ltd** for further information.

Indoor Units

Ducted Type (RPI)



4-Way Cassette Type (RCI)



2-Way Cassette Type (RCD)



Under Ceiling Type (RPC)



Wall Mounted Type (RPK)



Peace of Mind

Temperzone Ltd distributes Hitachi heat pumps throughout NZ.

Hitachi heat pumps from temperzone have a 6 year warranty on parts and labour. 3 years on high usage applications, e.g. computer server rooms.

It's a comfort to know that this warranty is backed by Temperzone Ltd, the largest air conditioning manufacturer and exporter in Australasia: founded, owned and operated by New Zealanders since 1956.

Terms and conditions apply to all warranties. Hitachi Inverter systems are designed for efficiency and are compliant to MEPS II standards. Specifications are subject to change with product improvement and without notification. Specification details provided in this brochure are indicative only. Please refer to the Hitachi service and technical manuals for all technical information.

Easy Installation

Your temperature problems can be solved in a matter of hours.
Call us today for your no obligation on site inspection and quote.

Your local Hitachi dealer:

Six year warranty



Energy Efficient



Quiet and Discreet



Convenient comfort control



'Hitachi ticks all the boxes'