Panasonic

VRF SYSTEMS RANGE
2024 / 2025

ECO i EX ECO i ECO G

heating & cooling solutions

Commercial VRF Systems

Panasonic VRF Systems are specifically designed for energy saving, easy installation and high efficiency performance. A wide range of outdoor and indoor unit models offer unique features which are designed for the most demanding offices and large buildings.

ECO i EX / ECO i / ECO G

VRF highlighted features

Panasonic provides an extensive range of solutions for medium and large sized buildings, combining the best options to satisfy all needs and site restrictions.

ECOi. Electrical VRF				ECO G. Gas Powered VRF	
2-Pipe Mini ECOi LZ2 · R32	**2-Pipe Mini ECOi LE2 / LE1 · R410A**	**2-Pipe ECOi EX**	**3-Pipe ECOi EX**	**2-Pipe ECO G GE3**	**3-Pipe ECO G GF3**
					
Capacity range					
4 - 10 HP	4 - 10 HP	8 - 80 HP	8 - 48 HP	16 - 60 HP	16 - 25 HP
Extreme temperatures operation					
-20 °C (heating) / 52 °C (cooling)	-20 °C (heating) / 46 °C (cooling)	-25 °C (heating) / 52 °C (cooling)	-20 °C (heating) / 52 °C (cooling)	-21 °C (heating) / 43 °C (cooling)	-21 °C (heating) / 43 °C (cooling)
Maximum number of connectable indoor units					
16 [1]	15	64	52	64	24
Indoor to outdoor connection ratio					
50 ~ 150%	50 ~ 130%	50 ~ 200%	50 ~ 150%	50 ~ 200% [2]	50 ~ 200%
Indoor units					
All (check restrictions)					
Controls					
All					
Other ranges integration					
PACi range full control integration + Domestic range integration by accessory					

1) For 6 HP model. 2) 50 ~ 200% only when one outdoor unit is installed. In other cases 50 ~ 130%.

Uniquely, you can choose from both electric and gas-powered VRF systems from Panasonic, delivering the best choice and flexibility for our customers.

Providing a large choice of indoor units, you can also connect water heat exchangers, air handling units and ventilation units with or without a heat exchanger. And all managed from a simple and powerful stand-alone remote control, centralised controls or cloud connection with 3G embedded.
This cutting edge control technology is called VRF Smart Connectivity, combining the expertise of VRF communication and a leading BMS company to maximise comfort and efficiency while also reducing installation costs.

Panasonic ECOi is Eurovent certified. Panasonic's VRF systems - ECOi range is now certified by Eurovent*. The Eurovent certification verifies the performance ratings of heating and cooling systems following European standards. Those data provides products efficiency with full transparency for the benefit of customers and professionals.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

* Reference website: https://www.eurovent-certification.com/en.

Energy saving

R32

Refrigerant R32.
Our heat pumps containing R32 refrigerant show a drastic reduction in the value of Global Warming Potential (GWP).

INVERTER+

Inverter Plus system.
Inverter Plus system classification highlights Panasonic's highest performing systems.

R2 ROTARY COMPRESSOR

Panasonic R2 rotary compressor.
Designed to withstand extreme conditions, it delivers high performance and efficiency.

ALL INVERTER COMPRESSORS

All Inverter compressors.
Multiple large-capacity all Inverter compressors (more than 14 HP).Two independently controlled Inverter compressors achieve high efficiency. Redesigned components in the body provide performance improvement especially in the rated cooling condition and EER performance.

HIGH COP

High COP.
High efficiency models performs higher COP than standard units and standard combinations.

HIGH COP

Gas powered.
ECO G technology offers the best in energy efficiency. ECO G gas VRF is specially designed for buildings where the electricity is restricted or CO_2 emissions must be reduced.

28% ECONAVI

Econavi.
Intelligent human activity sensor and sunlight sensor technologies that can detect and reduces the waste of energy by optimising air conditioner operation according to room conditions. With just one touch of a button, you can save energy.

ErP

ERP 2018.
Compliant following COMMISSION REGULATION (EU) No2016/2281.

High performance and indoor air quality

BLUEFIN

Bluefin.
Panasonic has extended the life of its condensers with an original anti-rust coating.

-10 °C COOLING MODE

Down to -10 °C in cooling mode.
The air conditioner works in cooling mode when the outdoor temperature of -10 °C.

-25 °C HEATING MODE

Down to -25 °C in heating mode.
The air conditioner works in heat pump mode when the outdoor temperature is as low as -25 °C.

52 °C COOLING MODE

Cooling with outdoor temperature up to 52 °C.
The ECOi EX system works in cooling mode with performance data at outdoor temperature up to 52 °C.

AUTOMATIC RESTART

Automatic restart.
Automatic restart function for power failure. Even when power failure occurs, preset programmed operation can be reactivated once power is resumed.

R22 R410A R22 RENEWAL

R22 renewal.
The Panasonic renewal system allows good quality existing R22 pipe work to be re-used whilst installing high efficiency R410A systems.

nanoeX

nanoe™ X.
Technology with the benefits of hydroxyl radicals has the capacity to inhibit pollutants, viruses, and bacteria to clean and deodorise.

SELF-DIAGNOSING

Self-diagnosing function.
By using electronic control valves past warnings are stored. This makes it easier to diagnose malfunctions, reducing service labour and therefore costs.

AUTOMATIC FAN

Automatic fan operation.
Convenient microprocessor control automatically adjusts fan speed to High, Medium or Low, corresponding to room sensor and maintains comfortable air flow throughout the room.

HUMIDITY CONTROL DRY

Mild Dry.
By intermittent control of compressor and indoor unit's fan, "Mild Dry" gives you comfort. It realizes efficient dehumidification according to room temperature.

AUTO-FLAP CONTROL

Comfortable auto-flap control.
When the unit is first turned on, flap position is automatically adjusted in accordance with the cooling or heating operation.

AIR SWEEP

Air Sweep.
The air sweep function moves the flap up and down in the air outlet, directing air in a "sweeping" motion around the room and providing comfort in every corner.

BUILT-IN DRAIN PUMP

Built-in drain pump.
Maximum head 50 cm (or 75 cm for U type) from the bottom of the unit.

FILTER INCLUDED

Filter included.
Hide-away with filter included.

5 YEARS COMPRESSOR WARRANTY

5 Years compressor warranty.
We guarantee the outdoor unit compressors in the entire range for five years.

High connectivity

INTEGRATION TO S-LINK

Domestic integration to S-Link - CZ-CAPRA1.
Can connect RAC range to S-Link. Full control is now possible.

INTERNET CONTROL

Internet control.
A next generation system providing user-friendly control of air conditioning or heat pump units from everywhere, using a simple Android™ or iOS smartphone or tablet via Wi-Fi.

BMS CONNECTIVITY

BMS connectivity.
The communication port can be integrated into the indoor unit and provides easy connection to, and control of, your Panasonic air conditioner to your home or Building Management System.

Panasonic AC Smart Cloud
PANASONIC AC SMART CLOUD

Panasonic AC Smart Cloud.
The AC Smart Cloud from Panasonic allows you to have complete control of all your installations. In a simple click, receive status updates from all your units in real-time, preventing breakdowns and optimising costs.

Panasonic: delivering TOP energy efficiencies for many years

Particularly suitable for retail, hotels and office applications.

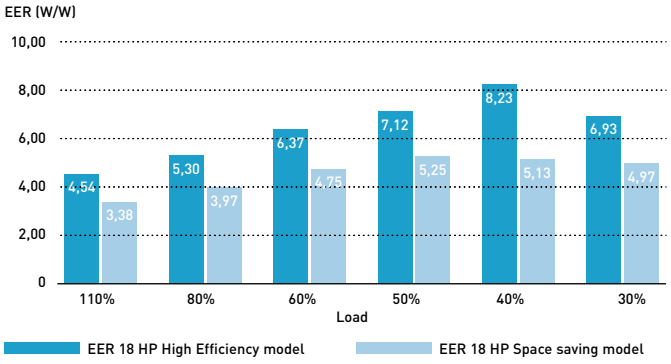
Outstanding efficiency at part load conditions:
Panasonic ECOi EX model covers down 30% part load with extremely high efficiency.

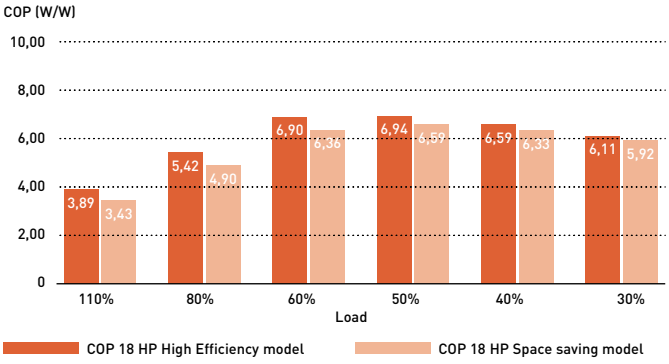
EER comparison of Panasonic 2-Pipe ECOi EX ME2 at different partial loads						
Load %	**100%**	**80%**	**60%**	**50%**	**40%**	**30%**
18 HP High Efficiency model	4,54	5,30	6,37	7,12	8,23	6,93
18 HP Space saving model	3,38	3,97	4,75	5,25	5,13	4,97

Conditions: Outdoor temperature 35 °C DB, Room temperature 19 °C WB.

COP comparison of Panasonic 2-Pipe ECOi EX ME2 at different partial loads						
Load %	**100%**	**80%**	**60%**	**50%**	**40%**	**30%**
18 HP High Efficiency model	3,89	5,42	6,90	6,94	6,59	6,11
18 HP Space saving model	3,43	4,90	6,36	6,59	6,33	5,92

Conditions: Outdoor temperature 0 °C WB, Room temperature 20 °C DB.





* Data from Panasonic official technical data book.

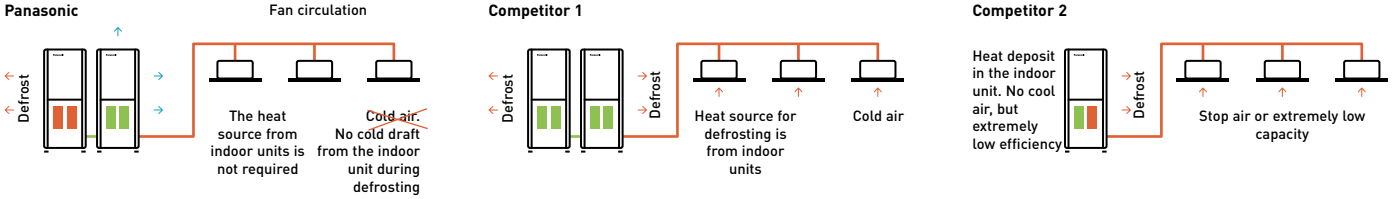
Excellent SEER and SCOP values for VRF 2 and 3-Pipe

Panasonic have a extremely high SEER and SCOP values following LOT21 (seasonal space cooling / heating energy efficiency by COMMISSION REGULATION (EU) 2016/2281).

	Mini ECOi (LZ)					Mini ECOi (LE)					2-Pipe							3-Pipe				
HP	**4**	**5**	**6**	**8**	**10**	**4**	**5**	**6**	**8**	**10**	**8**	**10**	**12**	**14**	**16**	**18**	**20**	**8**	**10**	**12**	**14**	**16**
SEER	**8,50**	**8,12**	**7,71**	**7,56**	**7,08**	**7,85**	**7,48**	**7,25**	**6,27**	**6,37**	**7,43**	**6,96**	**6,74**	**7,23**	**6,43**	**7,56**	**7,03**	**7,02**	**7,05**	**6,39**	**6,69**	**6,02**
$\eta_{s,c}$	**337,0**	**321,8**	**305,4**	**299,4**	**280,2**	**311,0**	**296,2**	**286,8**	**247,9**	**251,8**	**294,3**	**275,4**	**266,6**	**286,0**	**254,3**	**299,2**	**278,2**	**277,7**	**278,9**	**252,7**	**264,4**	**237,7**
SCOP	**5,05**	**4,61**	**4,59**	**4,59**	**4,60**	**4,87**	**4,40**	**4,24**	**4,24**	**4,31**	**4,79**	**4,27**	**4,72**	**4,28**	**4,05**	**4,29**	**4,09**	**4,85**	**4,25**	**4,27**	**4,13**	**3,81**
$\eta_{s,h}$	**199,0**	**181,4**	**180,6**	**180,6**	**181,0**	**191,8**	**172,9**	**166,7**	**166,4**	**169,5**	**188,4**	**167,6**	**185,8**	**168,2**	**159,0**	**168,7**	**160,4**	**190,9**	**166,8**	**167,8**	**162,1**	**149,3**

Efficient defrost operation

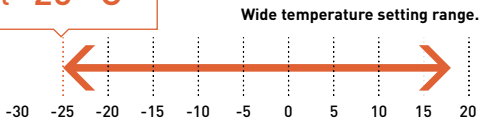
Panasonic uses the second unit to defrost the first unit. This makes the system more efficient during defrost and does not affect comfort.



Panasonic ECOi operates down to -25 °C

This unique feature demonstrate the supremacy of Panasonic ECOi EX Series.
ECOi EX Series are capable of working in the challenging ambient condition. Heating operation is possible when outdoor temperature is as low as -25 °C.

Lowest operating outdoor temperature in the market -25 °C



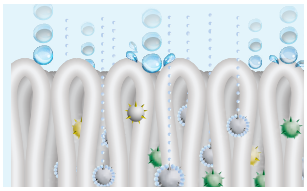
Bringing nature's balance indoors

nanoe™ X, technology with the benefits of hydroxyl radicals.

Abundant in nature, hydroxyl radicals (also known as OH radicals) have the capacity to inhibit pollutants, viruses, and bacteria to clean and deodorise. nanoe™ X technology can bring these incredible benefits indoors so that hard surfaces, soft furnishings, and the indoor environment can be a cleaner and more pleasant place to be, whether at home, work, or visiting hotels, shops and restaurants etc.

What is unique about nanoe™ X?

Effective on fabrics and surfaces.



1 | At one billionth of a metre, nanoe™ X is much smaller than steam and can deeply penetrate cloth fabrics to deodorise.

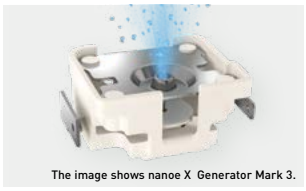
Longer lifespan.

2 | Contained in tiny water particles, nanoe™ X has a long lifespan, which is about 600 seconds, to spread easily around the room.

Huge quantity.

3 | nanoe X Generator Mark 3 produces 48 trillion hydroxyl radicals per second. Greater amounts of hydroxyl radicals contained in nanoe™ X lead to higher performance on inhibition of pollutants.

Maintenance-free.

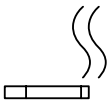


The image shows nanoe X Generator Mark 3.

4 | No service and maintenance required. nanoe™ X is a filter free solution that does not require maintenance, as its atomisation electrode is enveloped with water during its generation process and it is made with Titatium.

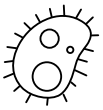
7 effects of nanoe™ X – Panasonic unique technology

Deodorises

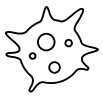


Odours

Capacity to inhibit 5 types of pollutants



Bacteria and viruses



Mould

Allergens

Pollen

Hazardous substances

Moisturises

Skin and hair

* Refer to https://aircon.panasonic.eu for more details and validation data.

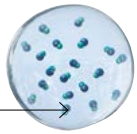
First nanoe™ device was developed by Panasonic in 2003

Generator: nanoe™

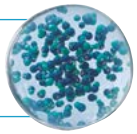
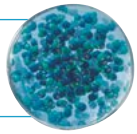
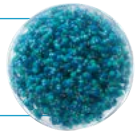
2003

480 billion hydroxyl radicals/sec

Ion particle structure



Generator: nanoe™ X

Mark 1 - 2016	**Mark 2** - 2019	**Mark 3** - 2022
4,8 trillion hydroxyl radicals/sec	9,6 trillion hydroxyl radicals/sec	48 trillion hydroxyl radicals/sec
10x times 	20x times 	100x times 

nanoe™ X has evolved again - the nanoe X Generator Mark 3.

The latest of the continuously evolving nanoe™ X technology, it has the largest amount of hydroxyl radical in the history of nanoe™ which generates 48 trillion hydroxyl radical per second, 100 times the hydroxyl radical contained in traditional nanoe™. The increased number of hydroxyl radical, which are the key to nanoe™ cleaning power, means you can expect an even higher level of performance.

nanoe™ X is an internationally-validated technology. Official test reports are available.

Licensed in VDI 6022

Certification of a HVAC system under VDI 6022 guarantees that the system fulfills the market's strictest hygiene requirements.

VDI 6022 – Part 5 [1] Certification.

Avoidance of allergenic exposure.

Inhibits a wide range of harmful bacteria, viruses, mould, pollen and allergens.

VDI 6022 – Part 1 [1] & 1.1 [2] Certification.

Ventilation and indoor-air quality.

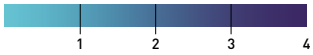
Panasonic nanoe™ X technology improving indoor air quality.

1) Certification mark only valid for nanoe X Generator Mark 3. 2) Certification mark only valid for nanoe X Generator Mark 2 and Mark 3.

Higher concentration, even in large spaces

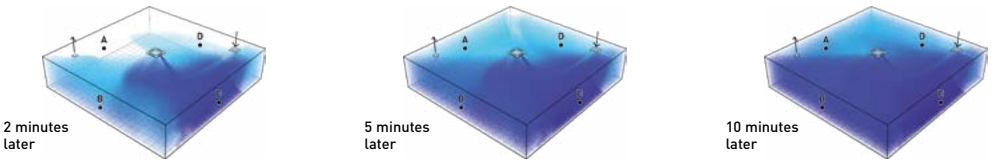
Greater effectiveness even in large spaces of more than 100 m².

nanoe™ concentration level:



nanoe™ X diffuse into the space in a short time to quickly reach the effective concentration level.

Simulation with nanoe X Generator Mark 3 in a room size of 112 m²



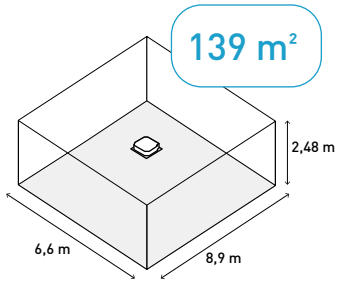
Conditions of the simulation: Inspection / model: 4 way cassette / room size: 112 m² / room height: 2,4 m / position of IDU: centre of space / ventilation: 3 times/hour.

Effectiveness in large space with Generator Mark 3

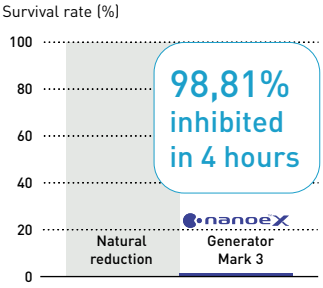
Inhibits virus.

An air conditioner equipped with nanoe X Generator Mark 3 inhibits activity of adhered virus (Bacteriophage) by 98,81% in 4 hours [1].

Test ambient.



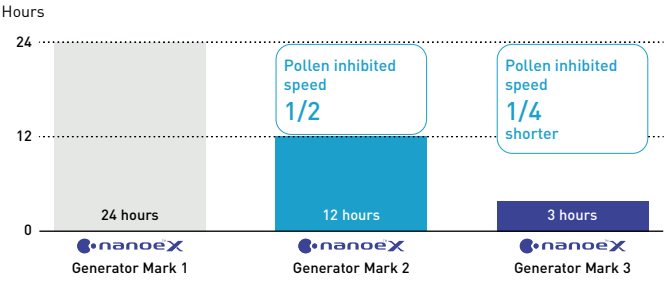
Test result (bacteriophage).



Inhibits pollen.

The result of nanoe X Generator Mark 3. Inhibits pollen in 1/4 the time of nanoe X Generator Mark 2 [2].

Comparison of time required to inhibit 99% of cedar pollen [3].



1) Testing organisation: SGS Inc / Test subject: Adhered Bacteriophage / Test volume: Approx. 139 m² large space (6,6 x 8,9 x 2,48 m). Test result: Inhibited 98,81% in 4 hours. Test repot no.: SHES210901902583. 2) Effect after 3 hours in a test space of approx. 24 m³. The figures are not the results of testing in an actual operating space. 3) **nanoe X Generator Mark 1:** [Testing organisation] Panasonic Product Analysis Center [Test method] ELISA method of measuring allergens adhering to fabric in a test room (approx. 24 m³) [Method of inhibition] Release of nanoe™ [Target] Adhered allergen (cedar pollen) [Test Result] Inhibition of 99% or more in 24 hours (4AA33-151001-F01). **nanoe X Generator Mark 2:** [Testing organisation] Panasonic Product Analysis Center, [Test method] ELISA method of measuring allergens adhering to fabric in a test room (approx. 24 m³) [Method of inhibition] Release of nanoe™ [Target] Adhered allergen (cedar pollen) [Test Result] Inhibition of 99% or more in 12 hours confirmed (L19YA009). **nanoe X Generator Mark 3:** [Testing organisation] Panasonic Product Analysis Center [Test method] ELISA method of measuring allergens adhering to fabric in a test room (approx. 24 m³) [Method of inhibition] Release of nanoe™ [Target] Adhered allergen (cedar pollen) [Test Result] Inhibition of 99% or more in 3 hours (H21YA017-1).

Panasonic Heating & Cooling Solutions is incorporating nanoe™ technology in a wide range of equipment

U2 type 4 way 90x90 cassette.
Built-in nanoe X Generator Mark 3.

Y3 type 4 way 60x60 cassette.
Built-in nanoe X Generator Mark 3.

F3 type adaptive duct.
Built-in nanoe X Generator Mark 3.

G1 type floor console.
Built-in nanoe X Generator Mark 1.

Ceiling mounted air-e nanoe X Generator.
Built-in nanoe X Generator Mark 1.

New BION air pollutant filter (optional)

Collaborating with BION, experts in filtration equipment, a new molecular filtration is available to improve indoor air quality.

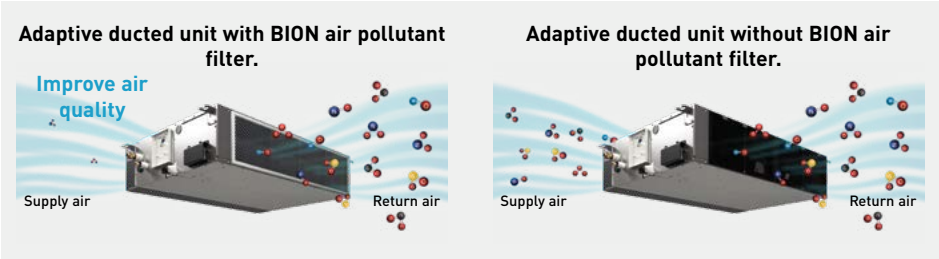
BION MEDIA INSIDE

The efficiency of nitrogen dioxide (NO_2) removal can reach 99,5%*

* Measured by ASTM6646 international standards. Efficiency reaches 99,5% within 4,8 seconds of contact time with the media bed (FAM filter). ** The performance varies depending on the room size, environment and usage and it may take several hours to reach the full effect. BION air pollutant filter is not medical device, local regulations on building design must be followed. Test results conducted under controlled laboratory conditions. Performance of BION air pollutant filter might differ in real life environment.

BION air pollutant filter traps and reduces certain types of harmful pollutant gases, listed below

- Nitrogen oxides (NO_x)
- Ozone (O_3)
- Sulfur dioxide (SO_2)
- Formaldehyde (HCHO)
- Volatile organic compounds (VOCs)



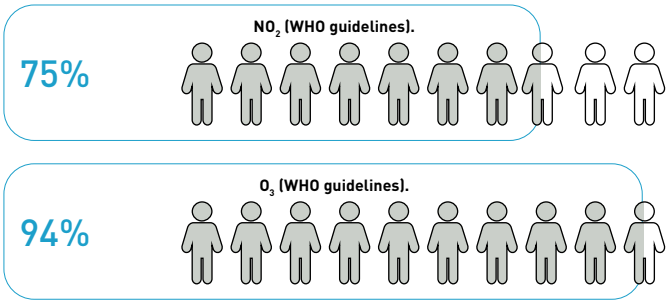
The BION air pollutant filter is an ideal solution for improving indoor air quality in urban areas.

Air pollution in urban areas in Europe

It is reported that in 2021, a significant portion of the Europe's urban population has been exposed to high levels of key air pollutants*.

- 75% of the urban population was exposed to NO_2 concentrations above 10 µg/m³
- 94% were exposed to concentrations of O_3 above 60 µg/m³

* The "Europe's Air Quality Status 2023" report (EEA, 2023) assesses levels of air pollutants measured in ambient air across Europe (> 2000 locations) for the years 2021 and 2022. It compares them against both EU standards as set out in the Ambient Air Quality Directives and the 2021 WHO Air Quality Guidelines.



Share of the Europe's urban population exposed to air pollutant concentrations above EU standards and WHO guidelines in 2021, as referenced in the EEA 2023.

Why outdoor air pollution matters to IAQ?

Poor indoor air quality is associated with outdoor air pollutants such as car exhaust and factory fumes, and the two are closely linked. A significant portion of human exposure to air pollution occurs when they are indoors.

Different objectives, different IAQ solutions

In today's world, we are concerned about wellbeing and the air we breathe. And technology exists to ensure improved indoor air quality. With the introduction of the new BION air pollutant filter, Panasonic offers IAQ solutions optimized for various target objectives.

IAQ Solution	nanoe™ X	BION air pollutant filter
Objectives	Inhibit particles such as pollutants, certain types of viruses, and bacteria to clean and deodorise.	Inhibit gases such as nitrogen oxides (NO_x), ozone (O_3), sulfur dioxide (SO_2), formaldehyde (HCHO) and volatile organic compounds (VOCs)
Technology	Hydroxyl radicals contained in water	Molecular filtration
Filtering mechanism	Physical capture of particles	Adsorption and absorption
Availability	Built into all air-to-air indoor units as a standard	Optional accessory for the adaptive ducted unit (PF3/MF3)

BION air pollutant filter*	PAW-APF800F	PAW-APF1000F	PAW-APF1400F
Compatible adaptive ducted unit	MF3 15, 22, 28, 36, 45 and 56	MF3 60 and 73	MF3 90, 106, 112, 140 and 160

* The filter cartridge and filter casing are included in the package.

Panasonic VRF: TOP in comfort

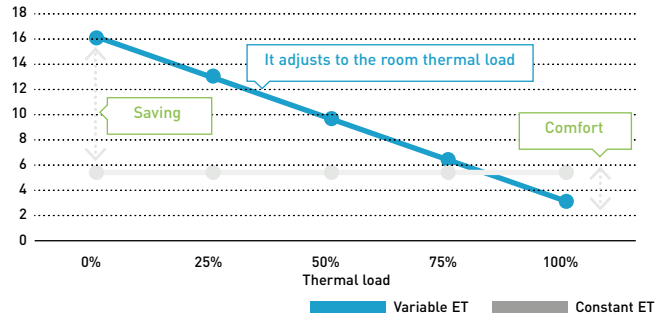
Since 2006, all Panasonic VRF systems have included special VET technology, with variable refrigerant temperature control, as standard.

Variable Evaporation and Condensation Temperature.

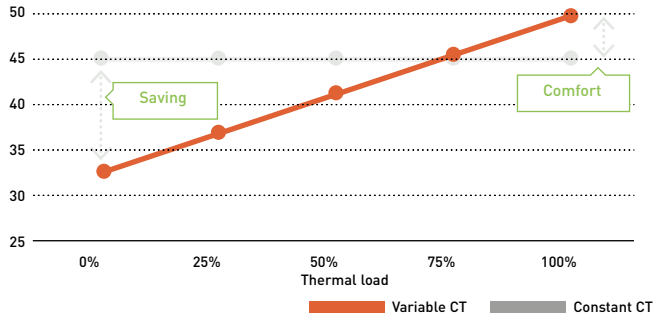
Our 'smart logic' system checks the temperature every 30 seconds, automatically adjusting the refrigerant temperature according to actual demand and outdoor conditions. This ensures better energy performance at all times.

Temperature varies from 16 °C to 3 °C.
Similarly, the condensation temperature is also variable and is adjusted to the room thermal load, within a range of 33 - 55 °C.

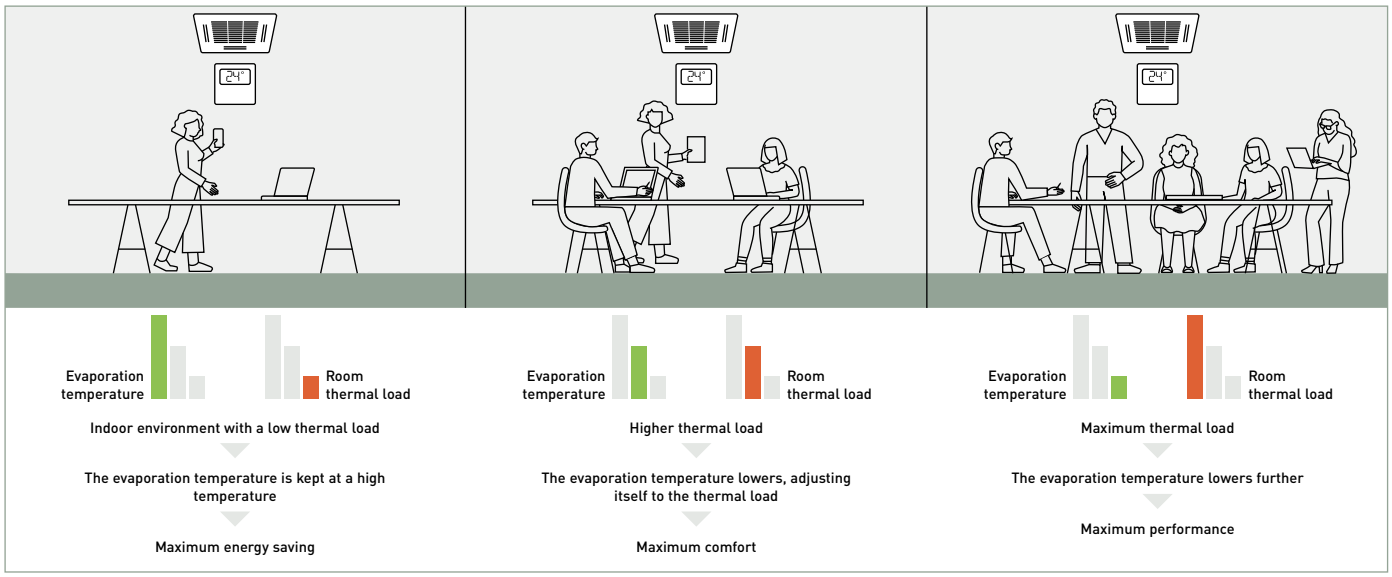
Refrigerant evaporation temperature (°C).



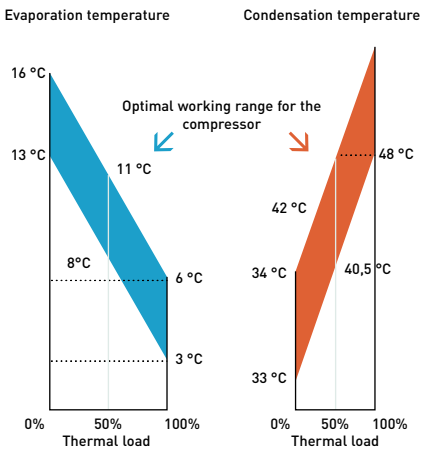
Refrigerant condensation temperature (°C).



Example of cooling mode (similarly applicable to heating mode).

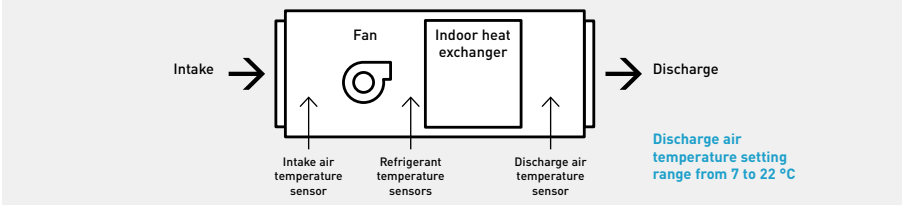


Technical focus on variable temperatures



Control of the discharge temperature

This special function is available in all of Panasonic VRF systems' indoor units to guarantee maximum comfort for the end user.
For example, in cooling mode, if the temperature of the discharged air was below 10 °C, the user may feel discomfort, just as he would do in heating mode if the temperature was far too high.
With the Panasonic control of the discharge air temperature, this can be adjusted within a cooling range of 7 – 22 °C.



Benefits:

- The air will never be too cold or too warm
- Available in cooling and in heating
- Higher comfort
- Energy saving
- It prevents the formation of condensation within ducts and vents, improving levels of hygiene

Solutions for Restaurants

Full heating, cooling and DHW solutions for Restaurants.

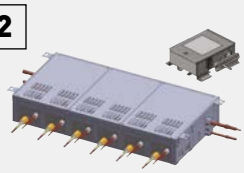
1a

Gas VRF. ECO G.
ECO G gas VRF is designed for buildings where the electricity is restricted or CO_2 emissions must be reduced. Sanitary hot water is produced for free, all year round.

1b

Electric VRF. ECOi EX and Mini ECOi.
ECOi electrical VRF is specifically designed for the most demanding restaurants. High efficiency system. Extended operating range to provide heating at outdoor temperature as low as -25 °C (2-Pipe ECOi EX). Suitable for refurbishment projects.

2



3-Pipe control box kit.
Heat Recovery box to connect multiple indoor units with just one box, 4, 6 and up to 8 indoor units or groups
This is good advantage in the restaurants, where space for connecting several boxes is limited.

3

Aquarea T-CAP.
Ideal for heating, cooling and for production of big quantities of hot water at 65 °C, Aquarea have a extremely quick return on investment and a low CO_2 footprint.

4

Water heat exchanger for ECOi and ECO G. Water up to 55 °C.
Producing hot water, compatible with both ECOi and ECO G, heat pump outdoor units.

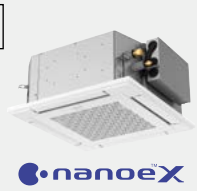
5

AHU connection kit for efficient ventilation.
The AHU connection kit is specially designed to improve the efficiency of the pre-heating or pre-cooling ventilation process.

6

Adaptive ducted with nanoe™ X.
Super silent units deliver the ideal air supply. Units available from 1,5 kW providing precise temperature control even in small rooms.
2 installation possibilities (horizontal / vertical) with high ESP 150 Pa allows for flexible installation.
nanoe™ X is built-in as standard.

7



Mini Cassette.
The Y3 type 4 way 60x60 cassette unit has modern and stylish panel design which matches with any type of the building design.

8

Control your way.
Wide variety of controls, from simple user control to full system control via remote access functionality. Touch panel and consumption control.

9

Air curtain with DX coil.
The Panasonic range of air curtains is designed for smooth operation and efficient performance.

10

Protocol friendly.
Great flexibility for integration into your KNX / Modbus / LonWorks / BACnet projects allows fully bi-directional monitoring and control of all the functioning parameters. Range of solutions to control locally or remotely the full system in bi-directional mode.

11

Panasonic AC Smart Cloud / Service Cloud.
Taking your business under control. The Service function makes maintenance work simpler.

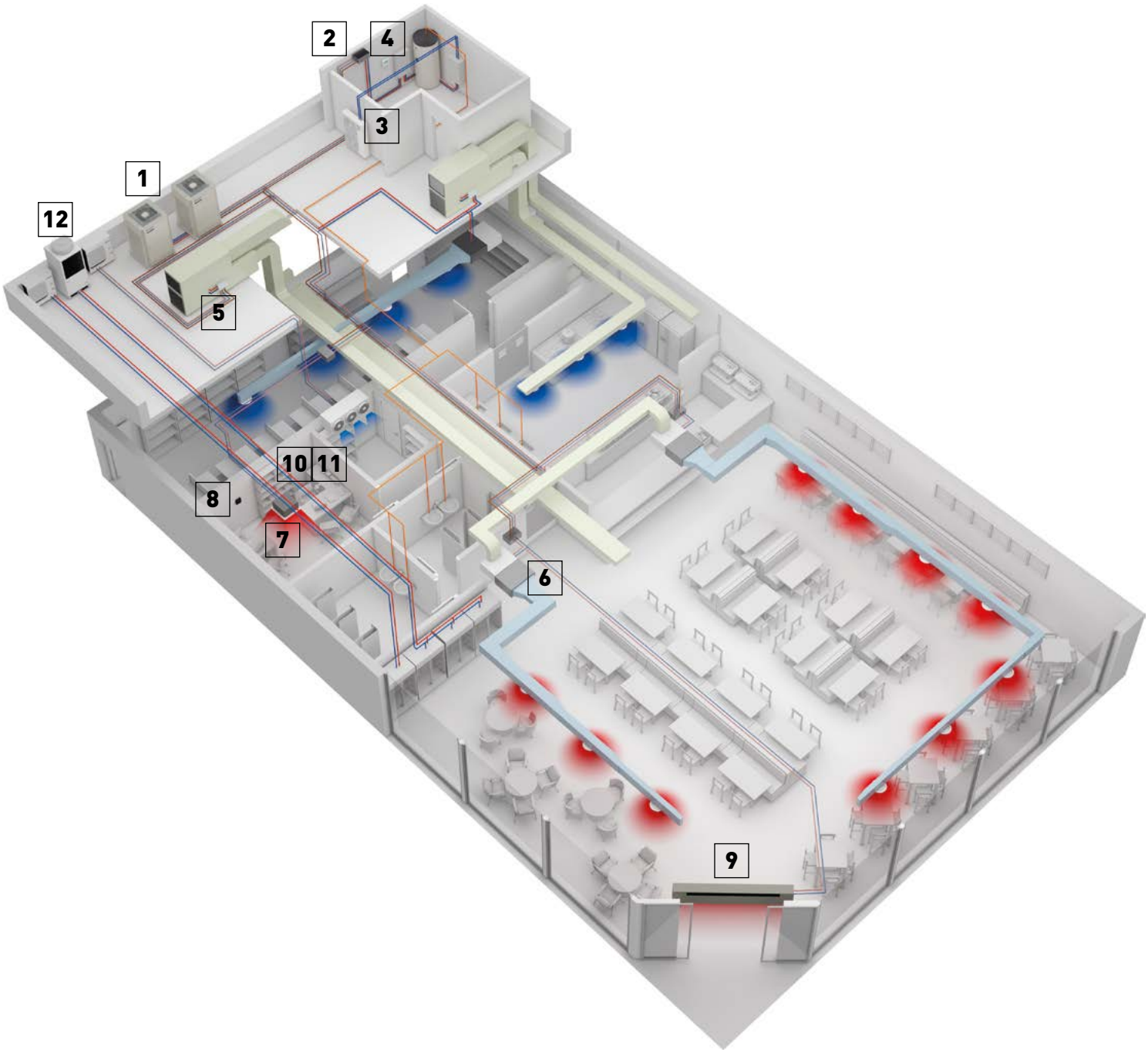
12

Condensing unit with natural refrigerant.
Panasonic CO_2 unit is the natural choice for showcases and cold rooms in restaurants. Always fresh foods from a future-poof refrigeration technology, without any contamination risk.

Highly efficient at part load conditions.

Panasonic has solutions for optimising the installation of cooling, heating and DHW production in restaurants. While the kitchen needs cooling, heating is needed for DHW and also for heating the public area, with the advantage of 100% fresh air that removes odours. Combining all these needs smartly with Panasonic technology results in a simple and flexible system adaptable to any restaurant requests, with lower utility bills. Additionally, Panasonic is offering the unique solution for areas where electric power is limited, using ECO G. VRF units powered mainly by Natural Gas or Propane, bringing comfort and DHW anywhere.

For chiller options, please check chiller section.

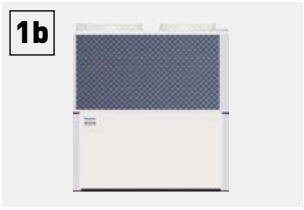


Your entire hotel with superior comfort, control and savings too

1a

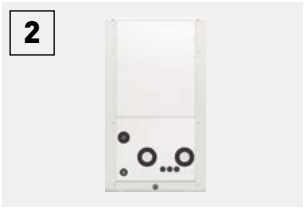
Hybrid system.
Gas + Electricity Hybrid system. Taking advantage of Gas and Electricity to achieve the most efficient performance and maximum energy saving, whilst reducing reliance on the electricity grid.

1b



Gas VRF. ECO G.
ECO G gas VRF is designed for buildings where the electricity is restricted or CO_2 emissions must be reduced. Sanitary hot water is produced for free, all year round.

2



Hydronic units.
Providing hot and cold water for heating and refrigeration (radiators, underfloor heating, radiators...).

3 8

YKEA unit for server room.
Steady cooling, nonstop, even at -25 °C and still with high efficiency. Ready for continuous operation and easy to connect 2 systems to automatically alternate and ensure server rooms are kept cool.

4

AHU connection kit for efficient ventilation.
The AHU connection kit is specially designed to improve the efficiency of the pre-heating or pre-cooling ventilation process.

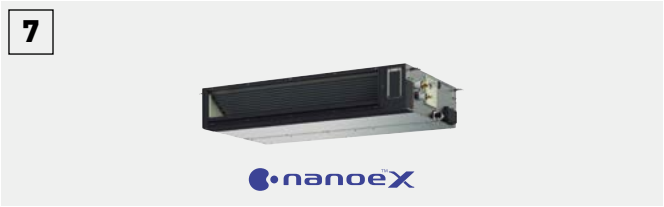
5

Electric VRF. ECOi EX.
ECOi electrical VRF is specifically designed for the most demanding hotels. High efficiency system. Extended operating range to provide heating at outdoor temperature as low as -25 °C (2-Pipe ECOi EX). Suitable for refurbishment projects.

6

Control your way.
Wide variety of controls, from simple user control to full system control via remote access functionality. Touch panel, web server, consumption control, smartphone control... everything is possible.

7



Wide range of indoor units.
All units provided with supply air temperature sensor and low operation sound level to guarantee maximum guest comfort. Units equipped with nanoe™ X (available in specific models) provide better air quality in public spaces in the hotel.

8

Panasonic AC Smart Cloud / Service Cloud.
Taking your business under control. The Service function makes maintenance work simpler.

9

Protocol friendly.
Great flexibility for integration into your KNX / Modbus / LonWorks / BACnet projects allows fully bi-directional monitoring and control of all the functioning parameters.

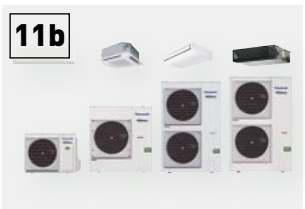
10

Air curtain with DX coil.
The Panasonic range of air curtains is designed for smooth operation and efficient performance.

11a

Condensing unit with natural refrigerant.
Panasonic CO_2 unit is the natural choice for an energy saving and environmentally friendly solution.

11b

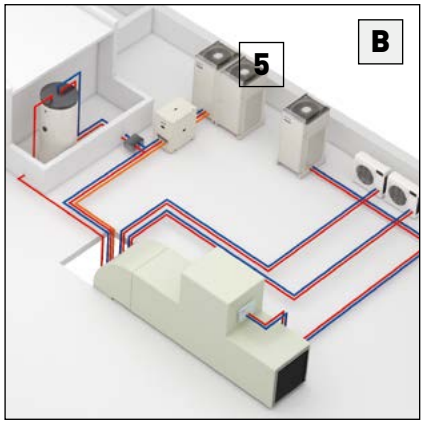


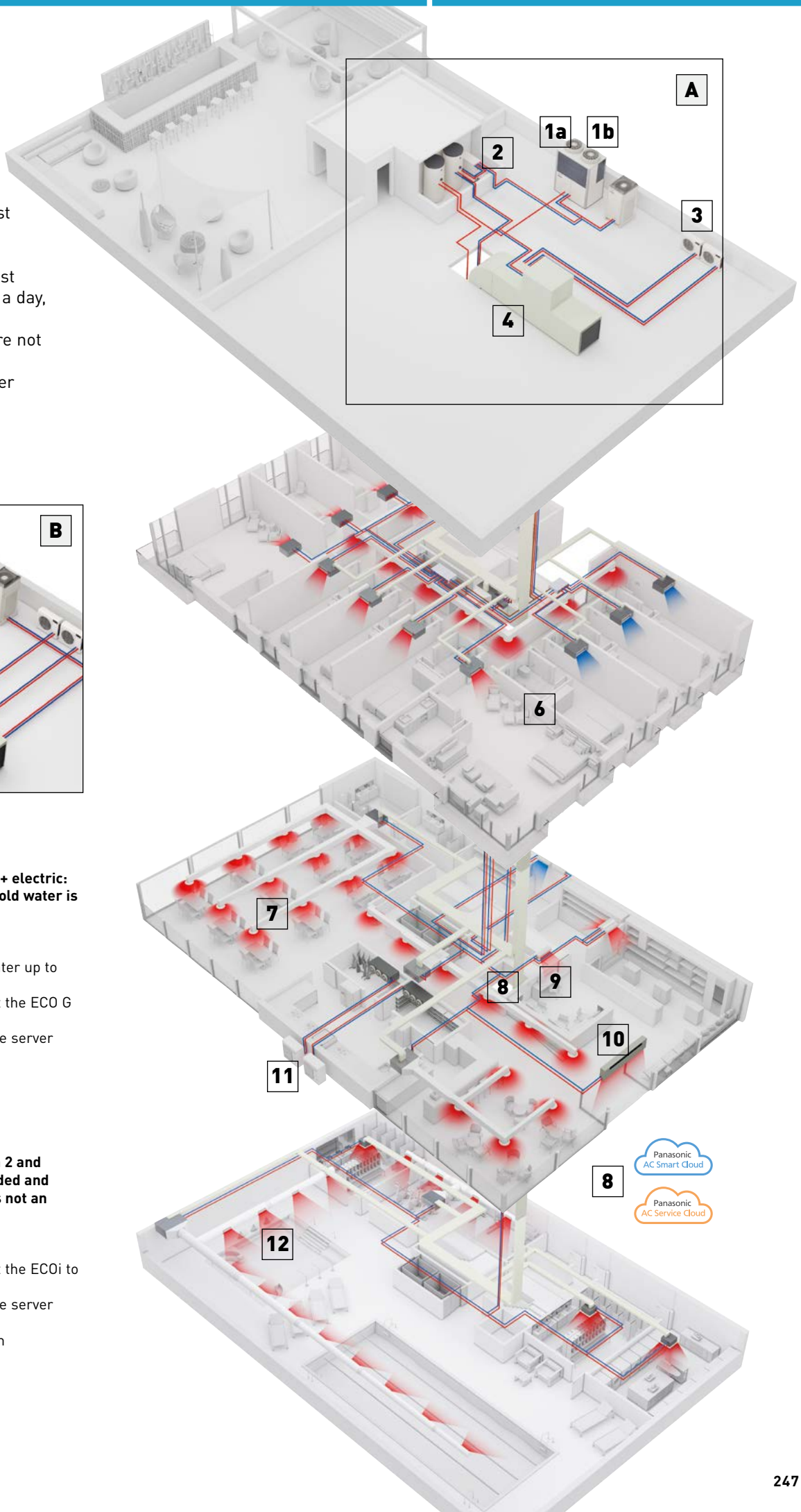
PACi NX Elite Series for cooling rooms.
High quality and efficient solution for high temperature refrigeration applications.

12

Maximum savings on hot water production.
Hot water for swimming pool, spa and laundry for free thanks to the residual heat generated by the ECO G units.

Panasonic offers the widest range in HVAC, DHW and ventilation available. That enables us to offer the most suitable solution 24 hours a day, 365 days a year.
Panasonic Solutions ensure not only a higher customer satisfaction but also a lower energy bill.





A

Option A: Hybrid solution. Gas + electric: When large quantities of hot/cold water is needed.
- ECO G (gas heat pump)
- Water heat exchanger
- Aquarea HT to produce hot water up to 65 °C
- AHU connection kit to connect the ECO G to the AHU
- YKEA wall-mounted to cool the server rooms efficiently

B

Option B: Full Electric solution 2 and 3-Pipe. When flexibility is needed and electricity power availability is not an issue.
- ECOi (electric VRF)
- Direct expansion indoor units
- AHU connection kit to connect the ECOi to the AHU
- YKEA wall-mounted to cool the server rooms efficiently
- Panasonic Pump Down system

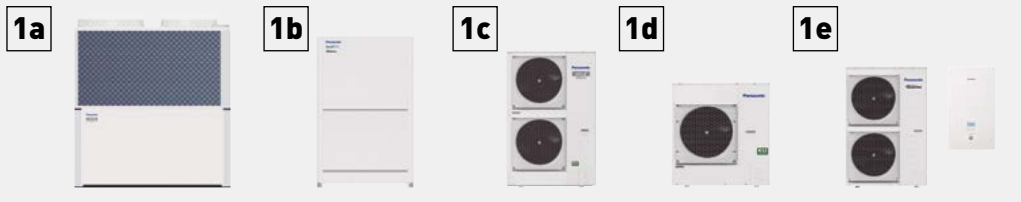
Innovative solutions for retail

Heating and cooling solutions for retail applications

Panasonic has developed solutions for retail and office applications where return on investment is a key factor! The comfort inside the shop is key for a good customer experience. From local control or Panasonic's cloud control system, a detailed status of the heating and cooling system can be displayed, analysed and optimised in order to improve the efficiency, reduce the running time and increase the life time of the units.

8 reason why Panasonic is the best solution for your retail:

- Complete solution
- Flexibility and adaptability
- Go green retail: low CO_2 emissions
- Comfort - high customer satisfaction
- Future expansion
- Panasonic offers efficient systems meeting expectations over the life-span of the project
- High quality of service with Panasonic pro-partner installation team
- The system will still operate down to 25% of the connected indoor units. System will not stop when only 25% of indoor units have power supply breakdown when they are on mode

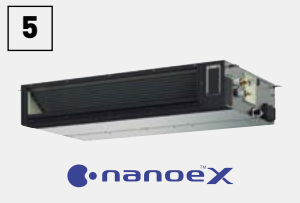


Multi energy solutions, gas or electric.
The Multi energy solution (Gas and Electric) from Panasonic provides the best choice in energy saving and on the flexibility of the installation. Panasonic solutions can be connected to direct expansion systems, water chiller installations and ventilation systems as air handling units.
1a: Gas VRF. ECO G
1b: Electric VRF. ECOi
1c: Electric VRF. Mini ECOi
1d: Electric 1x1. PACi NX
1e: Electric A2W. Aquarea

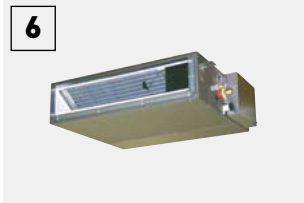
YKEA unit for server room.
Steady cooling, nonstop, even at -25 °C and still with high efficiency. Ready for continuous operation and easy to connect 2 systems to automatically alternate and ensure server rooms are kept cool.

Control your way.
Wide variety of controls, from simple user control to full system control via remote access functionality. Touch panel and consumption control.

Econavi Sensor.
The Econavi Sensor detects presence in the room, and quietly adapts the PACi or VRF air conditioning system in order to improve comfort and energy savings.



Wide range of indoor units.
All units provided with supply air temperature sensor and low operation sound level to guarantee maximum guest comfort. Units equipped with nanoe™ X (available in specific models) provide better air quality in public spaces in the hotel.



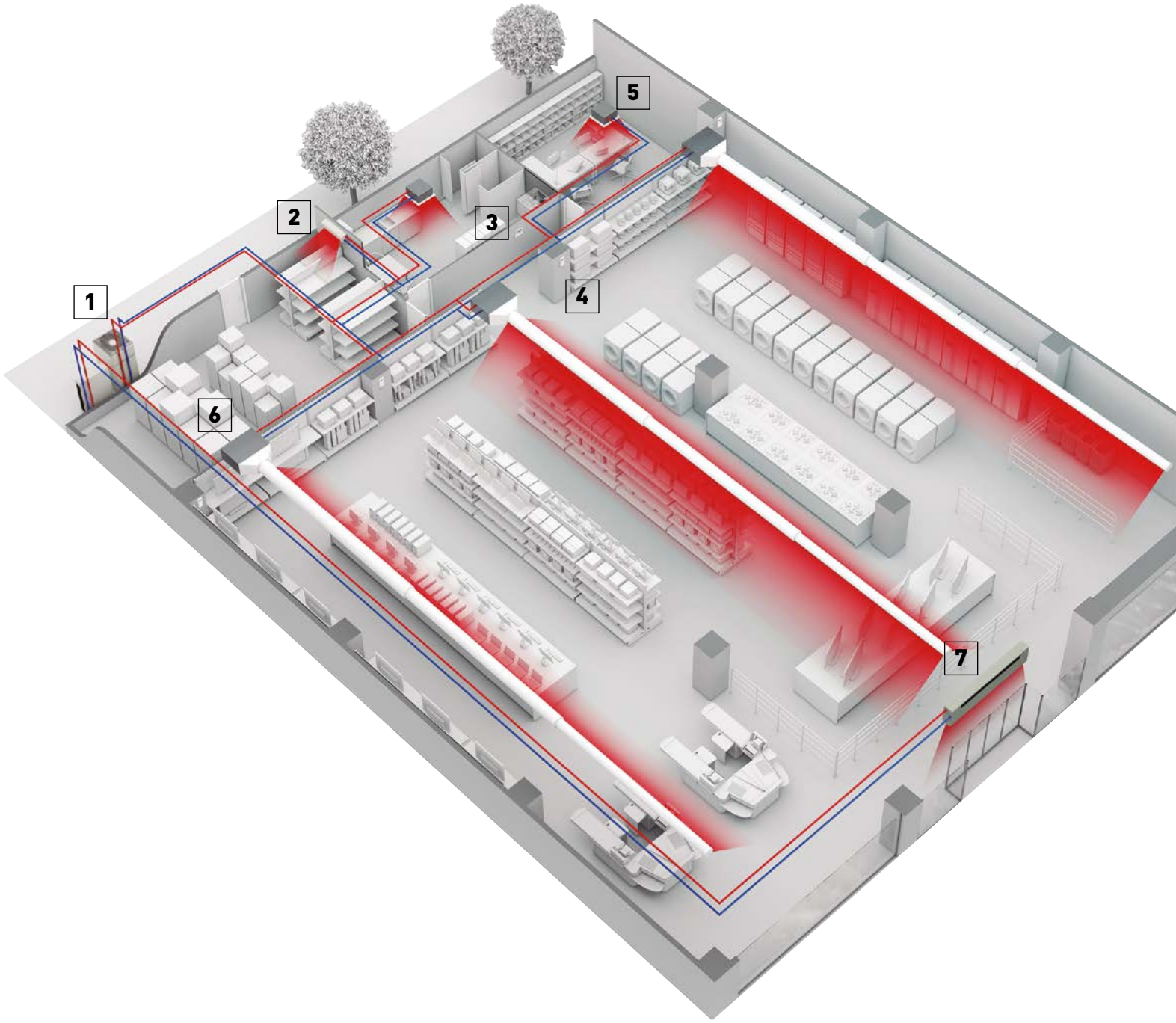
Hide-away, for power and efficiency.
Super silent units deliver the ideal air supply. Units available from 1,5 kW providing precise temperature control even in small rooms. Two models available: slim unit for height restricted areas (MM type with only 200 mm height and MF type).

Air curtain with DX coil.
The Panasonic range of air curtains is designed for smooth operation and efficient performance.

Protocol friendly.
Great flexibility for integration into your KNX / Modbus / LonWorks / BACnet projects allows fully bi-directional monitoring and control of all the functioning parameters. Range of solutions to control locally or remotely the full system in bi-directional mode.

AHU connection kit for efficient ventilation.
The AHU connection kit is specially designed to improve the efficiency of the pre-heating or pre-cooling process of the ventilation.

Energy Recovery unit for high efficiency of the system.
Panasonic Energy Recovery Ventilators can reduce the outside air load because they efficiently recover the heat lost by ventilation during the heat recovery process.


1
2
3
4
5
6
7

VRF outdoor units range

Page	Outdoor units	4 HP	5 HP	6 HP	8 HP	10 HP	12 HP
P. 254	R32 REFRIGERANT Mini ECOi LZ2 Series · R32	 U-4LZ2E5 / U-4LZ2E8	 U-5LZ2E5 / U-5LZ2E8	 U-6LZ2E5 / U-6LZ2E8	 U-8LZ2E8	 U-10LZ2E8	
P. 260	Mini ECOi LE2 / LE1 Series · R410A	 U-4LE2E5 / U-4LE2E8	 U-5LE2E5 / U-5LE2E8	 U-6LE2E5 / U-6LE2E8	 U-8LE1E8	 U-10LE1E8	
P. 272	2-Pipe ECOi EX ME2 Series · R410A				 U-8ME2E8	 U-10ME2E8	 U-12ME2E2E8
P. 282	3-Pipe ECOi EX MF3 Series · R410A				 U-8MF3E8	 U-10MF3E8	 U-12MF3E8
P. 292	2-Pipe ECO G GE3 Series · R410A						
P. 296	3-Pipe ECO G GF3 Series · R410A						
P. 298	GHP/EHP Hybrid System · R410A						

14 HP	16 HP	18 HP	20 HP	25 HP	30 HP
 U-14ME2E8	 U-16ME2E8	 U-18ME2E8	 U-20ME2E8		
 U-14MF3E8	 U-16MF3E8				
	 U-16GE3E5		 U-20GE3E5	 U-25GE3E5	 U-30GE3E5
	 U-16GF3E5		 U-20GF3E5	 U-25GF3E5	
					 U-20GES3E5 / U-10MES2E8

Best efficiency ECOi Series from Panasonic

The ECOi Series is designed for energy savings, easy installation, and high efficiency. Always continuing to evolve, Panasonic uses advanced technologies to meet the requirements of diverse situations and contribute to the creation of comfortable living spaces.

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

High performance of Panasonic's ECOi Series is verified by Eurovent now*!

* Detailed data in page 352.

Mini ECOi LZ2 Series · R32.

The Mini ECOi LZ2 Series utilizes environmentally friendly R32 refrigerant, reducing the total amount of refrigerant by 20% and more, resulting in lower GWP, reduced by 75%*.

* As a result of applying R32 while at the same time reducing the total refrigerant amount.

Mini ECOi LE Series · R410A.

The 2-Pipe heat pump small VRF system specifically designed for the European market.

2-Pipe ECOi EX ME2 Series · R410A.

The VRF system delivering energy-saving performance, powerful operation, reliability and comfort surpassing anything previously possible.

3-Pipe ECOi EX MF3 Series · R410A.

The VRF system that offers high-efficiency and performance for simultaneous heating and cooling.

Lower running and life cycle costs.
Panasonic ECOi systems are highly efficient VRF systems, offering COPs in excess of 4,0 at full load conditions. The system is also designed to make sure that we reduce the running cost of each system by using our unique road map control routine to ensure that the efficient combination of compressors are running at any one time. Improved defrost sequencing also reduces running costs by defrosting each outdoor coil in turn when conditions allow. Up to 64 indoor units can be connected with a capacity ratio of up to 200% indexed indoor unit loads, enabling the system to be used effectively on highly diversified building loads: this large connectability feature makes it an easy-to-design solution for schools, hotels, hospitals and other large buildings. Up to 1000 m in pipe length enables the VRF ECOi Series to be used in very large buildings, with maximum design flexibility. The ECOi system is also easy to control. It has more than 8 types of control from standard wired remote controls to touch screen panels or web access interfaces.

DC-Inverter control technology for rapid and powerful cooling and heating. The ever-evolving Panasonic ECOi Series.

ECOi Series benefits.

Ease of installation.
R410A with its higher operating pressure and lower pressure loss allows for smaller pipe sizes to be used with reduced refrigerant charge.

Simple to design.
Panasonic recognise that designing, selecting and preparing a professional VRF quotation can be a time consuming and costly process, especially as it is often also a speculative exercise. So we have designed proprietary software which is quick and easy to use and produces a full schematic layout of pipework and controls, as well as a full materials list with supporting performance data.

Easy to control.
A wide variety of control options are available to ensure that the ECOi system provides the user with the degree of control that they desire, from simple room controllers through to state of the art BMS controls.

Simple to commission.
Simple set-up procedure including automatic addressing of connected indoor units. Configuration settings can be made from an outdoor unit or via a remote controller.

Easy to position.
The compact design of the ECOi outdoor units means that sizes 4 HP to 10 HP fit into a standard lift and are easy to handle and position when on site. The small footprint and modular appearance of the units ensure a cohesive appearance to an installation.

Wide selection and connectability.
With 17 indoor model styles available, ECOi systems are the ideal choice for multiple small capacity indoor unit installations, with the ability to connect up to 40 indoor units to systems of 24 HP or greater for 3-Pipe ECOi EX MF3 Series.

Easy to maintain.
Each system allows the use of prognostic and diagnostic controls routines, to manage system operation and identifying faults, all designed to reduce the speed of maintenance calls and unit down time.

Mini ECOi LZ2 Series R32

ECO i

Outstanding efficiency in a compact body and continuous operation even at extreme ambient temperatures.

Industry 1st 8 HP and 10 HP Mini VRF units with R32

4 / 5 / 6 HP

8 / 10 HP

R32
REFRIGERANT

1 Low GWP and less refrigerant

The Mini ECOi LZ2 Series utilizes environmentally friendly R32 refrigerant, reducing the total amount of refrigerant by 20% and more, resulting in lower GWP, reduced by 75%*.

* As a result of applying R32 while at the same time reducing the total refrigerant amount.

2 Outstanding efficiency at the most challenging ambient conditions

Re-engineered for better performance, the LZ2 series produces extraordinary savings with SEER levels up to 8,5 and SCOP levels up to 5,0 (for 4 HP model). The large range of outdoor units from 12 kW to 28 kW can also work at extreme ambient temperatures, down to -20 °C in heating and up to 52 °C in cooling, providing a very wide range of operating ability.

3 More flexibility for your project

The ECOi LZ2 series provides ease of installation with long piping lengths and small footprints in a lightweight body. A variety of indoor units, supporting Panasonic's optional R32 refrigerant leak detector, increases the flexibility for installers. A wide range of individual and central controllers, AC Smart Cloud and Service Cloud, as well as apps for end users and installers, provide a fully customizable monitoring and controlling solution.

Minimum environmental impact.
Panasonic has designed the LZ2 series in order to minimize the environmental impact of the system. Low GWP refrigerant R32 and highest efficiency levels ensure this through the total operational lifetime.

VRF with outstanding energy-saving performance and superior SEER and SCOP

Mini ECOi LZ2 provides the optimal performance in any climatic condition.

Wide operating range
-20 °C in heating to
52 °C in cooling

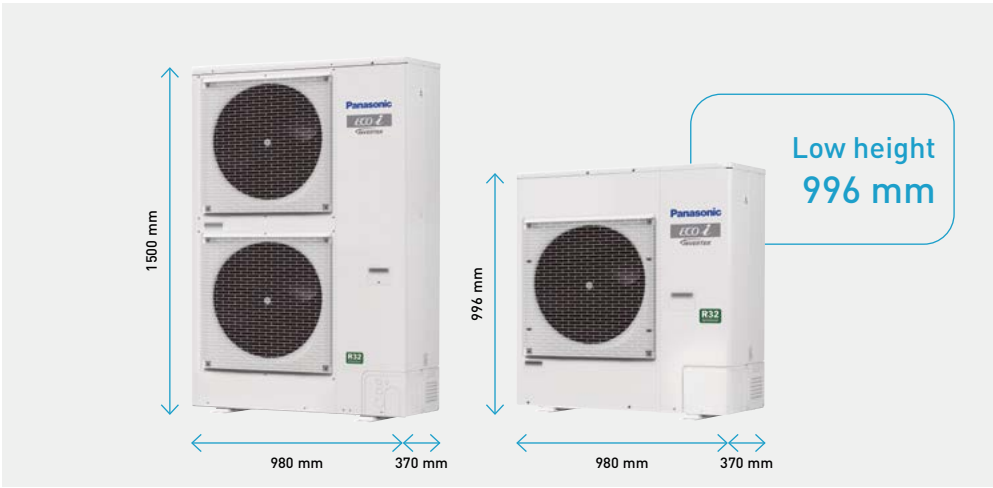
8,5 SEER | 5,0 SCOP
Extraordinary savings

ECOi LZ2 mini VRF series from 12 to 28 kW

- Improving protection 24/7. Unique indoors with nanoe™ X, hydroxyl radicals contained in water
- SEER levels up to 8,5 and SCOP levels up to 5,0 (for 4 HP model)
- Low GWP and highly reduced refrigerant volume
- Improved connectivity with CONEX remote controllers and app support, Smart and Service Cloud applications and support for communication protocols for BMS integration
- Wide range of connectable units allowing wide range of installations with and without refrigerant mitigation
- Increased indoor / outdoor capacity ratio up to 150%
- Quiet mode operation with low capacity drop
- Same Panasonic DNA with Panasonic compressors and precise temperature control thanks to discharge temperature sensors in the indoor units
- Continuous operation at extreme ambient temperatures: -20 °C (heating) to 52 °C (cooling)
- Flexible mitigation measures, with Panasonic R32 refrigerant leak detector / alarm to be installed only when required
- 35 Pa static pressure

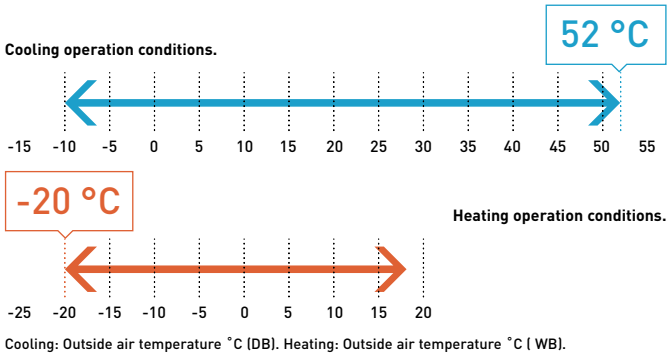
For the most challenging spaces

The Mini ECOi LZ2 R32 VRF system is the ideal solution to fit into any application thanks to its compact design and long piping length support.



Extended design operation conditions

LZ2 mini VRF is extremely reliable even under the most difficult conditions. The units can operate in cooling mode at extreme temperatures, 52 °C in cooling and -20 °C in heating mode.



Cooling: Outside air temperature °C (DB). Heating: Outside air temperature °C (WB).

Compatible with a large range of indoor units and controls

An expansion of Panasonic VRF line up, the Mini ECOi R32 is compatible with a large range of indoor units and can utilize all Panasonic's scalable control and monitoring solutions.

Wide range of indoor units, either supporting Panasonic's optional R32 refrigerant leak detector alarm or having built-in detectors provide a great flexibility for all types of installation.

Scaling your control options from a single zone to geographically distributed facilities.
LZ2 series are fully compatible with all control and connectivity solutions from Panasonic. With a wide range of individual controllers, hotel room controllers, optional wireless adapters, VRF Smart Connectivity+, easy BMS connection with S-Link and Panasonic AC Smart Cloud compatibility. LZ2 series, the most flexible control and monitoring R32 solution in the market.


4 way 90x90 cassette


Connects Panasonic R32 sensor


4 way 60x60 cassette


Connects Panasonic R32 sensor


Variable static pressure adaptive duct


Built-in R32 sensors

Wall-mounted


Connects Panasonic R32 sensor


Slim variable static pressure hide-away


Connects Panasonic R32 sensor

Panasonic R32 refrigerant leak detector/alarm (optional)

For compatible indoor unit models, Panasonic offers its optional external Panasonic R32 refrigerant leak detector (CZ-CGLSC1). This enables the customer to decide if a Panasonic R32 refrigerant leak detector is required to comply with the restrictions, or if the indoor unit may be safely installed in this room without it. This optional leakage detection sensor has an integrated alarm buzzer and can output a signal to a central alarm system in the building. The device is connected to the remote control terminals of the indoor unit and can be used in combination with any of the Panasonic VRF remote controllers, either wired or wireless.

Panasonic R32 refrigerant leak detector.
CZ-CGLSC1

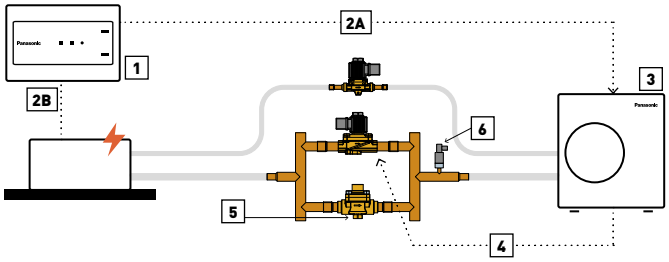
The alarm triggered by the Panasonic R32 refrigerant leak detector will also be transmitted and displayed on any connected centralised controller.

5 V external output (central monitoring etc.)

* Only one remote controller can be connected with the Panasonic R32 refrigerant leak detector.

R32 Pump Down solution

R32 Pump Down solution offers the assurance of additional safety protection, whilst expanding the potential installation cases, allowing for installation within smaller rooms.
Suitable for the Mini ECOi LZ2 range up to 10 HP, compatible indoor units connected to CZ-CGLSC1 or integrated Panasonic R32 refrigerant leak detector.



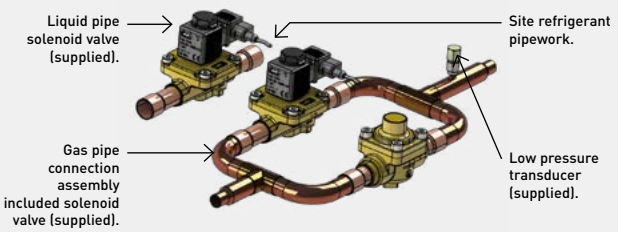
Operation steps: 1 | A leak is detected by the leak detection sensor. 2A | Leak alarm signal is sent to the outdoor unit. 2B | Indoor unit fan activated and runs at maximum speed. 3 | Pump Down procedure is activated. 4 | Solenoid valves are closed preventing refrigerant returning to indoor units. 5 | Outdoor unit is operating in Pump Down mode and check valve only allows flow to the outdoor unit. 6 | Low pressure switch threshold is reached. Error signal isolates the outdoor unit, preventing restart.

Technical focus

- Simplified design and installation
- Complies with IEC 60335-2-40 ed.6.0
- Recovers base charge within outdoor unit
- Expands potential installation cases
- IP rated connections for outdoor installation

Model reference	Description
PAW-PUD2WB-1	Basic Pump Down system (2 way) for one R32 Mini ECOi outdoor unit

Pump Down kit.
Indication of the items included within the Pump Down kit.



Mini ECOi LZ2 Series 4 to 6 HP · R32

Outstanding efficiency in a compact body and continuous operation even at extreme ambient temperatures.

- SEER levels up to 8,5 and SCOP levels up to 5,0 (for 4 HP model)
- Continuous operation at extreme ambient temperatures: -20 °C (heating) to 52 °C (cooling)
- Wide range of connectable units
- Unique indoors with nanoe™ X, hydroxyl radicals contained in water
- Allowing wide range of installations with and without mitigation measures
- Flexible mitigation measures, with Panasonic R32 refrigerant leak detector / alarm to be installed only when required

Low height
996 mm

HP			4 HP	5 HP	6 HP	4 HP	5 HP	6 HP
Outdoor unit			**U-4LZ2E5**	**U-5LZ2E5**	**U-6LZ2E5**	**U-4LZ2E8**	**U-5LZ2E8**	**U-6LZ2E8**
Power supply	Voltage	V	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Single phase	Single phase	Single phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50
Cooling capacity		kW	12,1	14,0	15,5	12,1	14,0	15,5
EER [1]		W/W	4,53	4,12	3,88	4,53	4,12	3,88
Current		A	13,30 - 12,80 - 12,20	16,90 - 16,20 - 15,50	19,60 - 18,70 - 18,00	4,37 - 4,15 - 4,00	5,50 - 5,23 - 5,04	6,44 - 6,12 - 5,89
Input power		kW	2,67	3,40	4,00	2,67	3,40	4,00
Heating capacity		kW	12,5	16,0	16,5	12,5	16,0	16,5
COP [1]		W/W	5,27	4,71	4,42	5,27	4,71	4,42
Current		A	12,00 - 11,40 - 11,00	16,90 - 16,20 - 15,50	18,50 - 17,70 - 17,00	3,91 - 3,71 - 3,58	5,50 - 5,22 - 5,03	6,02 - 5,72 - 5,51
Input power		kW	2,37	3,40	3,73	2,37	3,40	3,73
Starting current		A	1,0	1,0	1,0	1,0	1,0	1,0
Maximum current		A	19,6	23,7	26,5	7,2	9,2	9,9
Maximum input power		kW	3,92 - 4,10 - 4,28	4,76 - 4,98 - 5,19	5,41 - 5,66 - 5,90	4,40 - 4,63 - 4,80	5,69 - 5,99 - 6,22	6,15 - 6,47 - 6,72
Maximum number of connectable indoor units [2]			7 (10)	8 (12)	9 (12)	7 (10)	8 (12)	9 (12)
External static pressure		Pa	0 ~ 35	0 ~ 35	0 ~ 35	0 ~ 35	0 ~ 35	0 ~ 35
Air flow		m^3/min	69	72	74	69	72	74
Sound pressure	Cool	dB(A)	52	53	54	52	53	54
	Cool (Silent 1/2/3/4)	dB(A)	49/47/45/45	50/48/46/45	51/49/47/45	49/47/45/45	50/48/46/45	51/49/47/45
	Heat	dB(A)	54	56	56	54	56	56
Sound power	Cool / Heat	dB(A)	69/72	70/74	72/75	69/72	70/74	72/75
Dimension	H x W x D	mm	996 x 980 x 370	996 x 980 x 370	996 x 980 x 370	996 x 980 x 370	996 x 980 x 370	996 x 980 x 370
Net weight		kg	94	94	94	94	94	94
Piping diameter	Liquid	Inch (mm)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)
	Gas	Inch (mm)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)
Maximum piping length (total)		m	90 (180)	90 (180)	90 (180)	90 (180)	90 (180)	90 (180)
Elevation difference (in / out)		m	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)
Refrigerant (R32)		kg	2,7	2,7	2,7	2,7	2,7	2,7
Maximum allowable indoor / outdoor capacity ratio [3]		%	50 ~ 150 (130)	50 ~ 150 (130)	50 ~ 150 (130)	50 ~ 150 (130)	50 ~ 150 (130)	50 ~ 150 (130)
Operating range	Cool Min ~ Max	°C	-10 ~ 52	-10 ~ 52	-10 ~ 52	-10 ~ 52	-10 ~ 52	-10 ~ 52
	Heat Min ~ Max	°C	-20 ~ 18	-20 ~ 18	-20 ~ 18	-20 ~ 18	-20 ~ 18	-20 ~ 18

ErP data [4]						
SEER [5]	**8,50**	**8,12**	**7,71**	**8,50**	**8,12**	**7,71**
$\eta_{s,c}$	**337,0%**	**321,8%**	**305,4%**	**337,0%**	**321,8%**	**305,4%**
SCOP [5]	**5,05**	**4,61**	**4,59**	**5,05**	**4,61**	**4,59**
$\eta_{s,h}$	**199,0%**	**181,4%**	**180,6%**	**199,0%**	**181,4%**	**180,6%**

1) EER and COP calculation is based on EN 14511. 2) The number in parenthesis indicates maximum number of connectable indoor unit in case of 1,5 kW indoor units connection. 3) The number in parenthesis indicates maximum allowed indoor / outdoor capacity ratio in case of 1,5 kW indoor units connection. 4) SEER / SCOP and $\eta_{s,c}$ / $\eta_{s,h}$ are in accordance with ErP test data for U2 type 4 way 90x90 cassette indoor units. 5) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF.

Minimum environmental impact

Panasonic has designed the LZ2 series in order to minimize the environmental impact of the system. Low GWP refrigerant R32 and highest efficiency levels ensure this through the total operational lifetime.

For the most challenging spaces

The Mini ECOi LZ2 R32 VRF system is the ideal solution to fit into any application thanks to its compact design and long piping lengths.

R32 · INVERTER+ · R2 ROTARY COMPRESSOR · BLUEFIN · -10 °C COOLING MODE · -20 °C HEATING MODE · AUTOMATIC RESTART · PANASONIC AC SMART CLOUD · OPTIONAL WI-FI · 5 YEARS COMPRESSOR WARRANTY

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

INTERNET CONTROL: Optional.

Mini ECOi LZ2 Series 8 and 10 HP · R32

Introducing widest range of R32 Mini VRF.

- SEER levels up to 7,6 and SCOP levels up to 4,6 (for 8 HP model)
- Continuous operation at extreme ambient temperatures: -20 °C (heating) to 52 °C (cooling)
- Widest range of connectable units in R32 VRF
- Unique indoors with nanoe™ X, hydroxyl radicals contained in water
- Allowing wide range of installations with and without refrigerant mitigation
- Flexible mitigation measures, with Panasonic R32 refrigerant leak detector / alarm to be installed only when required

Industry 1st
8 HP and 10 HP
Mini VRF units
with R32

HP			8 HP	10 HP
Outdoor unit			**U-8LZ2E8**	**U-10LZ2E8**
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase
	Frequency	Hz	50	50
Cooling capacity		kW	22,4	28,0
EER [1]		W/W	3,84	3,47
Current		A	9,73 - 9,25 - 8,91	13,2 - 12,5 - 12,1
Input power		kW	5,83	8,07
Heating capacity		kW	25,0	28,0
COP [1]		W/W	4,30	4,47
Current		A	9,81 - 9,32 - 8,98	10,5 - 9,93 - 9,57
Input power		kW	5,81	6,26
Starting current		A	1,0	1,0
Maximum current		A	13,7	19,5
Maximum input power		kW	8,21 - 8,64 - 8,96	11,9 - 12,6 - 13,0
Maximum number of connectable indoor units [2]			16	16
External static pressure		Pa	0 ~ 35	0 ~ 35
Air flow		m^3/min	158	167
Sound pressure	Cool	dB(A)	59,0	60,0
	Cool (Silent 1 / 2 / 3 / 4)	dB(A)	56 / 54 / 52 / 50	57 / 55 / 53 / 50
Sound power	Cool	dB(A)	72	74
Dimension	H x W x D	mm	1500 x 980 x 370	1500 x 980 x 370
Net weight		kg	125	126
Piping diameter	Liquid	Inch (mm)	3/8 (9,52)	3/8 (9,52)
	Gas	Inch (mm)	3/4 (19,05)	7/8 (22,22)
Maximum piping length (total)		m	100 (300)	100 (300)
Elevation difference (in / out)		m	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)
Refrigerant (R32)		kg	4,9	5,1
Maximum allowable indoor / outdoor capacity ratio [3]		%	50 ~ 150 (130)	50 ~ 150 (130)
Operating range	Cool Min ~ Max	°C	-10 ~ 52	-10 ~ 52
	Heat Min ~ Max	°C	-20 ~ 18	-20 ~ 18

ErP data [4]		
SEER [5]	**7,56**	**7,08**
$\eta_{s,c}$	**299,4%**	**280,2%**
SCOP [5]	**4,59**	**4,60**
$\eta_{s,h}$	**180,6%**	**181,0%**

1) EER and COP calculation is based on EN 14511. 2) The number in parenthesis indicates maximum number of connectable indoor unit in case of 1,5 kW indoor units connection. 3) The number in parenthesis indicates maximum allowed indoor / outdoor capacity ratio in case of 1,5 kW indoor units connection. 4) SEER / SCOP and $\eta_{s,c}$ / $\eta_{s,h}$ are in accordance with ErP test data for F2 type variable static pressure hide-away indoor units. 5) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF.

Perfect fit for small to medium size projects

8 and 10 HP LZ2 Mini VRF units bring in the total benefits of a VRF system in a smaller application. You can enjoy advanced individual and central VRF control options including the revolutionary Panasonic AC Smart Cloud and AC Service Cloud.

For the most difficult conditions

The Mini ECOi LZ2 series are able to operate at the hardest conditions from -20 °C up to +52 °C providing continuous and efficient, heating and cooling for your space all year long.

R32 · INVERTER+ · R2 ROTARY COMPRESSOR · BLUEFIN · -10 °C COOLING MODE · -20 °C HEATING MODE · AUTOMATIC RESTART · PANASONIC AC SMART CLOUD · OPTIONAL WI-FI · 5 YEARS COMPRESSOR WARRANTY

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

Mini ECOi LE Series for light commercial and residential use

Mini ECOi with extraordinary energy-saving performance and high external static pressure (35Pa).

Compact design

7,9 SEER | 4,9* SCOP

Industry leading efficiency

4 / 5 / 6 HP

8 / 10 HP

6,4* SEER | 4,3 SCOP

1 Efficiency energy control

Upgraded outdoor units deliver high efficiency rating and reduced energy costs.

2 Space saving

Ideal for commercial locations with limited space such as banks and shops.
Compact units integrate easily and discreetly into building design.

3 Flexible installation

Reduced installation time thanks to compact units and extra long piping without additional refrigeration charge. High external static pressure 35 Pa and small chassis increase installation options.

Compact design: LE2 Series - 4 / 5 / 6 HP

- Extraordinary energy saving: 7,9 SEER and 4,9 SCOP (4 HP)*
- 50 m piping length without additional refrigerant charge
- Quiet operation mode with 4 levels
- High COP mode option

* SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF.

LE1 Series - 8 / 10 HP

- 60% smaller than ECOi ME2 8 / 10 HP vertical flow type
- Flexible piping length (Total: 300 m, Furthest: 150 m)
- Maximum number of connectable indoor units: 15

Key features for LE2 / LE1.

- **High external static pressure 35 Pa**
- **Full range of ECOi indoor units and controllers**
- **Variable evaporation temperature control as standard**
- **Connectable maximum indoor / outdoor capacity ratio up to 130%**
- **Auto restart from outdoor units**
- **Demand response (Peak cut) by optional parts**
- **Suitable for R22 renewable projects**

Flexible, easy and hassle free installation

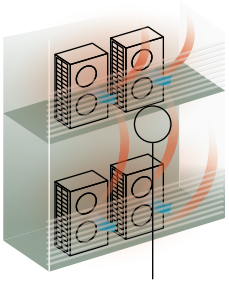
Compact space-saving design. High external static pressure 35 Pa. Long piping length for flexible installation. No additional refrigerant charge up to 50 m. 130% capacity ratio for connectable indoor units.

High external static pressure 35 Pa

· High air pressure
· An efficient blade design
· Perfect for high class condominiums

When unit is installed on a narrow balcony and exposed to the sun, the barrier at the front side may restrict hot air from being discharged. Heat accumulated in an enclosure can cause over-heating. This may potentially result in damage or shorten the product's life span. A high external static pressure fan sends the air further away from the outdoor unit and through the barrier. This provides better air circulation and distribution.
And a high air pressure of 35 Pa discharges the hot air to a sufficient distance.

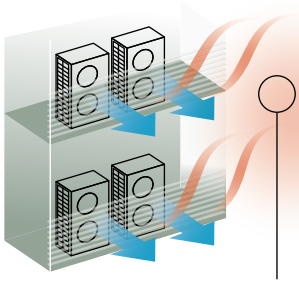
Previous model - low pressure.



Heat accumulated.
When the pressure is low, hot air will accumulate in the unit thus affecting its work performance and that of unit above it as well.

Previous fan

LE Series - high pressure.

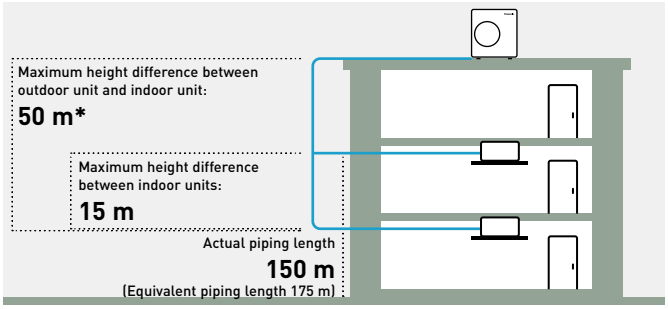


Heat discharged.
But with a high pressure of 35 Pa, hot air is sent further away preventing overheating inside the outdoor unit enclosure.

LE2's fan

Long piping design length for greater design flexibility

LE1: Maximum total piping length: 300 m.
LE2: Maximum total piping length: 180 m.

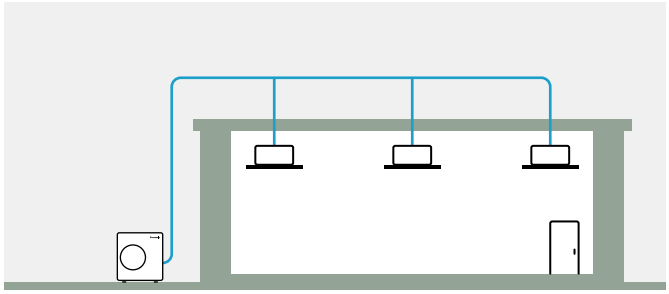


* 40 m if the outdoor unit is below the indoor unit.

Plug & Play concept

· 50 m piping length free of charge
· A 50 m pipe length is sufficient for most residential and small business buildings

Free of charge
50 m



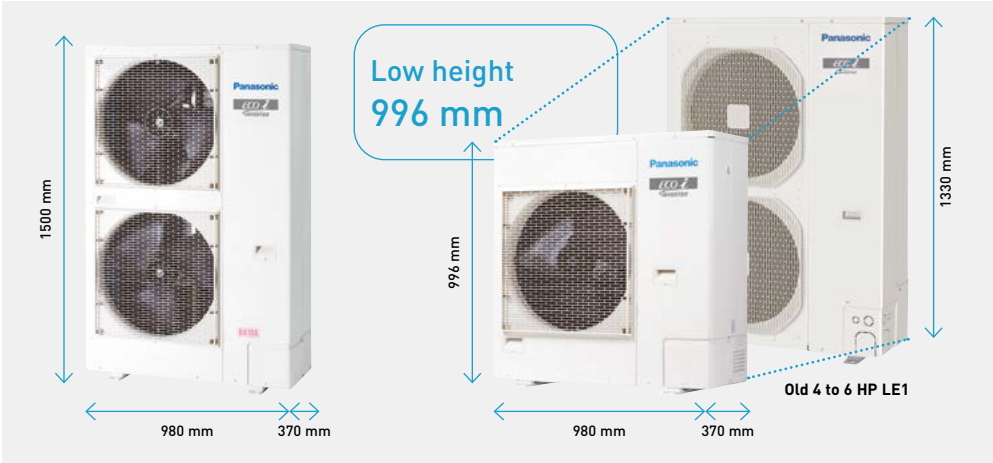
Connection of up to 15 indoor units

An expansion from Panasonic VRF line up, the mini ECOi is compatible with the same indoor units and controls as the rest of the ECOi range.

Compact design

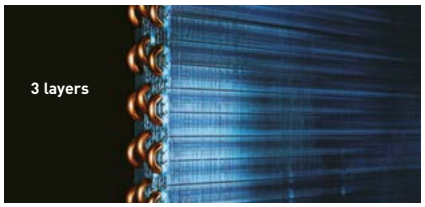
Mini ECOi LE Series is a single unit.
Perfect for installations with limited space and easy to hide within a modern building. Flexible space-saving options compared to single split system.

LE2 low height of 996 mm.
LE2 Series is 25% smaller in height than conventional model.

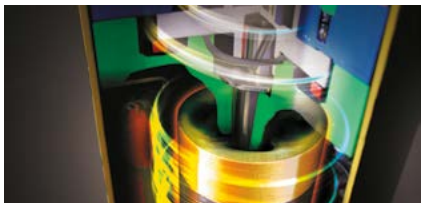


Energy control and reliability

The Mini ECOi system delivering energy-saving performance, powerful operation, reliability and comfort surpassing anything previously possible.



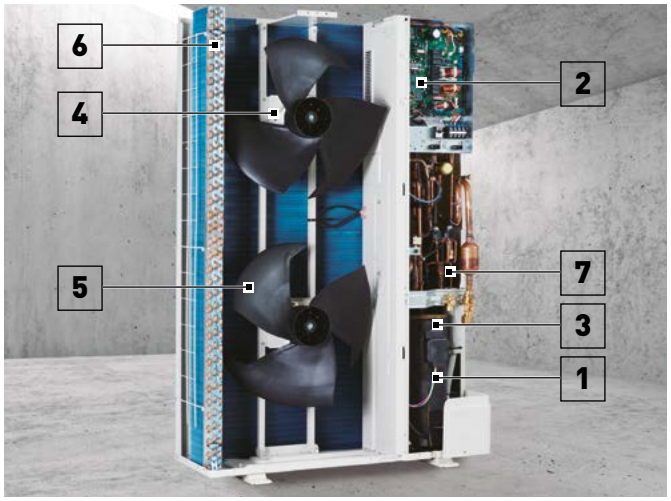
Powerful heat exchanger.
3 layers of heat exchanger for all LE Series. LE Series features the same heat exchange volume as conventional model even though it is 15% smaller in size.



Panasonic twin rotary compressor.
A large capacity Inverter compressor has been adopted. This compressor features wider and 0,1 Hz step Inverter control.

Design fan.
Fan braves have been redesigned to inhibit air resistance and to increase efficiency. The larger fan increases air flow while maintaining low noise levels.

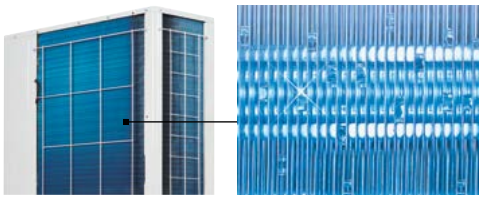
Energy savings design



1 | **Panasonic Inverter compressor.** A large-capacity Inverter compressor has been adopted. The Inverter compressor is superior in performance with improved partial-load capacity.
2 | **Printed circuit board.** Maintenance is made easier with only 2 PCBs.
3 | **Accumulator.** A large accumulator has been adopted to maintain compressor reliability because of the increased refrigerant quantity, which allows an extended maximum piping length.
4 | **DC fan motor.** Checking load and outside temperature, the DC motor is controlled for optimum air flow.
5 | **Blade shape.** The fan blades have been developed to inhibit air turbulence and increase efficiency. As the fan diameter has been increased, air flow has also increased whilst maintaining a same sound level.
6 | **Heat exchanger and copper tubes.** The heat exchanger size and the copper tube sizes in the heat exchanger have been redesigned to increase efficiency.
7 | **Oil separator.** A centrifugal separator has been adopted to improve oil separation efficiency and reduce refrigerant pressure loss.

Bluefin condenser: high durability outdoor unit

The anti-corrosion Bluefin treatment of the heat exchanger provides greater resistance against corrosion. All models are equipped with Bluefin condenser and corrosion-resistance treated for high resistance to rust and salty air to assure long-lasting performance.



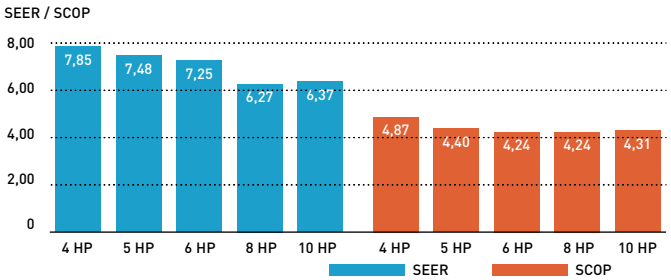
Heat exchanger (Bluefin condenser)

Maximum comfort with quiet operation mode

· Quiet operation mode reduces outdoor unit operating sound by 7 dB(A)
· 4-step set point is available
· Silent mode 1 maintains rated cooling capacity

* Timer setting of quiet operation mode is available in High-spec remote controller.

Silent mode options	Sound pressure level
Silent mode 1	-1,5 dB(A)
Silent mode 2	-3 dB(A)
Silent mode 3	-5 dB(A)
Silent mode 4	-7 dB(A)



Superior seasonal energy efficiency (SEER / SCOP follows LOT21*)

The operation efficiency has been improved using highly efficient R410A refrigerant, a DC Inverter compressor, DC motor and a heat exchanger design.

* SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF.

Mini ECOi LE2 Series high efficiency 4 to 6 HP · R410A

Panasonic Mini ECOi. Extraordinary energy-saving.

The most compact ECOi system ever.

· Outstanding SEER and SCOP
· Better efficiency even compared to 2 fan outdoor units
· 50 m piping without additional refrigeration charge
· High static pressure 35 Pa
· High COP mode selectable with maintenance remote controller
· Selectable silent mode

HP			4 HP	5 HP	6 HP	4 HP	5 HP	6 HP
Outdoor unit			**U-4LE2E5**	**U-5LE2E5**	**U-6LE2E5**	**U-4LE2E8**	**U-5LE2E8**	**U-6LE2E8**
Power supply	Voltage	V	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Single phase	Single phase	Single phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50
Cooling capacity		kW	12,1	14,0	15,5	12,1	14,0	15,5
EER [1]		W/W	4,50	4,06	3,73	4,50	4,06	3,73
Current		A	13,30 - 12,70 - 12,20	16,30 - 15,60 - 17,00	20,30 - 19,40 - 18,60	4,39 - 4,17 - 4,02	5,58 - 5,30 - 5,11	6,71 - 6,37 - 6,14
Input power		kW	2,69	3,45	4,15	2,69	3,45	4,15
Heating capacity		kW	12,5	16,0	16,5	12,5	16,0	16,5
COP [1]		W/W	5,19	4,60	4,27	5,19	4,60	4,27
Current		A	12,20 - 11,60 - 11,20	17,60 - 16,80 - 16,10	19,10 - 18,20 - 17,50	3,98 - 3,78 - 3,64	5,62 - 5,34 - 5,14	6,24 - 5,93 - 5,71
Input power		kW	2,41	3,48	3,86	2,41	3,48	3,86
Starting current		A	1,00	1,00	1,00	1,00	1,00	1,00
Maximum current		A	17,30	24,30	27,40	7,90	10,10	10,70
Maximum input power		kW	3,50 - 3,66 - 3,82	4,92 - 5,14 - 5,37	5,61 - 5,86 - 6,12	4,34 - 5,09 - 5,28	6,25 - 6,55 - 6,82	6,62 - 6,97 - 7,23
Maximum number of connectable indoor units [2]			7 (10)	8 (10)	9 (12)	7 (10)	8 (10)	9 (12)
External static pressure		Pa	0 ~ 35	0 ~ 35	0 ~ 35	0 ~ 35	0 ~ 35	0 ~ 35
Air flow		m^3/min	69	72	74	69	72	74
Sound pressure	Cool	dB(A)	52	53	54	52	53	53
	Cool (Silent 1/2/3/4)	dB(A)	50,5 / 49 / 47 / 45	51,5 / 50 / 48 / 46	52,5 / 51 / 48 / 46	50,5 / 49 / 49 / 47	48,5 / 50 / 48 / 46	48,5 / 50 / 48 / 46
	Heat	dB(A)	54	56	56	54	56	56
Sound power	Cool / Heat	dB(A)	69 / 72	71 / 75	73 / 75	69 / 72	71 / 75	73 / 75
Dimension	H x W x D	mm	996 x 980 x 370	996 x 980 x 370	996 x 980 x 370	996 x 980 x 370	996 x 980 x 370	996 x 980 x 370
Net weight		kg	106	106	106	106	106	106
Piping diameter	Liquid	Inch (mm)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)
	Gas	Inch (mm)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)
Maximum piping length (total)		m	150 (180)	150 (180)	150 (180)	150 (180)	150 (180)	150 (180)
Elevation difference (in / out)		m	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)
Refrigerant (R410A) / CO_2 Eq.		kg / T	6,70 (14,40) / 13,9896	6,70 (14,40) / 13,9896	6,70 (14,40) / 13,9896	6,70 (14,40) / 13,9896	6,70 (14,40) / 13,9896	6,70 (14,40) / 13,9896
Maximum allowable indoor / outdoor capacity ratio		%	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130	50 ~ 130
Operating range	Cool Min ~ Max	°C	-10 ~ +46	-10 ~ +46	-10 ~ +46	-10 ~ +46	-10 ~ +46	-10 ~ +46
	Heat Min ~ Max	°C	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18

ErP data [3]						
SEER [4]	**7,85**	**7,48**	**7,25**	**7,85**	**7,48**	**7,25**
$\eta_{s,c}$	**311,0%**	**296,2%**	**286,8%**	**311,0%**	**296,2%**	**286,8%**
SCOP [4]	**4,87**	**4,40**	**4,24**	**4,87**	**4,40**	**4,24**
$\eta_{s,h}$	**191,8%**	**172,9%**	**166,7%**	**191,8%**	**172,9%**	**166,7%**

1) EER and COP calculation is based in accordance to EN14511. 2) In case of 1,5 kW indoor units connection, able to connect maximum 12 indoor units. 3) SEER / SCOP and $\eta_{s,c}$ / $\eta_{s,h}$ are in accordance with ErP test data for F2 type variable static pressure hide-away indoor units. 4) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF.

For light commercial use

Mini ECOi allows easier installation in condominiums and medium sized buildings with limited spaces. Utilising R410A and DC Inverter technology, Panasonic offers VRF to a new and growing market.

Reduced height of 996 mm

In addition to raising efficiency, the outdoor unit has been designed to be as compact as possible. It can now be installed in places that were previously too small.

INVERTER+ · R2 ROTARY COMPRESSOR · BLUEFIN · -10 °C COOLING MODE · -20 °C HEATING MODE · AUTOMATIC RESTART · R22 → R410A R22 RENEWAL · PANASONIC AC SMART CLOUD · OPTIONAL WI-FI · 5 YEARS COMPRESSOR WARRANTY · EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

INTERNET CONTROL: Optional.

Mini ECOi LE1 Series high efficiency 8 and 10 HP · R410A

Prepare to be blown away by Panasonic's Mini VRF system.

The Mini VRF compact system is the ideal solution for minimum outdoor space.
Panasonic extends the Mini VRF range by 8 and 10 HP units.

· Piping flexibility with 150 m maximum length
· High efficiency
· Connection of up to 15 indoor units
· Quiet operation mode (one of the lowest in the market)
· High ambient temp performance
· High static pressure 35 Pa

HP			8 HP	10 HP
Outdoor unit			**U-8LE1E8**	**U-10LE1E8**
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase
	Frequency	Hz	50	50
Cooling capacity		kW	22,4	28,0
EER [1]		W/W	3,80	3,11
Current		A	9,60 - 9,15 - 8,80	14,70 - 14,00 - 13,50
Input power		kW	5,89	9,00
Heating capacity		kW	25,0	28,0
COP [1]		W/W	4,02	3,93
Current		A	10,20 - 9,65 - 9,30	11,60 - 11,10 - 10,70
Input power		kW	6,22	7,13
Starting current		A	1,00	1,00
Maximum current		A	13,70	19,60
Maximum input power		kW	9,16	13,10
Maximum number of connectable indoor units [2]			15	15
External static pressure		Pa	0 ~ 35	0 ~ 35
Air flow		m^3/min	150	160
Sound pressure	Cool	dB(A)	60	63
	Cool (Silent 1 / 2 / 3)	dB(A)	57 / 55 / 53	60 / 58 / 56
	Heat	dB(A)	64	65
Sound power	Cool / Heat	dB(A)	81 / 85	84 / 86
Dimension	H x W x D	mm	1500 x 980 x 370	1500 x 980 x 370
Net weight		kg	132	133
Piping diameter	Liquid	Inch (mm)	3/8 (9,52) [3] / 1/2 (12,70) [4]	3/8 (9,52) [3] / 1/2 (12,70) [4]
	Gas	Inch (mm)	3/4 (19,05) [3] / 7/8 (22,22) [4]	7/8 (22,22) [3] / 1 (25,40) [4]
Maximum piping length (total)		m	7,5 ~ 150 (7,5 ~ 300)	7,5 ~ 150 (7,5 ~ 300)
Elevation difference (in / out)		m	50 (OU above) / 40 (OU below)	50 (OU above) / 40 (OU below)
Refrigerant (R410A) / CO_2 Eq.		kg / T	6,30 (24,00) / 13,1544	6,60 (24,00) / 13,7808
Maximum allowable indoor / outdoor capacity ratio		%	50 ~ 130	50 ~ 130
Operating range	Cool Min ~ Max	°C	-10 ~ +46	-10 ~ +46
	Heat Min ~ Max	°C	-20 ~ +18	-20 ~ +18

ErP data [5]		
SEER [6]	**6,27**	**6,37**
$\eta_{s,c}$	**247,9%**	**251,8%**
SCOP [6]	**4,24**	**4,31**
$\eta_{s,h}$	**166,4%**	**169,5%**

1) EER and COP calculation is based in accordance to EN14511. 2) If the heating utilized, it is necessary to increase 1 size with respect to the main liquid pipe, depending on the combination of the indoor unit. 3) Under 90 m for ultimate indoor unit. 4) Over 90 m for ultimate indoor unit. If the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas and liquid pipes. 5) SEER / SCOP and $\eta_{s,c}$ / $\eta_{s,h}$ are in accordance with ErP test data for F2 type variable static pressure hide-away indoor units. 6) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF.

Increase external static pressure

When unit is installed on a narrow balcony, any barrier in front will be an obstacle. High external static pressure will overcome this obstacle and maintain operating capacity.

High ambient temperature performance

Cooling operation range up to 46 °C. The system can maintain the rated (100%) capacity up to 40 °C by 8 HP model and up to 37 °C by 10 HP model.

INVERTER+ · R2 ROTARY COMPRESSOR · BLUEFIN · -10 °C COOLING MODE · -20 °C HEATING MODE · AUTOMATIC RESTART · R22 → R410A R22 RENEWAL · PANASONIC AC SMART CLOUD · OPTIONAL WI-FI · 5 YEARS COMPRESSOR WARRANTY

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

ECOi EX. The Game Changer

VRF with outstanding energy-saving performance and powerful operation SEER 7,56 (2-Pipe 18 HP model).

A game-changing VRF system delivering energy-saving performance, powerful operation, reliability and comfort surpassing anything previously possible.
It represents a true paradigm shift in air conditioning solutions. Taking quality to the extreme — that's the Panasonic challenge.

1 High performance at extreme conditions

ECOi EX is highly reliable, with strong cooling and heating power, even when operating at extreme ambient temperatures. The units can operate at 100% of capacity at 43 °C, reaching a great cooling operation up to 52 °C and in heating to -25 °C*.
Also, the ECOi EX features include Bluefin in the heat exchanger, improving efficiency in marine ambient. A silicone coated PCB (Printed Circuit Board) protects the unit from being damaged by environmental factors such as moisture and dust.

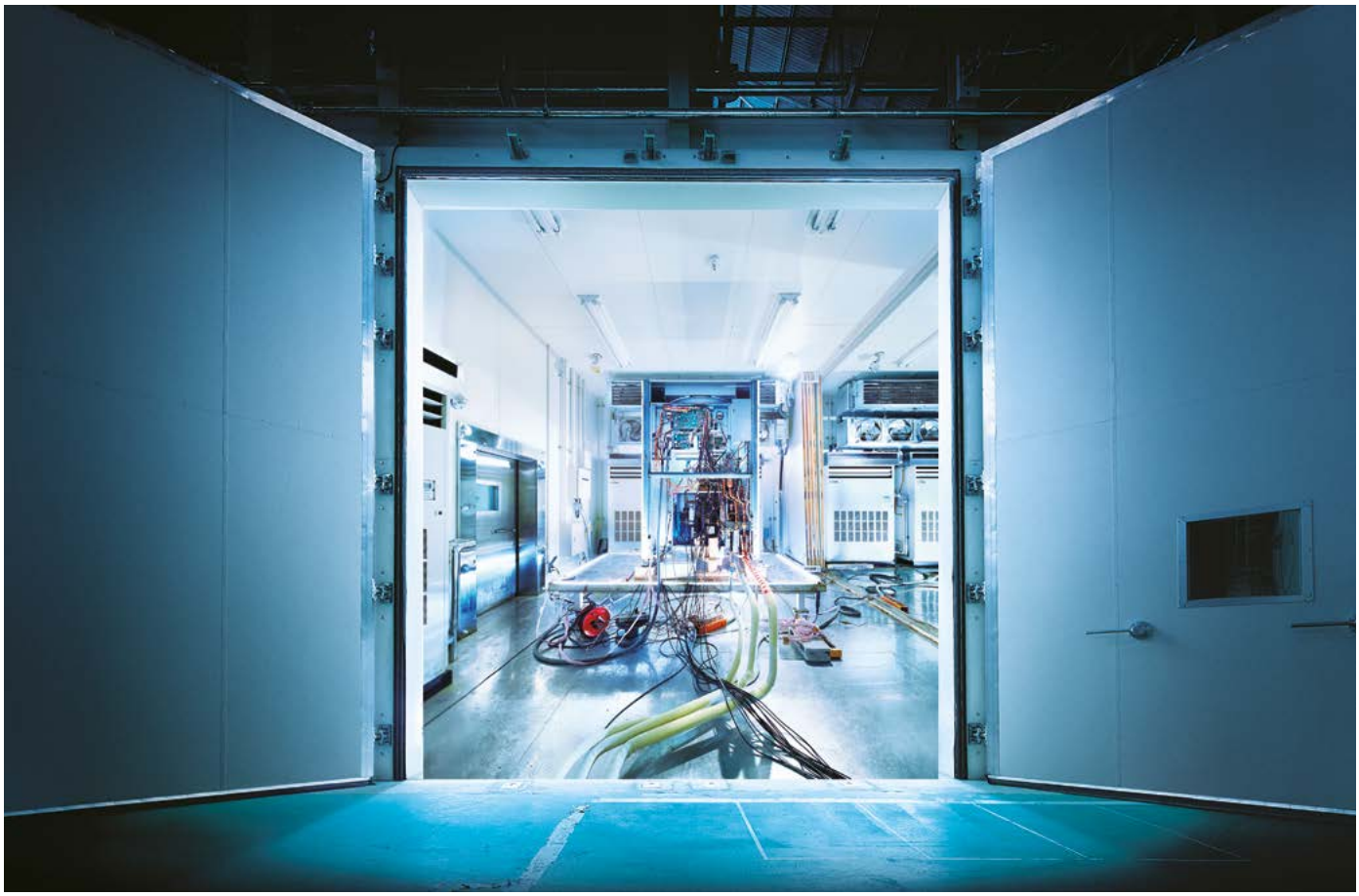
2 Outstanding efficiency and comfort

The ECOi EX system is designed to increase energy efficiency by delivering high SEER rating, as well as high efficiency for part-load operation.
The system has reduced energy costs thanks to "All-Inverter Compressors" with independent control, to deliver highly flexible performance. Also, the ECOi EX features an enlarged heat exchanger with triple surfaces that allow for improved heat transfer and a curved air discharge bell-mouth, for better aerodynamics. The three-stage oil recovery design makes it able to minimise the frequency of forced oil recovery, leading to reduced energy costs and sustained comfort.

3 Superior flexibility

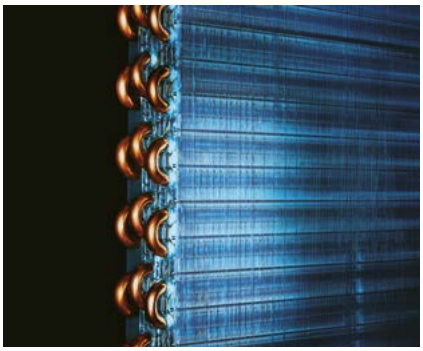
With up to 1000* meters of pipeline, 30 meters maximum height difference between indoor units and maximum 90 meters between outdoor unit and indoor unit, the design possibilities have grown exponentially, making the ECOi EX the ideal air conditioning option for expansive buildings, such as train stations, airports, schools or hospitals. These advantages are enhanced with the wide range of indoor unit models and capacities, facilitating the perfect adaptation to all kinds of project. The careful selection of controls and peripherals such as the Pump Down, the AHU and / or the chiller, enables an optimised system selection. Maximum allowable indoor / outdoor connected capacity ratio of up to 200%.

* Conditions of 2-Pipe ECOi EX ME2 Series.



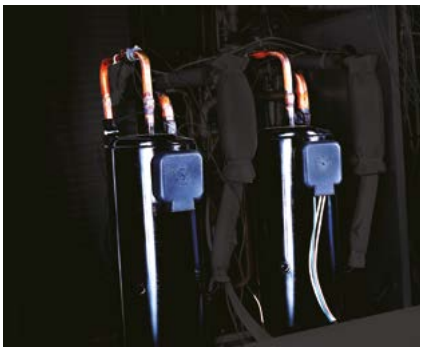
TOP efficiency and comfort

Remarkable improvement on key components: extraordinary energy-saving performance and redesigned for smooth and better air discharge.



Enlarged heat exchanger surface area with triple rows.

* For 8 and 10 HP unit, the heat exchanger is 2 row design.



Multiple large-capacity all Inverter compressors (from 14 HP).

Designed curved air discharge bell mouth for better aerodynamics.

Improvements on refrigerant circuit

Compressor.
Redesigned components in the body provide performance improvements especially in the rated cooling condition and ASEER performance.

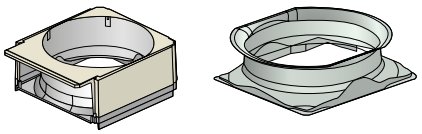
Accumulator.
Oil returning circuit with control valve makes efficient oil recovery to compressors.

Oil separator.
Modified tank design makes efficient oil separation with less pressure drop.

Receiver tank-less design
Improved refrigerant control program recovers the remaining refrigerant gas in the system back to the accumulator tank effectively.

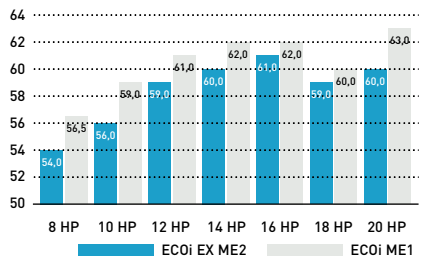
Smooth exhaust flow by bell-mouth

The curved shape with integrated top and bottom assure smooth exhaust flow.
This gives more air-volume with same sound level, less input power at same air flow.



Conventional model (ME1) ME2 model

Sound pressure dB(A)



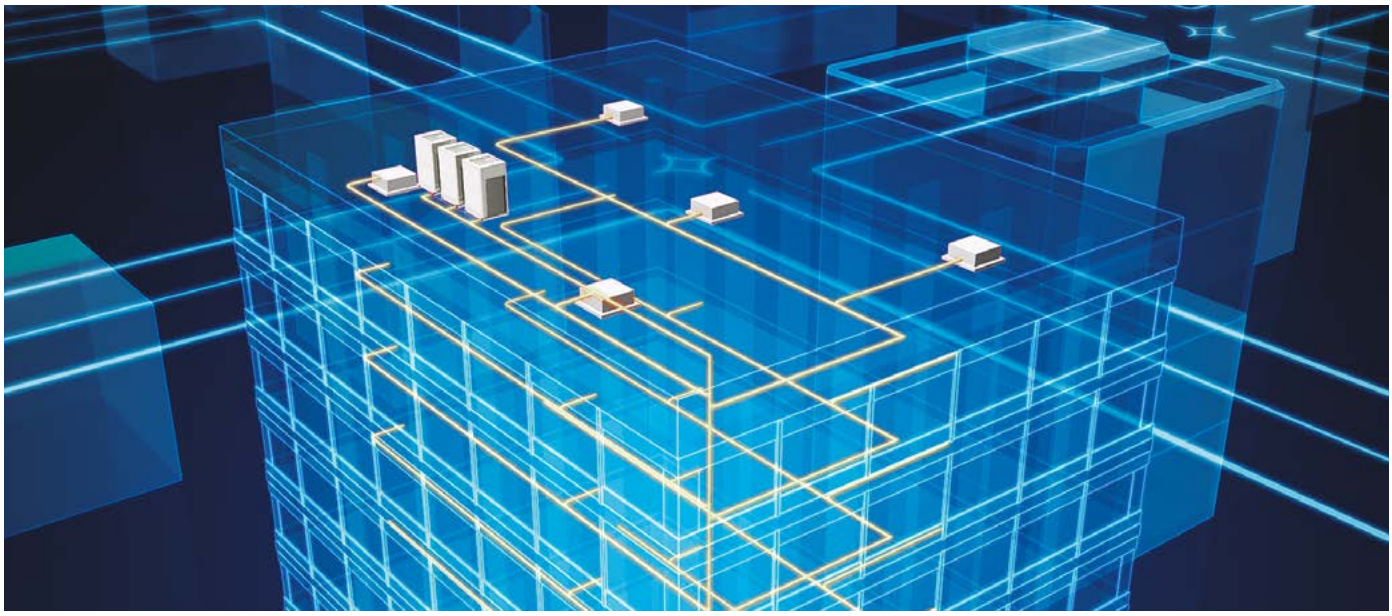
Combined 3 surface heat exchanger

The highly efficient piping pattern increases heat exchange performance by 5%.
The heat exchanger features a 3 surface construction.
Compared to the divided dual-surface construction in current models, there is no divided space and the face area of heat exchanger becomes larger.

ME1 model ME2 model

Oil recovery intelligent control

Oil recovery intelligent control advantages:
1. Higher efficiency
2. Durability
3. Comfort: continuous operation, low noise and low vibration



Intelligent 3-stage oil management system

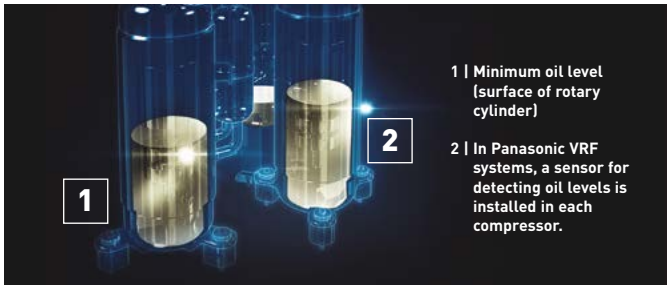
In a VRF system, where lengthy piping and a large number of indoor units need to be controlled collectively, the key to maintaining the system's reliability is to ensure an appropriate amount of oil is secured in the compressors. In order to avoid oil shortage in the compressor, maximum operation is normally forcibly conducted at regular intervals to recover oil from indoor units. This method, typically employed in a standard VRF, causes the system to overheat or overcool and thus waste energy.
In Panasonic VRF systems, a sensor for detecting oil levels is mounted in each compressor. In installations with multiple outdoor units, a shortage of oil in one compressor can be compensated for by recovering oil either from another compressor in the same unit, from a compressor in an adjacent outdoor unit, or from connected indoor units. Panasonic VRF systems provide users with a comfortable environment whilst saving energy.

The Panasonic system efficiently manages oil recovery in three stages; minimising the frequency of forced oil recovery while reducing energy cost and maintaining comfort.

STAGE-1: Panasonic compressors are equipped with sensors which monitor oil levels precisely at all times. If oil levels fall, oil can be transferred from other compressors within the same outdoor unit.
STAGE-2: If oil levels in all compressors within the outdoor unit fall, oil can be replenished from adjacent outdoor units.
STAGE-3: Forced oil recovery is implemented only if oil levels become insufficient in spite of above measures. The Panasonic system's design concept is radically different from conventional oil systems.

Features of oil recovery design

Oil sensors installed in each compressor.
Oil sensors installed in each Panasonic compressor precisely monitor oil levels, eliminating unnecessary oil recovery.



Highly functional oil separator.
Thanks to extended separate piping, oil recovery efficiency reaches 90%, minimising the oil discharged from the compressor.

Twin rotary Inverter compressor

· Wider and flexible control on Inverter compressor
· Better oil lubrication
· Smooth start up

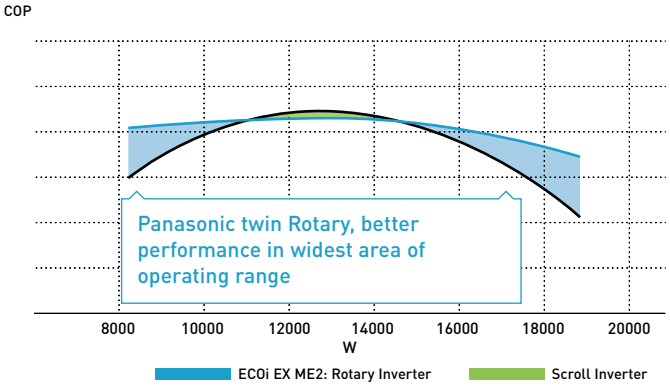
Extraordinary energy-saving performance

Designed for Actual Operation Performance. Panasonic builds air conditioning systems not only with a high EER for rated operation, but also with Seasonal-EER appropriate to the customer's actual environment of use. For instance, with rated operation, outdoor temperature is constant at 35 °C, but in reality the outdoor temperature is continuously changing. Consequently, required air conditioning performance also changes. That's why Panasonic implements the following kind of proprietary control.

1 | Set temperature is rapidly attained; full-load operating time is kept to a minimum.
2 | The frequency of forced oil recovery is minimised. The volume of oil within the compressors is monitored precisely by sensors, so forced oil recovery under full-load operation is conducted only when necessary. Since this suppresses noise due to oil recovery, comfort is maintained.
3 | Panasonic pursues a high EER, of course, as well as high EER in part load, for energy saving performance under a broad range of loads.

Panasonic's design concept contributes to substantial energy cost reductions.

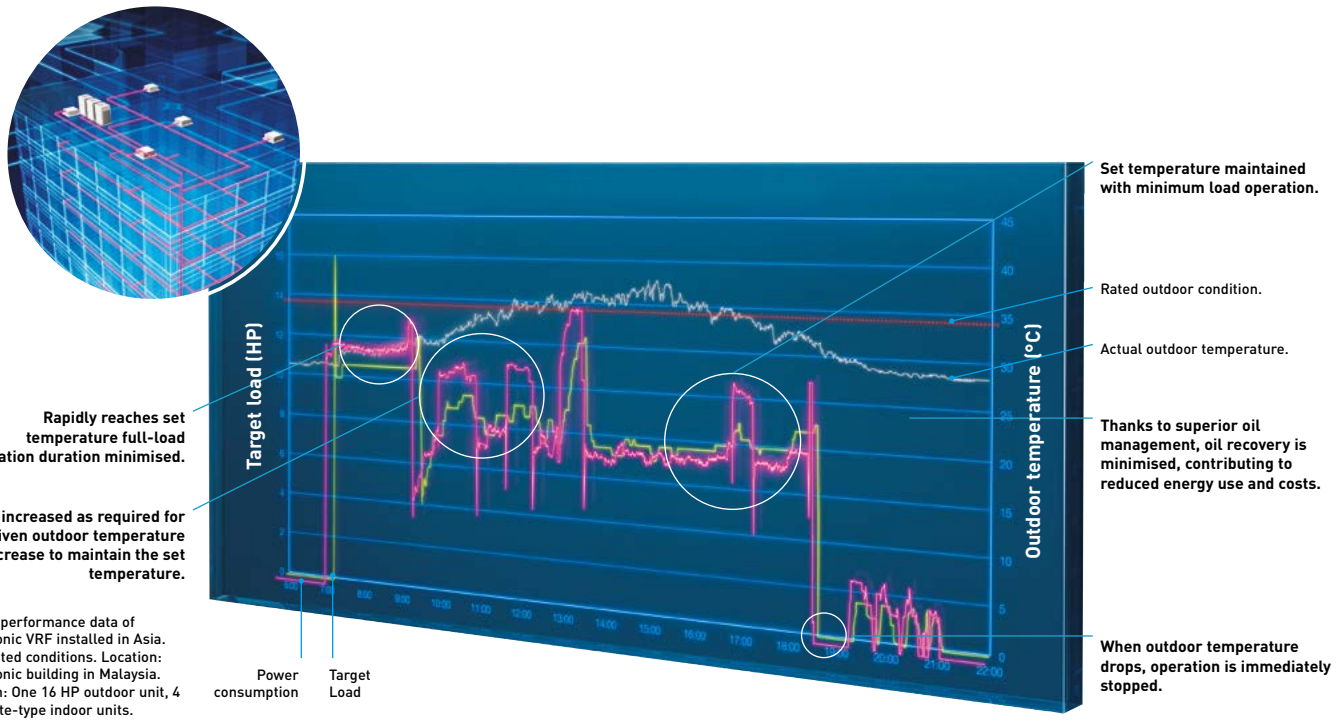
Compressor efficiency electric system VRF.



Number of Inverter compressors.

	2-Pipe ECOi EX ME2							3-Pipe ECOi EX MF3				
Size	**Small**		**Medium**			**Large**		**Medium**				
HP	8	10	12	14	16	18	20	8	10	12	14	16
Number	1 pc.		1 pc.	2 pcs.		2 pcs.		1 pc.			2 pcs.	

Actual operation data graph of Panasonic VRF



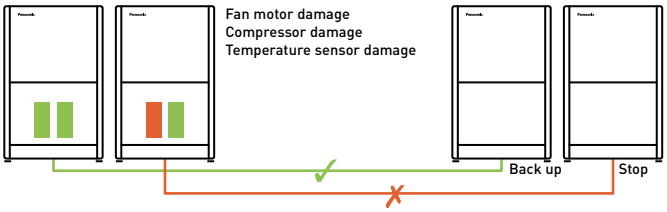
Actual performance data of Panasonic VRF installed in Asia. Simulated conditions. Location: Panasonic building in Malaysia. System: One 16 HP outdoor unit, 4 Cassette-type indoor units.

Superior quality, reliability and durability

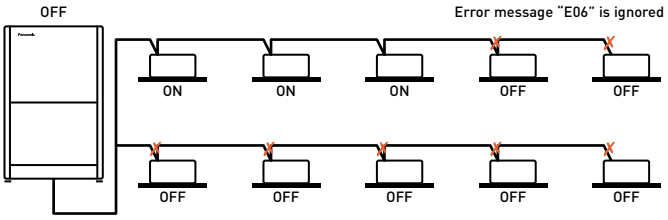
Two independently controlled Inverter compressors achieve high efficiency. Redesigned components in the body provide performance improvement especially in the rated cooling condition and EER performance.

High safety operation in case of breakdown!

Automatic Back-Up operation. Ensures heating and cooling.
It is possible for the system to keep working, even if the compressors, fan motor and the temperature sensor are damaged (even when a compressor fails in single unit with 2 compressors inside).



The system will still operate with only 25% of the connected indoor units.
System will not stop when only 25% of indoor units have power supply and breakdown on other indoor units.

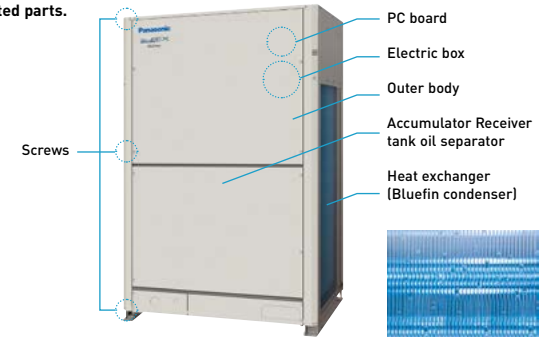


Hi-durability outdoor unit

Treated for high resistance to corrosion (rust and salty air) to ensure long-lasting performance.

Note: Selecting this unit does not completely eliminate the possibility of rust developing. For details concerning unit installation and maintenance, please consult an authorised dealer.

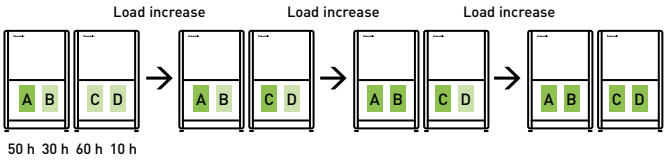
Specially protected parts.



Extended compressor life by uniform compressor operation time

The total run-time of compressors are monitored by a built-in microcomputer, which ensures that operation times of all compressors within the same refrigerant circuit are balanced.
Compressors with histories showing shorter run times are selected first, ensuring equal wear and tear across all units and extending the working life of the system.

System example.
A,C: DC Inverter compressor
B,D: Constant speed compressor



* Depend on accumulated operation time of each compressors.
* Compressor priority has possibility to be changed.
(e.g) Case 1: A>C>B>D, Case 2: C>A>D>B, Case 3: A>C>D>B, Case 4: C>A>B>D
* Also other cases available.

A large number of indoor unit models can be connected.

2-Pipe ECOi EX ME2 Series

Extraordinary partial load, SEER and SCOP.

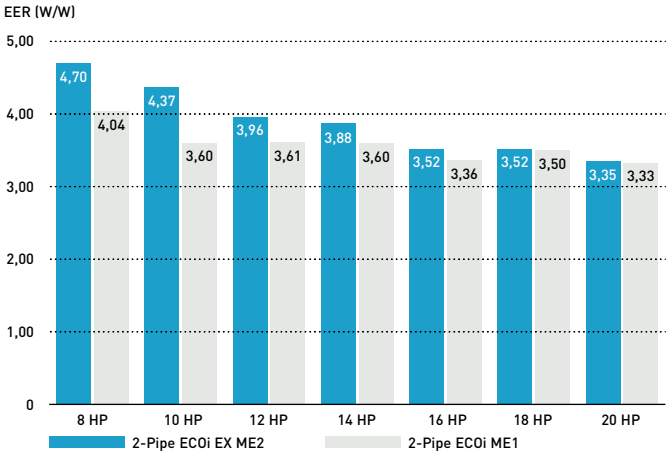
Efficiency in VRF systems

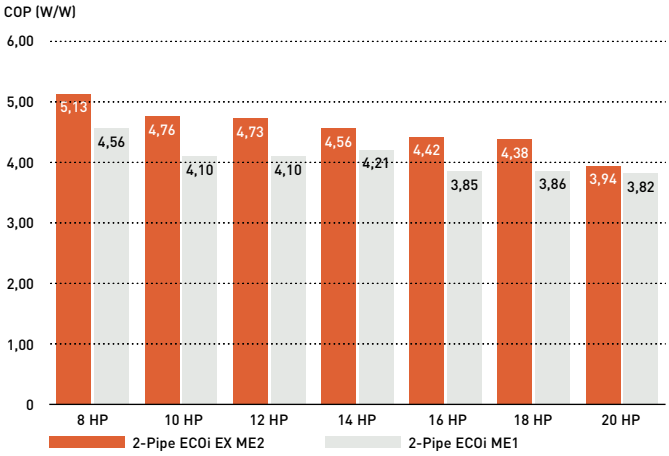
In the past it was only possible to compare the nominal efficiency at outdoor ambient temperature of 35 °C (EER) in Cooling and at 7 °C in heating (COP). With EN-14825 seasonal efficiency will be shown, the result will be SEER and SCOP. ECOi EX is reaching excellent performance without using any additional saving functions.

The highest EER / COP rating in most capacities

Compared to conventional model ECOi (ME1)

The ECOi EX marks a revolutionary step forward in VRF efficiency. A look at the incredible EER / COP value clearly indicates that. What's more, this high EER / COP value is achieved even during part load operation. This shows the extraordinary energy-saving performance the ECOi EX is capable of providing.



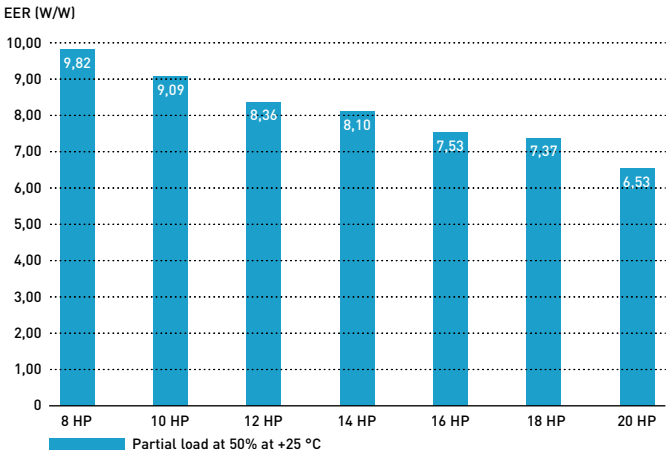


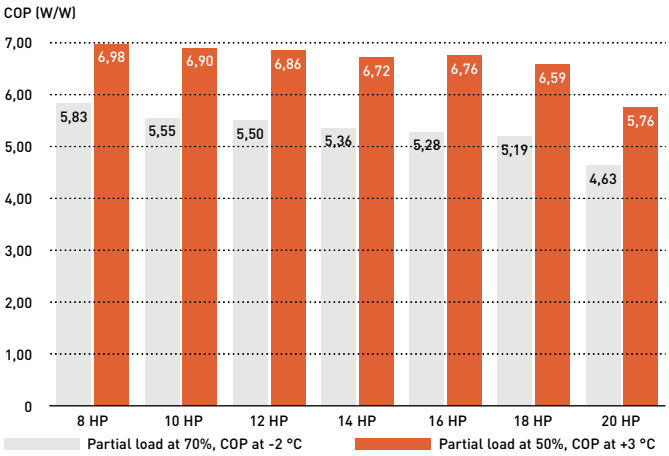
Partial load for seasonal and real system efficiency

VRF units are designed to adapt to the heating and cooling demand, adapting its performance to different outdoor conditions. When compressor runs at lower than 100% capacity, the system is working at partial load. A wider compressor operating range results in better system performance both at full load and partial load conditions. Panasonic ECOi EX partial load is excellent, reaching a minimum of 15% of compressor capacity.

Excellent efficiency at any condition and partial load

In both heating and cooling mode, Panasonic ECOi EX is reaching exceptional levels of efficiency.



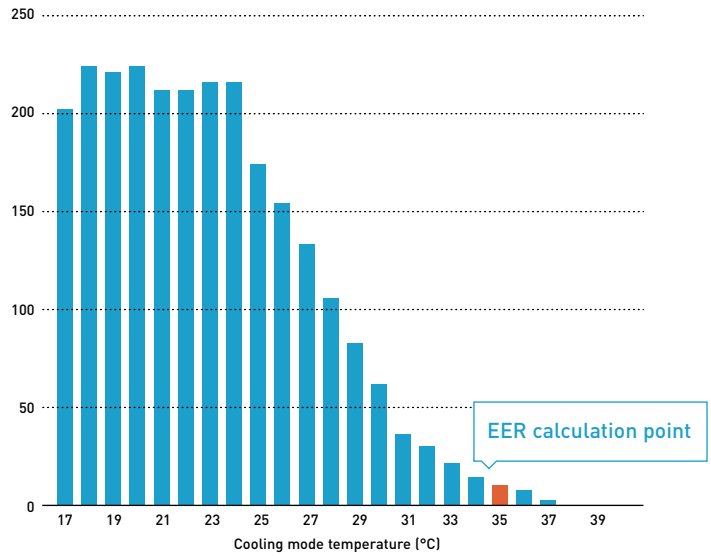


SEER and SCOP following EN-14825

When better partial load, better efficiency is achieved in real operation. The EN-14825 is showing the way to calculate considering full year operation hours at different conditions. Panasonic ECOi EX is designed to save energy in any partial load condition. During most operation hours a system is under partial load conditions, 80% of total operation hours is less than 70% of full load.
In below graphs is the example for average ambient conditions, this uses Strasbourg ambient conditions for calculation.

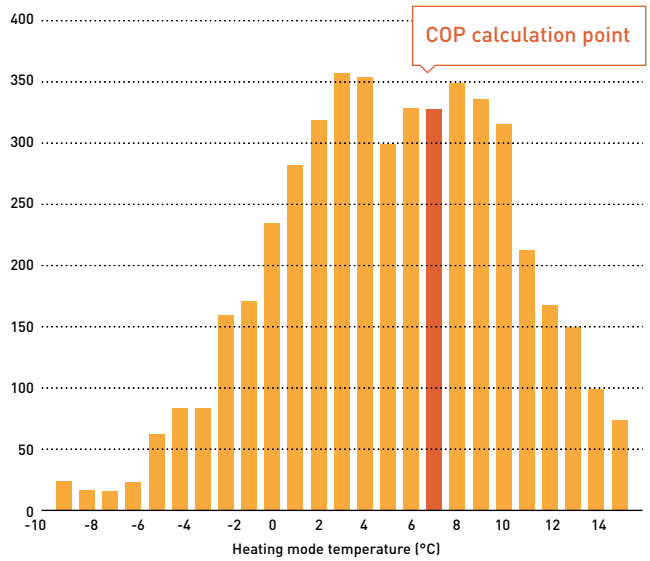
Outside temperature distribution.

Time distribution (hours / year)



Outside temperature distribution.

Time distribution (hours / year)



In the characteristics EER and COP only a single temperature for the assessment of the efficiency is taken as a basis in each case. Data calculated under EN-14825 conditions, not additional saving function considered for this calculation.
Compressor frequency according to ambient temperature and building design.

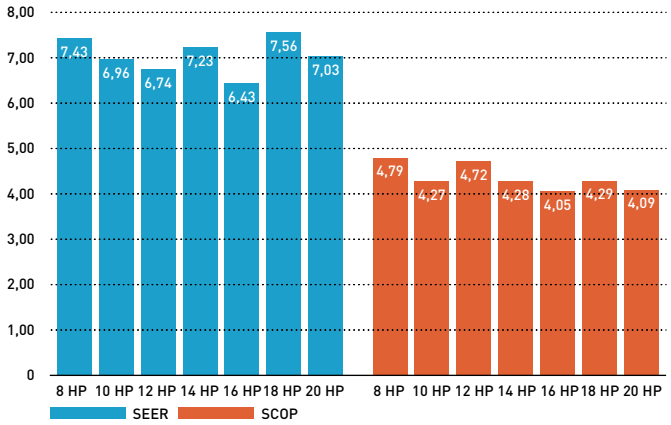
SEER and SCOP values

ECOi EX models have superior seasonal space cooling / heating efficiency following not only EN 14825 but also COMMISSION REGULATION (EU) 2016/2281. This regulation requires to use “η” values in the technical documents.

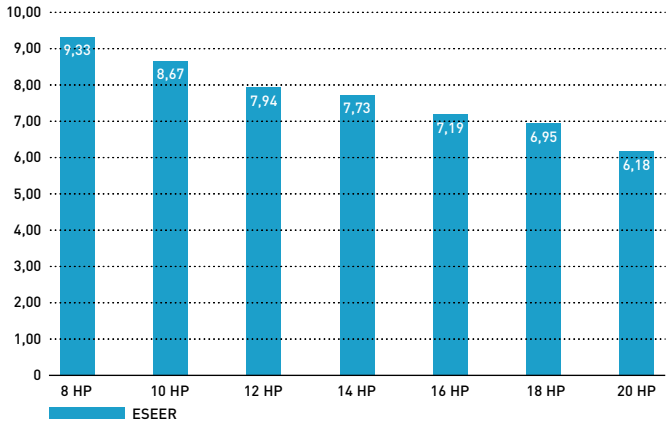
Please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

During commissioning, Panasonic can further increase efficiency by "20%" increasing evaporation refrigerant temperature range, for a higher efficiency and lower energy consumption.

SEER / SCOP



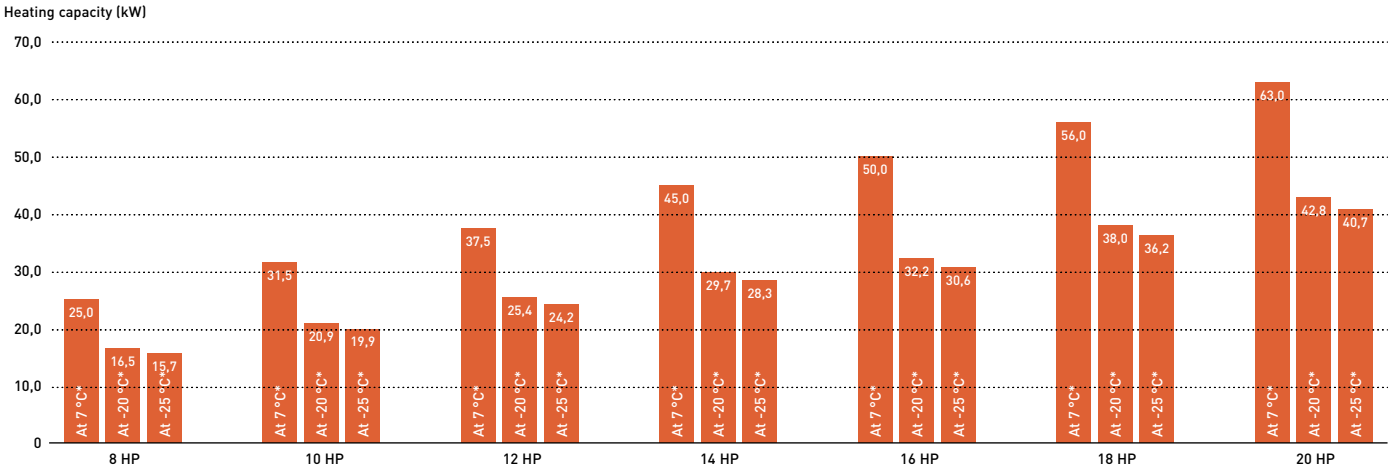
ESEER (W/W)



2-Pipe ECOi EX ME2 Series high performance at extreme conditions

The ECOi EX can still operate at 100% capacity when the outside temperature is as high as 43 °C. This high power capability enables reliable operation even under extremely high temperature conditions.

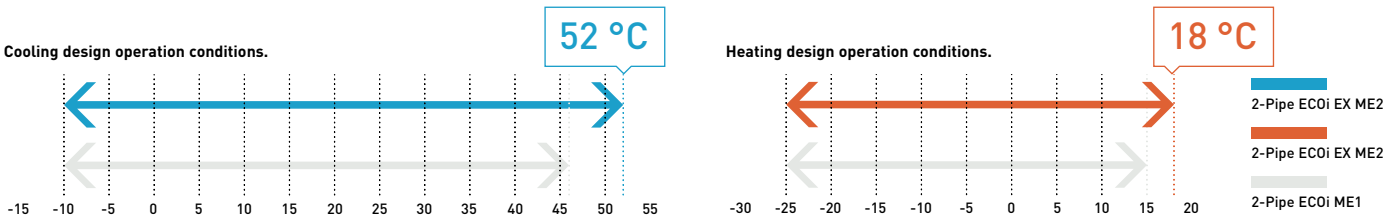
Extremely high capacity at -20 °C and unique heating capacity at -25 °C



* Outdoor air temperature (°C WB).

Trusted reliability even under high and low temperature conditions

Designed to be durable enough to withstand extreme heat, 2-Pipe ECOi EX ME2 Series ensures reliable cooling operation over an extended operating range up to 52 °C, and heating operation also at -25 °C.



Cooling: Outside air temperature ˚C (DB). Heating: Outside air temperature ˚C (WB).

2-Pipe ECOi EX ME2 Series superior flexibility

Maximum allowable connected indoor / outdoor capacity ratio up to 200%*

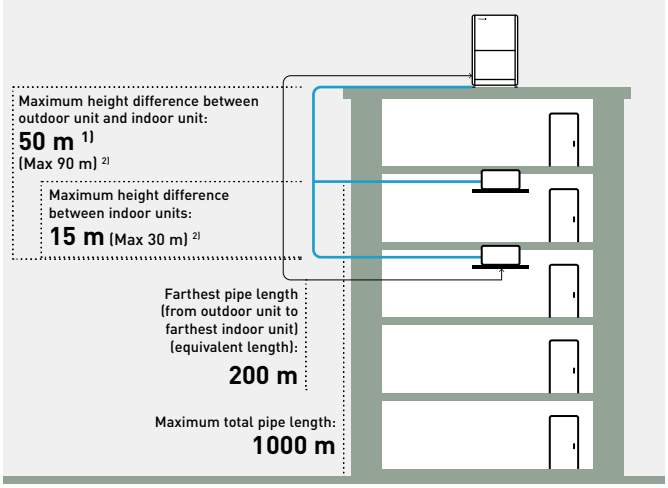
ECOi EX attain maximum indoor unit connection capacity of up to 130% of the unit's connection range. This limit can be surpassed and reach up to 200% if some conditions are satisfied. With this feature, ECOi EX provides an ideal air conditioning solution for locations where full cooling / heating are not always required in all spaces at same time.

System (HP)	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80
Connectable indoor units: 130%	13	16	19	23	26	29	33	36	40	43	46	50	53	56	59	64																					
Connectable indoor units: 200%	20	25	30	35	40	45	50	55	60	64																											

Note: If more than 100% indoor units are operated with a high load, the units may not perform at the rated capacity. For the details, please consult with an authorised Panasonic dealer. * If the following conditions are satisfied, the effective range is above 130% up to 200%. Obey the limited number of connectable indoor units. The lower limit of operating range for heating outdoor temperature is limited to -10 °C WB (standard -25 °C WB). Simultaneous operation is limited to less than 130% of connectable indoor units. 1,5 kW capacity of Indoor Units are included.

Increased piping lengths and design flexibility

Adaptable to various building types and sizes. Actual piping length: 200 m. Maximum piping length: 1000 m.

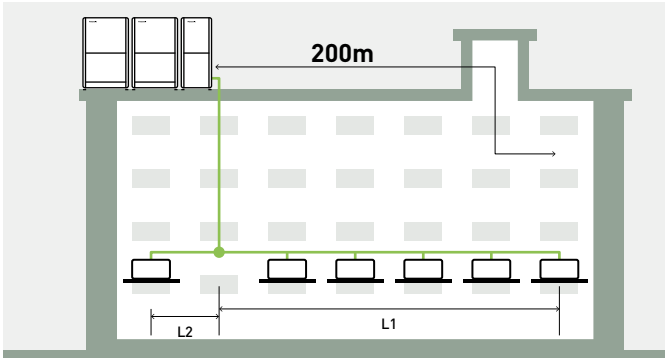


1) 40 m if the outdoor unit is below the indoor unit.
2) For height differences between outdoor unit and indoor unit > 50 m, as well as for height differences between indoor units > 15 m, contact an authorized Panasonic dealer.

Up to 50 m length difference between the longest and the shortest piping from the first branch

Flexible piping layout makes it easier to design systems for locations such as train stations, airports, schools and hospitals.

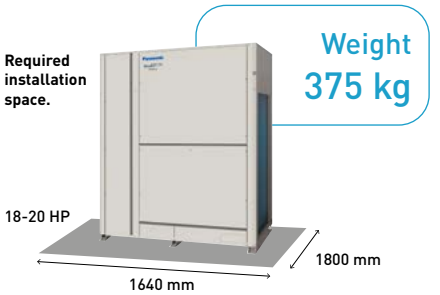
- Up to 64 units can be connected to one system
- Difference between maximum and minimum pipe runs after first branch can be a maximum of 50 m
- Larger pipe runs can be up to 200 m

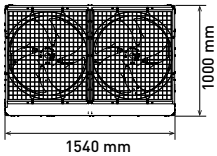


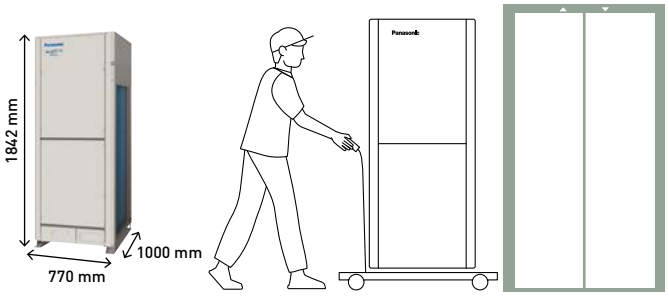
L1 = Longest pipe run. L2 = Shortest pipe run. L1 - L2 = Maximum 50 m.

Compact design

The ME2 Series has reduced the installation space required with up to 20 HP available in a single chassis. 8 - 10 HP are able to fit inside a lift for easy handling on site.

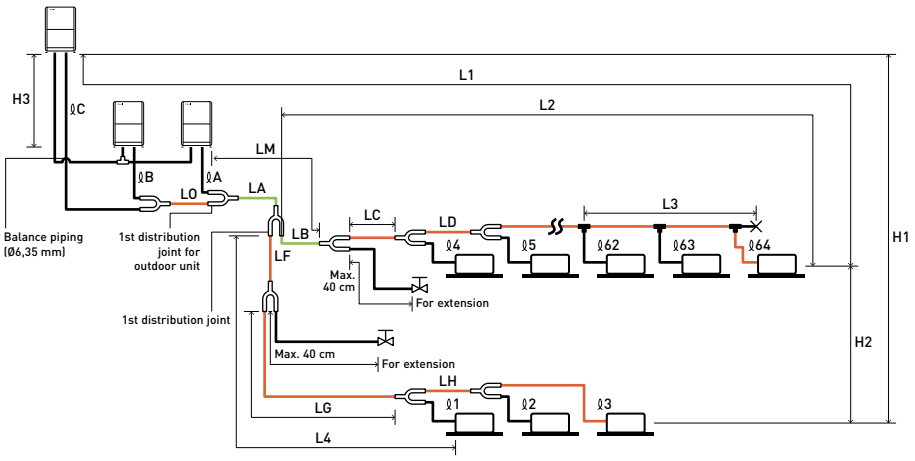






2-Pipe ECOi EX ME2 Series piping design

Select installation locations so that the lengths and sizes of refrigerant piping are within the allowable ranges shown in the figure below.



The outdoor connection main piping (LO portion) is determined by the total capacity of the outdoor units that are connected to the tube ends.
Note: Be sure to use special R410A distribution joints (CZ: optional parts) for outdoor unit connections and piping branches.

R410A distribution joint.
CZ-P680PH2BM (for outdoor unit)
CZ-P1350PH2BM (for outdoor unit)
CZ-P224BK2BM (for indoor unit)
CZ-P680BK2BM (for indoor unit)
CZ-P1350BK2BM (for indoor unit)

Main piping length (maximum piping size) LM= LA + LB ...

Main distribution tubes LC – LH are selected according to the capacity after the distribution joint.

Sizes of indoor unit connection piping ℓ1 – ℓ64 are determined by the connection piping sizes on the indoor units.

Distribution joint (CZ: optional parts).

Ball valve (field supply).

T-joint (field supply).

Solidly welded shut (pinch weld).

Ranges that apply to refrigerant piping lengths and to differences in installation heights

Items	Mark	Contents		Length (m)
Allowable piping length	L1	Maximum piping length	Actual length	≤200[1]
			Equivalent length	≤210[1]
	Δ L (L2-L4)	Difference between maximum length and minimum length from the 1st distribution joint		≤50[2]
	LM	Maximum length of main piping (at maximum size) *** Even after 1st distribution joint, LM is allowed if at maximum piping length.**		—[3]
	ℓ1, ℓ2~ ℓ64	Maximum length of each distribution tube		≤50[4]
	L1+ ℓ1+ ℓ2~ ℓ63+ ℓA+ℓB+LF+LG+LH	Total maximum piping length including length of each distribution tube (only liquid piping)		≤1000
	ℓA, ℓB+LO, ℓC+LO	Maximum piping length from outdoor's 1st distribution joint to each outdoor unit		≤10
Allowable elevation difference	H1	When outdoor unit is installed higher than indoor unit		≤50
		When outdoor unit is installed lower than indoor unit		≤40
	H2	Maximum difference between indoor units		≤15
	H3	Maximum difference between outdoor units		≤4
Allowable length of joint piping	L3	T-joint piping (field-supply); Maximum piping length between the first T-joint and solidly welded-shut end point		≤2

L = Length, H = Height

1) If the longest piping length (L1) exceeds 90 m (equivalent length), increase the sizes of the main tubes (LM) by 1 rank for gas tubes and liquid tubes. Use a field supply reducer. Select the tube size from the table of main piping sizes (Table 3) and from the table of refrigerant piping sizes (Table 8). 2) When the piping length exceeds 40 m, increase a longer liquid or gas piping by 1 rank. Refer to the Technical Data for the details. 3) If the longest main piping length (LM) exceeds 50 m, increase the main piping size at the portion before 50 m by 1 rank for the gas tubes. Use a field supply reducer. Determine the length less than the limitation of allowable maximum piping length. For the portion that exceeds 50 m, set based on the main piping size (LA) listed in Table 3. 4) If any of the piping length exceeds 30 m, increase the size of the liquid and gas tubes by 1 rank. 5) If the total distribution piping length exceeds 500 m, maximum allowable elevation difference (H2) between the indoor units is calculated by the following formula. Make sure the indoor unit's actual elevation difference should fall within the figure calculated as follows. Unit of account (meter): 15 x (2 - total piping length (m) ÷ 500).
* The outdoor connection main piping (LO portion) is determined by the total capacity of the outdoor units that are connected to the tube ends. If the size of the existing piping is already larger than the standard piping size, it is not necessary to further increase the size. ** If the existing piping is used, and the amount of on-site refrigerant charge exceeds the value listed below, then change the size of the piping to reduce the amount of refrigerant. Total amount of refrigerant for the system with 1 outdoor unit: 50kg. Total amount of refrigerant for the system with 2 outdoor units: 80kg. Total amount of refrigerant for the system with 3 outdoor units or 4 outdoor units: 105 kg.

Necessary amount of additional refrigerant charge per outdoor unit.

U-8ME2E8	U-10ME2E8	U-12ME2E8	U-14ME2E8	U-16ME2E8
5,5 kg	5,5 kg	7,0 kg	7,0 kg	7,0 kg

System limitations.

Maximum number allowable connected outdoor units	4 [1]
Maximum capacity allowable connected outdoor units	224 kW (80 HP)
Maximum connectable indoor units	64 [2]
Maximum allowable indoor / outdoor capacity ratio	50-130%[3]

Additional refrigerant charge.

Liquid piping size (Inch (mm))	1/4 (6,35)	3/8 (9,52)	1/2 (12,70)	5/8 (15,88)	3/4 (19,05)	7/8 (22,22)	1 (25,40)
Amount of refrigerant charge (g/m)	26	56	128	185	259	366	490

1) Up to 4 units can be connected if the system has been extended.
2) In the case of 38 HP or smaller units, the number is limited by the total capacity of the connected indoor units.
3) If the following conditions are satisfied, the effective range is above 130% and below 200%.
A) Obey the limited number of connectable indoor units. B) The lower limit of operating range for heating outdoor temperature is limited to -10 °C WB (standard -25 °C WB). C) Simultaneous operation is limited to less than 130% of connectable indoor units.

Refrigerant piping (existing piping can be used).

Piping size (mm)													
Material Temper - O						Material Temper - 1/2 H, H							
Ø6,35	t 0,8	Ø12,70	t 0,8	Ø19,05	t 1,2	Ø22,22	t 1,0	Ø28,58	t 1,0	Ø38,10	over t 1,35	Ø44,45	over t1,55
Ø9,52	t 0,8	Ø15,88	t 1,0			Ø25,40	t 1,0	Ø31,75	t 1,1	Ø41,28	over t 1,45	Ø44,45	over t1,55

* When bending the tubes, use a bending radius that is at least 4 times the outer diameter of the tubes. In addition, take sufficient care to avoid crushing or damaging the tubes when bending them.

2-Pipe ECOi EX ME2 Series

A VRF system delivering energy-saving performance, powerful operation, reliability and comfort, surpassing anything previously possible. It represents a true paradigm shift in air conditioning solutions.
VRF with outstanding energy-saving performance and powerful operation SEER 7,56 (18 HP model).

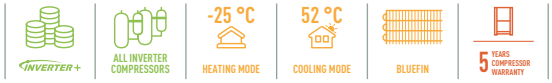
HP			8 HP	10 HP	12 HP	14 HP	16 HP	18 HP	20 HP
Outdoor unit			**U-8ME2E8**	**U-10ME2E8**	**U-12ME2E8**	**U-14ME2E8**	**U-16ME2E8**	**U-18ME2E8**	**U-20ME2E8**
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50	50
Cooling capacity		kW	22,4	28,0	33,5	40,0	45,0	50,0	56,0
EER [1]		W/W	4,70	4,37	3,96	3,88	3,52	3,52	3,35
ESEER		W/W	9,33	8,67	7,94	7,73	7,19	6,95	6,18
Current		A	7,79 - 7,40 - 7,14	10,70 - 10,20 - 9,80	13,70 - 13,00 - 12,50	17,40 - 16,50 - 15,90	21,10 - 20,10 - 19,40	23,20 - 22,00 - 21,20	26,70 - 25,40 - 24,50
Input power		kW	4,77	6,41	8,47	10,30	12,80	14,20	16,70
Heating capacity		kW	25,0	31,5	37,5	45,0	50,0	56,0	63,0
COP [1]		W/W	5,13	4,76	4,73	4,56	4,42	4,38	3,94
Current		A	7,96 - 7,56 - 7,29	11,10 - 10,50 - 10,10	12,90 - 12,30 - 11,80	16,60 - 15,80 - 15,20	18,90 - 17,90 - 17,30	21,10 - 20,10 - 19,40	25,90 - 24,60 - 23,70
Input power		kW	4,87	6,62	7,92	9,86	11,30	12,80	16,00
Starting current		A	1,00	1,00	1,00	2,00	2,00	2,00	2,00
External static pressure (Max)		Pa	80	80	80	80	80	80	80
Air flow		m^3/min	224	224	232	232	232	405	405
Sound pressure	Normal mode	dB(A)	54	56	59	60	61	59	60
	Silent mode	dB(A)	51	53	56	57	58	56	57
Sound power	Normal mode	dB(A)	75	77	80	81	82	80	81
Dimension	H x W x D	mm	1842 x 770 x 1000	1842 x 770 x 1000	1842 x 1180 x 1000	1842 x 1180 x 1000	1842 x 1180 x 1000	1842 x 1540 x 1000	1842 x 1540 x 1000
Net weight		kg	210	210	270	315	315	375	375
Piping diameter [2]	Liquid	Inch (mm)	3/8 (9,52) / 1/2 (12,70)	3/8 (9,52) / 1/2 (12,70)	1/2 (12,70) / 5/8 (15,88)	1/2 (12,70) / 5/8 (15,88)	1/2 (12,70) / 5/8 (15,88)	5/8 (15,88) / 3/4 (19,05)	5/8 (15,88) / 3/4 (19,05)
	Gas	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	7/8 (22,22) / 1 (25,40)	1 (25,40) / 1-1/8 (28,58)	1 (25,40) / 1-1/8 (28,58)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq		kg / T	5,60 / 11,6928	5,60 / 11,6928	8,30 / 17,3304	8,30 / 17,3304	8,30 / 17,3304	9,50 / 19,836	9,50 / 19,836
Maximum allowable indoor / outdoor capacity ratio [3]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

ErP data [4]							
SEER [5]	**7,43**	**6,96**	**6,74**	**7,23**	**6,43**	**7,56**	**7,03**
$\eta_{s,c}$	**294,3%**	**275,4%**	**266,6%**	**286,0%**	**254,3%**	**299,2%**	**278,2%**
SCOP [5]	**4,79**	**4,27**	**4,72**	**4,28**	**4,05**	**4,29**	**4,09**
$\eta_{s,h}$	**188,4%**	**167,6%**	**185,8%**	**168,2%**	**159,0%**	**168,7%**	**160,4%**

1) EER and COP calculation is based in accordance to EN14511. 2) Piping diameter under 90 m for ultimate indoor unit / over 90 m for ultimate indoor unit (if the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes). 3) If the following conditions are satisfied, the effective range is above 130% and below 200%: A. Obey the limited number of connectable indoor units. B. The lower limit of operating range for heating outdoor temperature is limited to -10 °C WB (standard -25 °C WB). C. Simultaneous operation is limited to less than 130% of connectable indoor units. 4) SEER / SCOP and $\eta_{s,c}$ / $\eta_{s,h}$ are in accordance with ErP test data for F2 type variable static pressure hide-away indoor units. 5) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF.

Technical focus

- Twin rotary Inverter compressor
- High performance at extreme conditions
- Outstanding efficiency and comfort
- Extraordinary partial load, SEER and SCOP
- SEER and SCOP following EN-14825
- Oil recovery intelligent control
- Top comfort
- Superior flexibility
- Bluefin full line up EX
- Extremely high capacity at -20 °C and unique heating capacity at -25 °C
- Smooth exhaust flow by bell-mouth



Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

2-Pipe ECOi EX ME2 Series high efficiency model combination from 18 to 64 HP

HP			18 HP	20 HP	22 HP	24 HP	26 HP	28 HP
Outdoor unit			U-8ME2E8	U-10ME2E8	U-10ME2E8	U-12ME2E8	U-10ME2E8	U-12ME2E8
			U-10ME2E8	U-10ME2E8	U-12ME2E8	U-12ME2E8	U-16ME2E8	U-16ME2E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50
Cooling capacity		kW	50,0	56,0	61,5	68,0	73,0	78,5
EER [1]		W/W	4,55	4,38	4,13	3,93	3,80	3,69
Current		A	18,20 - 17,30 - 16,60	21,40 - 20,30 - 19,60	24,30 - 23,10 - 22,30	28,00 - 26,60 - 25,60	31,70 - 30,10 - 29,00	34,80 - 33,10 - 31,90
Input power		kW	11,00	12,80	14,90	17,30	19,20	21,30
Heating capacity		kW	56,0	63,0	69,0	76,5	81,5	87,5
COP [1]		W/W	4,96	4,77	4,76	4,69	4,55	4,56
Current		A	18,70 - 17,70 - 17,10	22,00 - 20,90 - 20,20	23,90 - 22,70 - 21,90	26,60 - 25,30 - 24,40	29,90 - 28,40 - 27,40	31,70 - 30,10 - 29,00
Input power		kW	11,30	13,20	14,50	16,30	17,90	19,20
Starting current		A	2,00	2,00	2,00	2,00	3,00	3,00
External static pressure (Max)		Pa	80	80	80	80	80	80
Air flow		m^3/min	448	448	456	464	456	464
Sound pressure	Normal	dB(A)	58,5	59,0	61,0	62,0	62,5	63,5
	Silent mode	dB(A)	55,5	56,0	58,0	59,0	59,5	60,5
Sound power	Normal mode	dB(A)	79,5	80,0	82,0	83,0	83,5	84,5
Dimension / Net weight	H x W x D	mm / kg	1842 x 1600 x 1000 / 420	1842 x 1600 x 1000 / 420	1842 x 2010 x 1000 / 480	1842 x 2420 x 1000 / 540	1842 x 2010 x 1000 / 535	1842 x 2420 x 1000 / 585
Piping diameter [2]	Liquid	Inch (mm)	5/8 (15,88) / 3/4 (19,05)	5/8 (15,88) / 3/4 (19,05)	5/8 (15,88) / 3/4 (19,05)	5/8 (15,88) / 3/4 (19,05)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Gas	Inch (mm)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	11,20 / 23,3856	11,20 / 23,3856	13,90 / 29,0232	16,60 / 34,6608	13,90 / 29,0232	16,60 / 34,6608
Maximum allowable indoor / outdoor capacity ratio [3]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

HP			30 HP	32 HP	34 HP	36 HP	38 HP	40 HP
Outdoor unit			U-14ME2E8	U-16ME2E8	U-10ME2E8	U-12ME2E8	U-10ME2E8	U-12ME2E8
			U-16ME2E8	U-16ME2E8	U-12ME2E8	U-12ME2E8	U-12ME2E8	U-12ME2E8
					U-12ME2E8	U-12ME2E8	U-16ME2E8	U-16ME2E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50
Cooling capacity		kW	85,0	90,0	96,0	101,0	107,0	113,0
EER [1]		W/W	3,68	3,52	4,05	3,95	3,84	3,75
Current		A	38,60 - 36,60 - 35,30	42,30 - 40,20 - 38,70	38,70 - 36,80 - 35,50	41,40 - 39,30 - 37,90	46,10 - 43,80 - 42,20	49,20 - 46,70 - 45,00
Input power		kW	23,10	25,60	23,70	25,60	27,90	30,10
Heating capacity		kW	95,0	100,0	108,0	113,0	119,0	127,0
COP [1]		W/W	4,48	4,42	4,72	4,73	4,61	4,57
Current		A	35,40 - 33,60 - 32,40	37,70 - 35,80 - 34,60	37,80 - 35,90 - 34,60	39,00 - 37,10 - 35,80	42,60 - 40,50 - 39,00	45,90 - 43,60 - 42,00
Input power		kW	21,20	22,60	22,90	23,90	25,80	27,80
Starting current		A	4,00	4,00	3,00	3,00	4,00	4,00
External static pressure (Max)		Pa	80	80	80	80	80	80
Air flow		m^3/min	464	464	688	696	688	696
Sound pressure	Normal	dB(A)	63,5	64,0	63,0	64,0	64,0	64,5
	Silent mode	dB(A)	60,5	61,0	60,0	61,0	61,0	61,5
Sound power	Normal mode	dB(A)	84,5	85,0	84,0	85,0	85,0	85,5
Dimension / Net weight	H x W x D	mm / kg	1842 x 2420 x 1000 / 630	1842 x 2420 x 1000 / 630	1842 x 3250 x 1000 / 750	1842 x 3660 x 1000 / 810	1842 x 3250 x 1000 / 795	1842 x 3660 x 1000 / 855
Piping diameter [2]	Liquid	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Gas	Inch (mm)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	16,60 / 34,6608	16,60 / 34,6608	22,20 / 46,3536	24,90 / 51,9912	22,20 / 46,3536	24,90 / 46,3536
Maximum allowable indoor / outdoor capacity ratio [3]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

Data is for reference. 1) EER and COP calculation is based in accordance to EN14511. 2) Piping diameter under 90 m for ultimate indoor unit / over 90 m for ultimate indoor unit (if the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes). 3) If the following conditions are satisfied, the effective range is above 130% and below 200%: A. Obey the limited number of connectable indoor units. B. The lower limit of operating range for heating outdoor temperature is limited to -10 °C WB (standard -25 °C WB). C. Simultaneous operation is limited to less than 130% of connectable indoor units.

HP			42 HP	44 HP	46 HP	48 HP	50 HP	52 HP
Outdoor unit			U-10ME2E8	U-12ME2E8	U-14ME2E8	U-16ME2E8	U-10ME2E8	U-12ME2E8
			U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8	U-12ME2E8	U-12ME2E8
			U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8	U-12ME2E8	U-12ME2E8
							U-16ME2E8	U-16ME2E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50
Cooling capacity		kW	118,0	124,0	130,0	135,0	140,0	145,0
EER [1]		W/W	3,69	3,62	3,62	3,52	3,87	3,82
Current		A	52,80 - 50,20 - 48,40	56,00 - 53,20 - 51,30	59,90 - 56,90 - 54,90	63,40 - 60,20 - 58,10	59,10 - 56,20 - 54,20	62,10 - 59,00 - 56,80
Input power		kW	32,00	34,30	35,90	38,40	36,20	38,00
Heating capacity		kW	132,0	138,0	145,0	150,0	155,0	160,0
COP [1]		W/W	4,49	4,50	4,46	4,42	4,65	4,66
Current		A	49,10 - 46,60 - 44,90	50,70 - 48,20 - 46,40	54,30 - 51,50 - 49,70	56,60 - 53,80 - 51,80	55,00 - 52,20 - 50,40	56,60 - 53,80 - 51,90
Input power		kW	29,40	30,70	32,50	33,90	33,30	34,30
Starting current		A	5,00	5,00	6,00	6,00	5,00	5,00
External static pressure (Max)		Pa	80	80	80	80	80	80
Air flow		m^3/min	688	696	696	696	920	928
Sound pressure	Normal	dB(A)	65,0	65,5	65,5	66,0	65,5	66,0
	Silent mode	dB(A)	62,0	62,5	62,5	63,0	62,5	63,0
Sound power	Normal mode	dB(A)	86,0	86,5	86,5	87,0	86,5	87,0
Dimension / Net weight	H x W x D	mm / kg	1842 x 3250 x 1000 / 840	1842 x 3660 x 1000 / 900	1842 x 3660 x 1000 / 945	1842 x 3660 x 1000 / 945	1842 x 4490 x 1000 / 1065	1842 x 4900 x 1000 / 1125
Piping diameter [2]	Liquid	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Gas	Inch (mm)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	22,20 / 51,9912	24,90 / 51,9912	24,90 / 51,9912	24,90 / 51,9912	30,50 / 63,6840	33,20 / 69,3216
Maximum allowable indoor / outdoor capacity ratio [3]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

HP			54 HP	56 HP	58 HP	60 HP	62 HP	64 HP
Outdoor unit			U-10ME2E8	U-12ME2E8	U-10ME2E8	U-12ME2E8	U-14ME2E8	U-16ME2E8
			U-12ME2E8	U-12ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8
			U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8
			U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50
Cooling capacity		kW	151,0	156,0	162,0	168,0	174,0	180,0
EER [1]		W/W	3,75	3,71	3,65	3,60	3,60	3,52
Current		A	66,60 - 63,20 - 60,90	68,80 - 65,30 - 63,00	73,30 - 69,70 - 67,10	77,10 - 73,30 - 70,60	79,80 - 75,80 - 73,00	84,60 - 80,30 - 77,40
Input power		kW	40,30	42,10	44,40	46,70	48,30	51,20
Heating capacity		kW	169,0	175,0	182,0	189,0	195,0	201,0
COP [1]		W/W	4,56	4,56	4,47	4,47	4,45	4,42
Current		A	61,90 - 58,80 - 56,70	63,40 - 60,20 - 58,10	68,00 - 64,60 - 62,20	70,60 - 67,10 - 64,70	73,10 - 69,50 - 67,00	76,00 - 72,20 - 69,60
Input power		kW	37,10	38,40	40,70	42,30	43,80	45,50
Starting current		A	6,00	6,00	7,00	7,00	8,00	8,00
External static pressure (Max)		Pa	80	80	80	80	80	80
Air flow		m^3/min	920	928	920	928	928	928
Sound pressure	Normal	dB(A)	66,0	66,5	66,5	67,0	67,0	67,0
	Silent mode	dB(A)	63,0	63,5	63,5	64,0	64,0	64,0
Sound power	Normal mode	dB(A)	87,0	87,5	87,5	88,0	88,0	88,0
Dimension / Net weight	H x W x D	mm / kg	1842 x 4490 x 1000 / 1110	1842 x 4900 x 1000 / 1170	1842 x 4490 x 1000 / 1155	1842 x 4900 x 1000 / 1215	1842 x 4900 x 1000 / 1260	1842 x 4900 x 1000 / 1260
Piping diameter [2]	Liquid	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Gas	Inch (mm)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-5/8 (41,28) / 1-3/4 (44,45)	1-5/8 (41,28) / 1-3/4 (44,45)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	30,50 / 63,6840	33,20 / 69,3216	30,50 / 63,6840	33,20 / 69,3216	33,20 / 69,3216	33,20 / 69,3216
Maximum allowable indoor / outdoor capacity ratio [3]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

Data is for reference. 1) EER and COP calculation is based in accordance to EN14511. 2) Piping diameter under 90 m for ultimate indoor unit / over 90 m for ultimate indoor unit (if the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes). 3) If the following conditions are satisfied, the effective range is above 130% and below 200%: A. Obey the limited number of connectable indoor units. B. The lower limit of operating range for heating outdoor temperature is limited to -10 °C WB (standard -25 °C WB). C. Simultaneous operation is limited to less than 130% of connectable indoor units.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

2-Pipe ECOi EX ME2 Series space saving model combination from 22 to 80 HP

HP			22 HP	24 HP	26 HP	28 HP	30 HP	32 HP	34 HP
Outdoor unit			U-10ME2E8 U-12ME2E8	U-12ME2E8 U-12ME2E8	U-10ME2E8 U-16ME2E8	U-12ME2E8 U-16ME2E8	U-14ME2E8 U-16ME2E8	U-16ME2E8 U-16ME2E8	U-14ME2E8 U-20ME2E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50	50
Cooling capacity		kW	61,5	68,0	73,0	78,5	85,0	90,0	96,0
EER [1]		W/W	4,13	3,93	3,80	3,69	3,68	3,52	3,56
SEER [2]			**6,90**	**6,86**	**6,62**	**6,60**	**6,88**	**6,55**	**7,21**
Current		A	24,30-23,10-22,30	28,00-26,60-25,60	31,70-30,10-29,00	34,80-33,10-31,90	38,60-36,60-35,30	42,30-40,20-38,70	44,10-41,90-40,40
Input power		kW	14,90	17,30	19,20	21,30	23,10	25,60	27,00
Heating capacity		kW	69,0	76,5	81,5	87,5	95,0	100,0	108,0
COP [1]		W/W	4,76	4,69	4,55	4,56	4,48	4,42	4,17
SCOP [2]			**4,53**	**4,78**	**4,16**	**4,29**	**4,13**	**4,09**	**4,14**
Current		A	23,90-22,70-21,90	26,60-25,30-24,40	29,90-28,40-27,40	31,70-30,10-29,00	35,40-33,60-32,40	37,70-35,80-34,60	42,80-40,60-39,20
Input power		kW	14,50	16,30	17,90	19,20	21,20	22,60	25,90
Starting current		A	2,00	2,00	3,00	3,00	4,00	4,00	4,00
External static pressure (Max)		Pa	80	80	80	80	80	80	80
Air flow		m^3/min	456	464	456	464	464	464	637
Sound pressure	Normal / Silent mode	dB(A)	61,0 / 58,0	62,0 / 59,0	62,5 / 59,5	63,5 / 60,5	63,5 / 60,5	64,0 / 61,0	63,0 / 60,0
Sound power	Normal mode	dB(A)	82,0	83,0	83,5	84,5	84,5	85,0	84,0
Dimension / Net weight	H x W x D	mm / kg	1842 x 2010 x 1000 / 480	1842 x 2420 x 1000 / 540	1842 x 2010 x 1000 / 525	1842 x 2420 x 1000 / 585	1842 x 2420 x 1000 / 630	1842 x 2420 x 1000 / 630	1842 x 2780 x 1000 / 690
Piping diameter [3]	Liquid	Inch (mm)	5/8 (15,88) / 3/4 (19,05)	5/8 (15,88) / 3/4 (19,05)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Gas	Inch (mm)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	13,90 / 23,3856	16,60 / 34,6608	13,90 / 29,0232	16,60 / 34,6608	16,60 / 34,6608	16,60 / 34,6608	17,80 / 37,1664
Maximum allowable indoor / outdoor capacity ratio [4]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

HP			36 HP	38 HP	40 HP	42 HP	44 HP	46 HP	48 HP
Outdoor unit			U-16ME2E8 U-20ME2E8	U-18ME2E8 U-20ME2E8	U-20ME2E8 U-20ME2E8	U-10ME2E8 U-16ME2E8 U-16ME2E8	U-12ME2E8 U-16ME2E8 U-16ME2E8	U-14ME2E8 U-16ME2E8 U-16ME2E8	U-16ME2E8 U-16ME2E8 U-16ME2E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50	50
Cooling capacity		kW	101,0	107,0	113,0	118,0	124,0	130,0	135,0
EER [1]		W/W	3,42	3,42	3,34	3,69	3,62	3,62	3,52
SEER [2]			**6,86**	**7,32**	**7,16**	**6,57**	**6,60**	**6,70**	**6,55**
Current		A	47,70-45,30-43,70	50,60-48,10-46,30	54,10-51,40-49,50	52,80-50,20-48,40	56,00-53,20-51,30	59,90-56,90-54,90	63,40-60,20-58,10
Input power		kW	25,9	31,3	33,8	32,0	34,3	35,9	38,4
Heating capacity		kW	113,0	119,0	127,0	132,0	138,0	145,0	150,0
COP [1]		W/W	4,14	4,13	3,92	4,49	4,50	4,46	4,42
SCOP [2]			**4,06**	**4,14**	**4,13**	**4,11**	**4,21**	**4,12**	**4,09**
Current		A	44,60-42,40-40,80	47,10-44,70-43,10	52,40-49,80-48,00	49,10-46,60-44,90	50,70-48,20-46,40	54,30-51,50-49,7	56,60-53,80-51,8
Input power		kW	27,30	28,80	32,40	29,40	30,70	32,50	33,90
Starting current		A	4,00	4,00	4,00	5,00	5,00	6,00	6,00
External static pressure (Max)		Pa	80	80	80	80	80	80	80
Air flow		m^3/min	637	810	810	688	696	696	696
Sound pressure	Normal / Silent mode	dB(A)	63,5 / 60,5	62,5 / 59,5	63,0 / 60,0	65,0 / 62,0	65,5 / 62,5	65,5 / 62,5	66,0 / 63,0
Sound power	Normal mode	dB(A)	84,5	83,5	84,0	86,0	86,5	86,5	87,0
Dimension / Net weight	H x W x D	mm / kg	1842 x 2780 x 1000 / 690	1842 x 3140 x 1000 / 750	1842 x 3140 x 1000 / 750	1842 x 3250 x 1000 / 840	1842 x 3660 x 1000 / 900	1842 x 3660 x 1000 / 945	1842 x 3660 x 1000 / 945
Piping diameter [3]	Liquid	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Gas	Inch (mm)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	17,80 / 37,1664	19,00 / 39,672	19,00 / 39,672	22,20 / 46,3536	24,90 / 51,9912	24,90 / 51,9912	24,90 / 51,9912
Maximum allowable indoor / outdoor capacity ratio [4]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

1) EER and COP calculation is based in accordance to EN14511. 2) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF. 3) Piping diameter under 90 m for ultimate indoor unit / over 90 m for ultimate indoor unit (if the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes). 4) If the following conditions are satisfied, the effective range is above 130% and below 200%: A. Obey the limited number of connectable indoor units. B. The lower limit of operating range for heating outdoor temperature is limited to -10 °C WB (standard -25 °C WB). C. Simultaneous operation is limited to less than 130% of connectable indoor units.

HP			50 HP	52 HP	54 HP	56 HP	58 HP	60 HP	62 HP	64 HP
Outdoor unit			U-14ME2E8	U-16ME2E8	U-14ME2E8	U-16ME2E8	U-18ME2E8	U-20ME2E8	U-14ME2E8	U-16ME2E8
			U-16ME2E8	U-16ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-16ME2E8	U-16ME2E8
			U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-16ME2E8	U-16ME2E8
									U-16ME2E8	U-16ME2E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50	50	50
Cooling capacity		kW	140,0	145,0	151,0	156,0	162,0	168,0	174,0	180,0
EER [1]		W/W	3,55	3,46	3,49	3,41	3,40	3,35	3,60	3,52
SEER [2]			**6,96**	**6,72**	**7,16**	**6,92**	**7,30**	**7,16**	**6,68**	**6,55**
Current		A	64,40-61,10-58,90	68,50-65,00-62,70	70,00-66,50-64,10	74,00-70,30-67,80	76,90-73,10-70,40	80,10-76,10-73,40	79,80-75,80-73,00	84,60-80,30-77,40
Input power		kW	39,40	41,90	43,30	45,80	47,60	50,10	48,30	51,20
Heating capacity		kW	155,0	160,0	169,0	175,0	182,0	189,0	195,0	201,0
COP [1]		W/W	4,29	4,27	4,11	4,08	4,06	3,94	4,45	4,42
SCOP [2]			**4,08**	**4,05**	**4,13**	**4,07**	**4,13**	**4,13**	**4,11**	**4,09**
Current		A	59,60-56,60-54,60	61,90-58,80-56,70	67,10-63,80-61,50	70,10-66,60-64,20	73,20-69,50-67,00	77,60-73,70-71,00	73,10-69,50-67,00	76,00-72,20-69,6
Input power		kW	36,10	37,50	41,10	42,90	44,80	48,00	43,80	45,50
Starting current		A	6,00	6,00	6,00	6,00	6,00	6,00	8,00	8,00
External static pressure (Max)		Pa	80	80	80	80	80	80	80	80
Air flow		m^3/min	869	869	1042	1042	1215	1215	928	928
Sound pressure	Normal / Silent mode	dB(A)	65,5 / 62,5	65,5 / 62,5	65,0 / 62,0	65,5 / 62,5	64,5 / 61,5	65,0 / 62,0	67,0 / 64,0	67,0 / 64,0
Sound power	Normal mode	dB(A)	86,5	86,5	86,0	86,5	85,5	86,0	88,0	88,0
Dimension / Net weight	H x W x D	mm / kg	1842 x 4020 x 1000 / 1005	1842 x 4020 x 1000 / 1005	1842 x 4380 x 1000 / 1065	1842 x 4380 x 1000 / 1065	1842 x 4740 x 1000 / 1125	1842 x 4740 x 1000 / 1125	1842 x 4900 x 1000 / 1260	1842 x 4900 x 1000 / 1260
Piping diameter [3]	Liquid	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Gas	Inch (mm)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-5/8 (41,28) / 1-3/4 (44,45)	1-5/8 (41,28) / 1-3/4 (44,45)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	26,10/54,4968	26,10/54,4968	27,30/57,0024	27,30/57,0024	28,50 / 59,508	28,50 / 59,508	33,20/69,3216	33,20/69,3216
Maximum allowable indoor / outdoor capacity ratio [4]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

HP			66 HP	68 HP	70 HP	72 HP	74 HP	76 HP	78 HP	80 HP
Outdoor unit			U-10ME2E8	U-12ME2E8	U-10ME2E8	U-16ME2E8	U-16ME2E8	U-16ME2E8	U-18ME2E8	U-20ME2E8
			U-16ME2E8	U-16ME2E8	U-20ME2E8	U-16ME2E8	U-18ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8
			U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8
			U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8	U-20ME2E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50	50	50
Cooling capacity		kW	185,0	190,0	196,0	202,0	208,0	213,0	219,0	224,0
EER [1]		W/W	3,52	3,49	3,47	3,42	3,42	3,39	3,38	3,35
SEER [2]			**6,92**	**6,91**	**7,09**	**6,86**	**7,03**	**7,01**	**7,18**	**7,16**
Current		A	85,00-80,80-77,80	88,10-83,70-80,70	91,30-86,80-83,60	95,40-90,60-87,30	98,30-93,40-90,00	101,70-96,60-93,10	103,50-98,30-94,70	106,80-101,50-97,80
Input power		kW	52,60	54,50	56,50	59,00	60,80	62,90	64,70	66,80
Heating capacity		kW	207,0	213,0	219,0	226,0	233,0	239,0	245,0	252,0
COP [1]		W/W	4,16	4,18	4,05	4,14	4,12	4,03	4,03	3,94
SCOP [2]			**4,11**	**4,17**	**4,13**	**4,06**	**4,12**	**4,07**	**4,13**	**4,13**
Current		A	81,20-77,10-74,30	83,30-79,20-76,30	87,40-83,10-80,10	89,20-84,70-81,70	92,30-87,70-84,50	96,90-92,00-88,70	98,30-93,40-90,00	103,40-98,30-94,70
Input power		kW	49,70	51,00	54,10	54,60	56,50	59,30	60,80	64,00
Starting current		A	7,00	7,00	7,00	8,00	8,00	8,00	8,00	8,00
External static pressure (Max)		Pa	80	80	80	80	80	80	80	80
Air flow		m^3/min	1266	1274	1439	1274	1447	1447	1620	1620
Sound pressure	Normal / Silent mode	dB(A)	66,0 / 63,0	66,5 / 63,5	65,5 / 62,5	66,5 / 63,5	66,5 / 63,5	66,5 / 63,5	66,0 / 63,0	66,0 / 63,0
Sound power	Normal mode	dB(A)	87,0	87,5	86,5	87,5	87,5	87,5	87,0	87,0
Dimension / Net weight	H x W x D	mm / kg	1842 x 5210 x 1000 / 1275	1842 x 5620 x 1000 / 1335	1842 x 5570 x 1000 / 1335	1842 x 5620 x 1000 / 1380	1842 x 5980 x 1000 / 1440	1842 x 5980 x 1000 / 1440	1842 x 6340 x 1000 / 1500	1842 x 6340 x 1000 / 1500
Piping diameter [3]	Liquid	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	7/8 (22,22) / 1 (25,04)	7/8 (22,22) / 1 (25,04)	7/8 (22,22) / 1 (25,04)	7/8 (22,22) / 1 (25,04)	7/8 (22,22) / 1 (25,04)	7/8 (22,22) / 1 (25,04)	7/8 (22,22) / 1 (25,04)
	Gas	Inch (mm)	1-5/8 (41,28) / 1-3/4 (44,45)	1-5/8 (41,28) / 1-3/4 (44,45)	1-5/8 (41,28) / 1-3/4 (44,45)	1-3/4 (44,45) / 2 (50,80)	1-3/4 (44,45) / 2 (50,80)	1-3/4 (44,45) / 2 (50,80)	1-3/4 (44,45) / 2 (50,80)	1-3/4 (44,45) / 2 (50,80)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	32,90/68,6952	35,60/74,3328	34,10 / 19,836	35,80/68,6952	36,80/76,8384	36,80/76,8384	38,00 / 79,344	38,00 / 79,344
Maximum allowable indoor / outdoor capacity ratio [4]		%	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)	50 ~ 130 (200)
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18	-25 ~ +18

1) EER and COP calculation is based in accordance to EN14511. 2) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF. 3) Piping diameter under 90 m for ultimate indoor unit / over 90 m for ultimate indoor unit (if the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes). 4) If the following conditions are satisfied, the effective range is above 130% and below 200%: A. Obey the limited number of connectable indoor units. B. The lower limit of operating range for heating outdoor temperature is limited to -10 °C WB (standard -25 °C WB). C. Simultaneous operation is limited to less than 130% of connectable indoor units.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

3-Pipe ECOi EX MF3 Series

Simultaneous heating and cooling VRF system.
The Panasonic 3-Pipe ECOi EX MF3 Series offers the best solution for the most discerning customers and demanding installations.

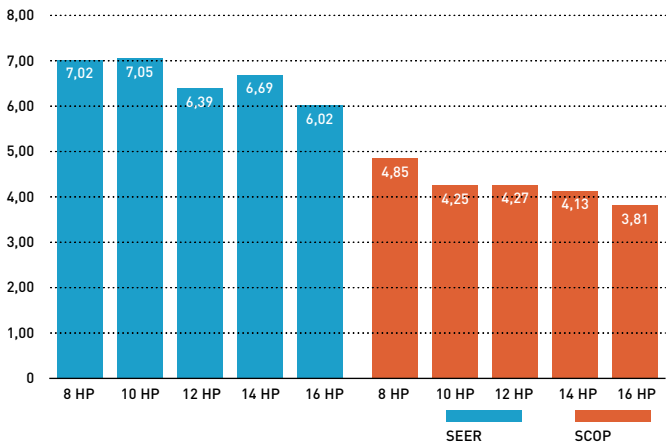
Simultaneous heating and cooling VRF System

The Panasonic 3-Pipe ECOi EX MF3 Series offers the ideal solution to meet customer's demands.

Upgraded energy efficiency utilized ECOi EX technology.
- SEER / SCOP improved in full capacities from 8 to 16 HP
- SEER / SCOP follows LOT21 (January 2018)
- Eurovent certified EER / COP

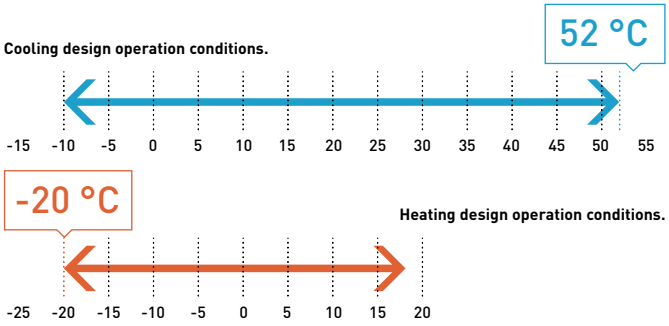
Design flexibility.
- High reliability even under extreme temperature conditions
- Connection of up to 52 indoor units
- Slim heat recovery box with just 200 mm height
- Farthest piping length between indoor and outdoor units: 200 m

Excellent seasonal energy saving.



Extended design operation conditions

Cooling design operation conditions: The cooling operating range has been extended to -10 °C ~ 52 °C by changing the outdoor fan to an Inverter type.
Heating design operation conditions: Stable heating operation even with an outside air temperature of -20 °C. The heating operating range has been extended to -20 °C by use of a compressor with a high-pressure vessel.



Cooling: Outside air temperature °C (DB). Heating: Outside air temperature °C (WB).

Wide temperature setting range

Wired remote controller heating temperature setting range is 16 to 30 °C as standard.

Increased maximum number of connectable indoor units

Maximum 48 HP with 52 indoor units can be set up according to user needs.
Connectable indoor / outdoor unit capacity ratio up to 150%.

System (HP)	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Connectable indoor units*: 150%	19	24	29	34	39	43	48	52				52									

*Depending on indoor units types. Please check service manuals.

Power suppression control for energy saving (demand control) [1]

The 3-Pipe ECOi EX MF3 Series has a built-in demand function which uses the Inverter characteristics. With this demand function, the power consumption can be set in three steps, and operation [2] at optimum performance is performed according to the setting and the power consumption. This function is useful to reduce the annual power consumption and to save electricity costs while maintaining comfort.

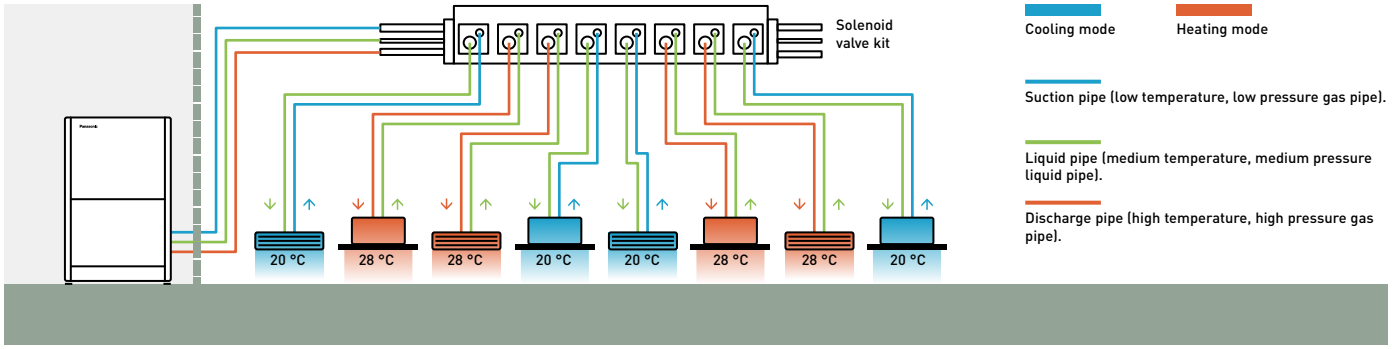
1) An outdoor Seri-Para I/O unit is required for demand input.
2) Setting is possible as 0% or in the range from 40 to 100% (in steps of 5%). At the time of shipping, setting has been done to the three steps of 0%, 70%, and 100%.

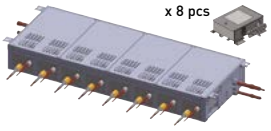
Slim 3-Pipe control box kit / Multiple connection type

Heat recovery Box to connect multiple indoor units with just one box, 4, 6 and up to 8 indoor units or groups.
The height is only 200 mm, which is especially advantageous in hotel applications, where space for connecting several boxes is limited.

Individual control of multiple indoor units with solenoid valve kits.
· Any design and layout can be used in a single system.
· Cooling operation is possible with an outdoor temperature of -10 °C.

System structure.

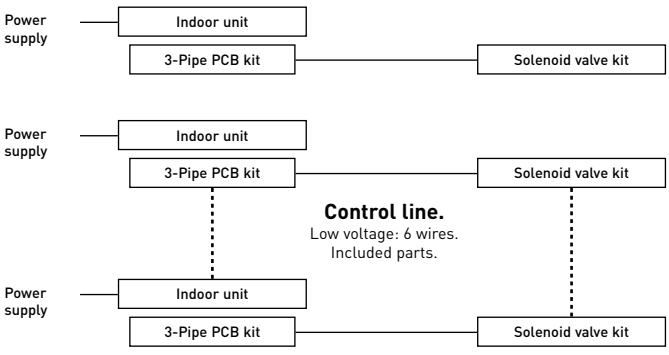


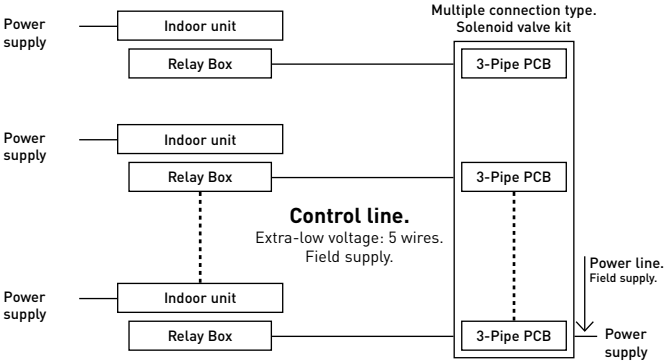
	1 port	4 port	6 port	8 port
56 type	CZ-P56HR3	CZ-P456HR3	CZ-P656HR3	CZ-P856HR3
160 type	CZ-P160HR3	CZ-P4160HR3	—	—

Solenoid valve kit / wiring work

Single connection type.



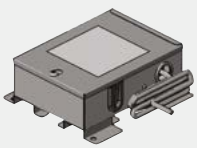
Multiple connection type.



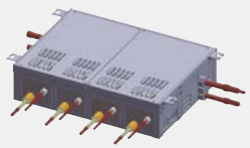
3-Pipe PCB kit.
Separately purchased.

Single HR3 kit.

Signal Relay Box.
Included accessory.



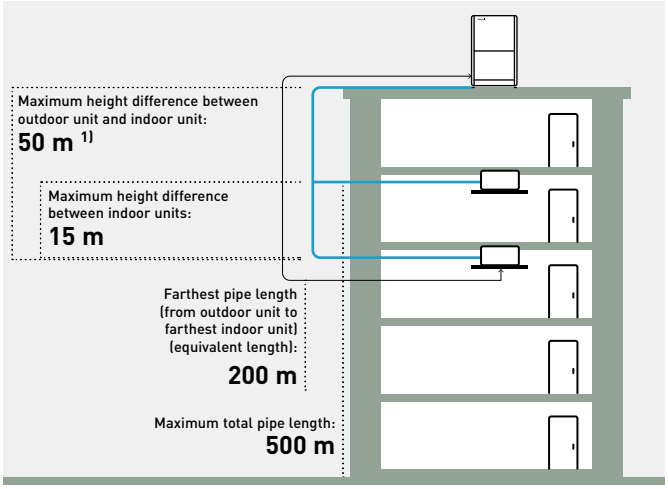
Multiple HR3 kit.



3-Pipe ECOi EX MF3 Series superior flexibility

Increased piping lengths and design flexibility

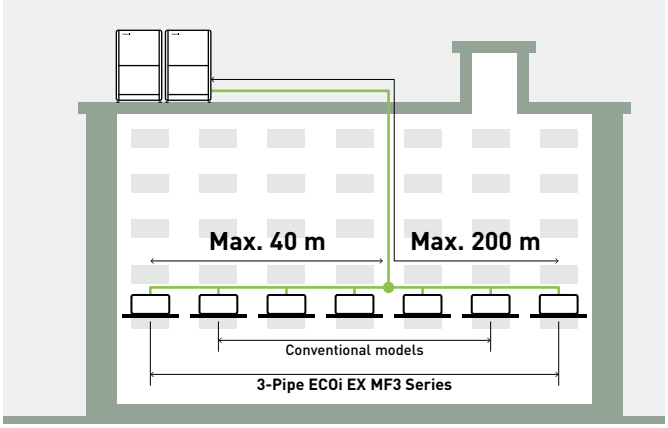
Adaptable to various building types and sizes. Actual piping length: 200 m. Maximum piping length: 500 m.



1) 40 m if the outdoor unit is below the indoor unit.

Up to 40 m piping after first branch

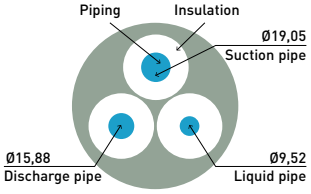
Up to 52 units can be connected to one system. Flexible piping layout makes it easier to design systems for locations such as train stations, airports, schools and hospitals.



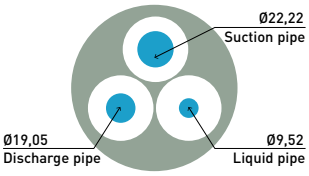
Excellent cost saving and smaller piping size

By using R410A with low pressure loss, pipe sizes for discharge, suction and liquid are all reduced.
This makes it possible to aim for reduced piping space, improved workability at the site, and reduction of the piping material costs.

8 HP

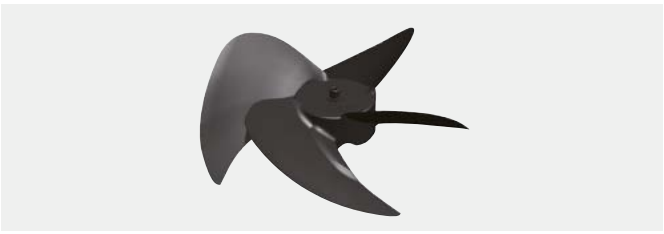


10 HP

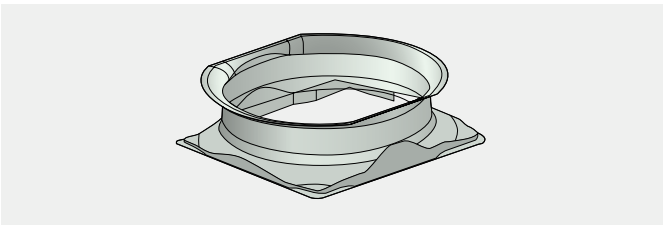


High external static pressure on condensers

With an efficient fan shape, fan guard, motor, and casing, the models can be custom-installed on-site to provide up to 80 Pa of external static pressure.

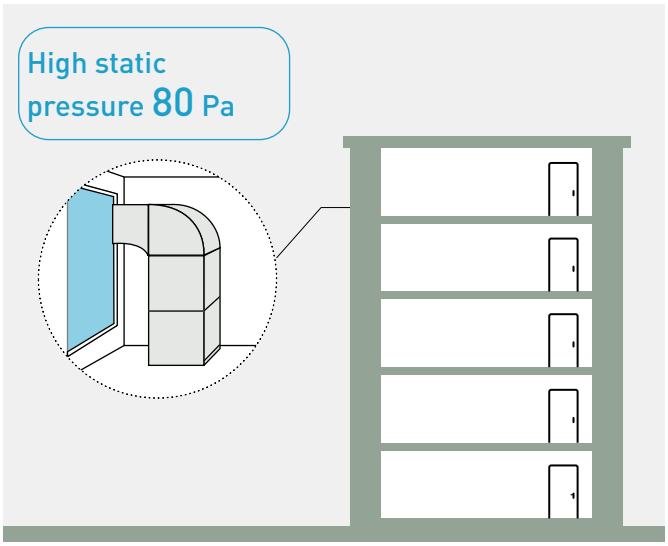


Fan.



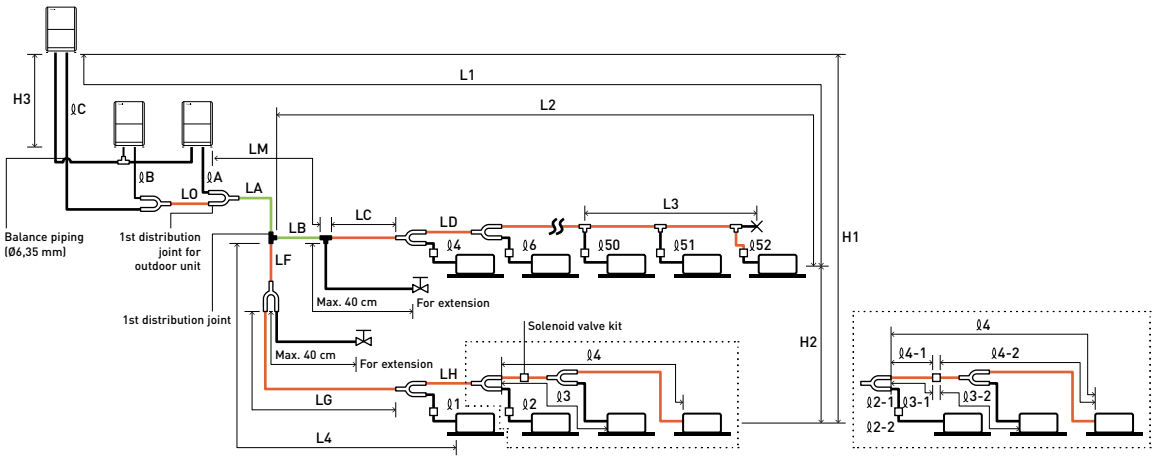
Bell-mouth casing.

An air discharge duct prevents air flow short-circuiting, allowing outdoor units to be installed on every floor of a building.



3-Pipe ECOi EX MF3 Series piping design

Select installation locations so that the lengths and sizes of refrigerant piping are within the allowable ranges shown in the figure below.



The outdoor connection main piping (LO portion) is determined by the total capacity of the outdoor units that are connected to the tube ends.
Note: Be sure to use special R410A distribution joints (CZ: optional parts) for outdoor unit connections and piping branches.

R410A distribution joint.
CZ-P680PJ2BM
(for outdoor unit)
CZ-P1350PJ2BM
(for outdoor unit)
CZ-P224BH2BM
(for indoor unit)
CZ-P680BH2BM
(for indoor unit)
CZ-P1350BH2BM
(for indoor unit)

Main piping length (maximum piping size) LM= LA + LB ...

Main distribution tubes LC – LH are selected according to the capacity after the distribution joint.

Sizes of indoor unit connection piping ℓ1 – ℓ52 are determined by the connection piping sizes on the indoor units.

Distribution joint (CZ: optional parts).

T-joint (field supply).

Ball valve (field supply).

Solidly welded shut (pinch weld).

Ranges that apply to refrigerant piping lengths and to differences in installation heights

Items	Mark	Contents		Length (m)
Allowable piping length	L1	Maximum piping length	Actual length	≤200[1]
			Equivalent length	≤210[1]
	Δ L (L2-L4)	Difference between maximum length and minimum length from the 1st distribution joint		≤50[2]
	LM	Maximum length of main piping (at maximum size) * Even after 1st distribution joint, LM is allowed if at maximum piping length.		—[3]
	ℓ1, ℓ2~ ℓ52	Maximum length of each distribution tube		≤50[4]
	L1+ ℓ1+ ℓ2~ ℓ51+ ℓA+ℓB+LF+LG+LH	Total maximum piping length including length of each distribution tube (only liquid piping)		≤500
	ℓA, ℓB+LO, ℓC+LO	Maximum piping length from outdoor's 1st distribution joint to each outdoor unit		≤10
	ℓ1-2, ℓ2-2 ~ ℓ52-2	Maximum length between solenoid valve kit and indoor unit		≤30
Allowable elevation difference	H1	When outdoor unit is installed higher than indoor unit		≤50
		When outdoor unit is installed lower than indoor unit		≤40
	H2	Maximum difference between indoor units		≤15[5]
	H3	Maximum difference between outdoor units		≤4
Allowable length of joint piping	L3	T-joint piping (field-supply); Maximum piping length between the first T-joint and solidly welded-shut end point		≤2

L = Length, H = Height

1) If the longest piping length (L1) exceeds 90 m (equivalent length), increase the sizes of the main pipes (LM) by 1 rank for suction pipes, discharge pipes and liquid pipes. Use a field supply reducer. Select the pipe size from the table of main piping sizes (Table 3) and from the table of refrigerant piping sizes (Table 8). 2) If the longest main piping length (LM) exceeds 50 m, increase the main piping size at the portion before 50 m by 1 rank for the suction pipes and discharge pipes. Use a field supply reducer. Determine the length less than the limitation of allowable maximum piping length. For the portion that exceeds 50 m, set based on the main piping size (LA) listed in Table 3. 3) If the piping length marksd "L" (L2-L4) exceeds 40 m, increase the piping size at the portion after the 1st distribution joint by 1 rank for the liquid pipe, suction pipe and discharge pipe. Refer to the Technical Data for the details. 4) If any of the piping length exceeds 30 m, increase the size of the suction pipes,discharge pipes and liquid pipes by 1rank.
* The outdoor connection main piping (LO portion) is determined by the total capacity of the outdoor units that are connected to the pipe ends.

System limitations.

Maximum number allowable connected outdoor units	3
Maximum capacity allowable connected outdoor units	135 kW (48 HP)
Maximum connectable indoor units	52
Maximum allowable indoor / outdoor capacity ratio	50-150%

Additional refrigerant charge.

Liquid piping size (Inch (mm))	1/4 (6,35)	3/8 (9,52)	1/2 (12,70)	5/8 (15,88)	3/4 (19,05)	7/8 (22,22)
Amount of refrigerant charge (g/m)	26	56	128	185	259	366

1) In the case of 24 HP (type 68 kW) or smaller units, the number is limited by the total capacity of the connected indoor units.
2) Up to 3 units can be connected if the system has been extended.
3) It is strongly recommended that you choose the unit so the load can become between 50 and 130%.

Necessary amount of additional refrigerant charge per meter, according to discharge piping size.

Discharge piping size	Inch (mm)	1/2 (12,70)	5/8 (15,88)	3/4 (19,05)	7/8 (22,22)	1 (25,40)	1-1/8 (28,58)	1-1/4 (31,75)	1-1/2 (38,10)
Additional amount	g/m	12	21	31	41	55	71	89	126

Refrigerant piping.

Piping size (mm)											
Material Temper - O						**Material Temper - 1/2 H, H**					
Ø6,35	t 0,8	Ø12,70	t 0,8	Ø19,05	t 1,2	Ø22,22	t 1,0	Ø28,58	t 1,0	Ø38,10	t 1,15
Ø9,52	t 0,8	Ø15,88	t 1,0			Ø25,40	t 1,0	Ø31,75	t 1,1	Ø41,28	t 1,20

* When bending the tubes, use a bending radius that is at least 4 times the outer diameter of the tubes. In addition, take sufficient care to avoid crushing or damaging the tubes when bending them.

3-Pipe ECOi EX MF3 Series

Simultaneous heating and cooling operation with heat recovery type.
The 3-Pipe ECOi EX MF3 Series is one of the most advanced VRF systems. Not only highly efficient performance for simultaneous heating and cooling, but also sophisticated installation and maintenance capability.

4,85 SCOP

HP			8 HP	10 HP	12 HP	14 HP	16 HP
Outdoor unit			**U-8MF3E8**	**U-10MF3E8**	**U-12MF3E8**	**U-14MF3E8**	**U-16MF3E8**
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50
Cooling capacity		kW	22,4	28,0	33,5	40,0	45,0
EER [1]		W/W	5,11	4,72	3,91	3,70	3,49
Current		A	7,16 - 6,80 - 6,55	9,90 - 9,41 - 9,07	3,19 - 13,20 - 12,70	18,20 - 17,30 - 16,70	21,30 - 20,20 - 19,50
Input power		kW	4,38	5,93	8,57	10,80	12,90
Heating capacity		kW	25,0	31,5	37,5	45,0	50,0
COP [1]		W/W	5,25	5,17	4,51	4,21	4,17
Current		A	7,78 - 7,39 - 7,12	10,20 - 9,66 - 9,31	13,40 - 12,80 - 12,30	18,10 - 17,20 - 16,50	20,00 - 19,00 - 18,30
Input power		kW	4,76	6,09	8,32	10,70	12,00
Starting current		A	1,00	1,00	1,00	2,00	2,00
External static pressure (Max)		Pa	80	80	80	80	80
Air flow		m^3/min	210	220	232	232	232
Sound pressure	Normal mode	dB(A)	54,0	57,0	60,0	61,0	62,0
	Silent mode 1 / 2	dB(A)	51,0 / 49,0	54,0 / 52,0	57,0 / 55,0	58,0 / 56,0	59,0 / 57,0
Sound power	Normal mode	dB(A)	76,0	78,0	81,0	82,0	82,0
Dimension	H x W x D	mm	1842 x 1180 x 1000	1842 x 1180 x 1000	1842 x 1180 x 1000	1842 x 1180 x 1000	1842 x 1180 x 1000
Net weight		kg	261	262	286	334	334
Piping diameter [2]	Liquid	Inch (mm)	3/8 (9,52) / 1/2 (12,70)	3/8 (9,52) / 1/2 (12,70)	1/2 (12,70) / 5/8 (15,88)	1/2 (12,70) / 5/8 (15,88)	1/2 (12,70) / 5/8 (15,88)
	Discharge	Inch (mm)	5/8 (15,88) / 3/4 (19,05)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	7/8 (22,22) / 1 (25,40)	7/8 (22,22) / 1 (25,40)
	Suction	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	7/8 (22,22) / 1 (25,40)	1 (25,40) / 1-1/8 (28,58)	1 (25,40) / 1-1/8 (28,58)	1-1/8 (28,58) / 1-1/4 (31,75)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	6,80 / 14,1984	6,80 / 14,1984	8,30 / 17,3304	8,30 / 17,3304	8,30 / 17,3304
Maximum allowable indoor / outdoor capacity ratio		%	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18
	Simultaneous op.	°C	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24

ErP data [3]					
SEER [4]	**7,02**	**7,05**	**6,39**	**6,69**	**6,02**
$\eta_{s,c}$	**277,7%**	**278,9%**	**252,7%**	**264,4%**	**237,7%**
SCOP [4]	**4,85**	**4,25**	**4,27**	**4,13**	**3,81**
$\eta_{s,h}$	**190,9%**	**166,8%**	**167,8%**	**162,1%**	**149,3%**

1) EER and COP calculation is based in accordance to EN14511. 2) Piping diameter under 90 m for ultimate indoor unit / over 90 m for ultimate indoor unit (if the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes). 3) SEER / SCOP and $\eta_{s,c}$ / $\eta_{s,h}$ are in accordance with ErP test data for F2 type variable static pressure hide-away indoor units.
4) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF.

Solenoid valve kit	
KIT-P56HR3	3-Pipe control solenoid valve kit (up to 5,6 kW)
CZ-P56HR3	Solenoid valve kit (up to 5,6 kW)
CZ-CAPE2	3-Pipe control PCB
KIT-P160HR3	3-Pipe control solenoid valve kit (from 5,6 to 16,0 kW)
CZ-P160HR3	Solenoid valve kit (from 5,6 kW to 16,0 kW)
CZ-CAPE2	3-Pipe control PCB
CZ-CAPEK2 [5]	3-Pipe control PCB for wall-mounted

3-Pipe control box kit	
CZ-P456HR3	4 ports 3 pipe box (up to 5,6 kW per port)
CZ-P656HR3	6 ports 3 pipe box (up to 5,6 kW per port)
CZ-P856HR3	8 ports 3 pipe box (up to 5,6 kW per port)
CZ-P4160HR3	4 ports 3 pipe box (up to 16,0 kW per port)

5) Available for S-45/56/73/106MK2E5B.

HIGH COP · INVERTER+ · -20 °C HEATING MODE · 5 YEARS COMPRESSOR WARRANTY

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

- Achieving SCOP 4,85 top class in the industry (LOT21 Seasonal heating efficiency value for 8 HP outdoor unit)
- Simultaneous cooling and heating operation with up to 39 indoor units
- Slim heat recovery boxes with just 200 mm height fit with the ceiling space limited in hotel applications

Technical focus

- High SEER / SCOP at full Load capacity (follows LOT21)
- Eurovent certified EER / COP
- Standardisation of outdoor unit to one compact casing size
- Connection of up to 52 indoor units
- High external static pressure 80 Pa with an efficient fan shape, fan guard, motor, and casing
- Silent outdoor unit operation: Minimum 54 dB(A) for 8 HP
- Bluefin coil coating as standard

3-Pipe ECOi EX MF3 Series combination from 18 to 48 HP

HP			18 HP	20 HP	22 HP	24 HP	26 HP	28 HP	30 HP	32 HP
Outdoor unit			U-8MF3E8	U-8MF3E8	U-10MF3E8	U-12MF3E8	U-10MF3E8	U-12MF3E8	U-14MF3E8	U-16MF3E8
			U-10MF3E8	U-12MF3E8	U-12MF3E8	U-12MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50	50	50
Cooling capacity		kW	50,0	56,0	61,5	68,0	73,0	78,5	85,0	90,0
EER [1]		W/W	4,90	4,31	4,24	3,89	3,88	3,65	3,59	3,49
Current		A	16,80-16,00-15,40	21,00-20,00-19,20	23,70-22,50-21,70	28,30-26,90-25,90	31,00-29,50-28,40	35,10-33,40-32,20	39,60-37,60-36,20	42,60-40,50-39,00
Input power		kW	10,20	13,00	14,50	17,50	18,80	21,50	23,70	25,8
Heating capacity		kW	56,0	63,0	69,0	76,5	81,5	87,5	95,0	100,0
COP [1]		W/W	5,23	4,77	4,79	4,47	4,50	4,31	4,19	4,17
Current		A	17,70-16,80-16,20	21,30-20,30-19,50	23,50-22,30-21,50	27,60-26,30-25,30	30,20-28,70-27,70	33,50-31,80-30,70	37,90-36,00-34,70	40,10-38,10-36,70
Input power		kW	10,70	13,20	14,40	17,10	18,10	20,30	22,70	24,00
Starting current		A	2,00	2,00	2,00	2,00	3,00	3,00	4,00	4,00
External static pressure (Max)		Pa	80	80	80	80	80	80	80	80
Air flow		m³/min	430	442	452	464	452	464	464	464
Sound pressure	Normal mode	dB(A)	59,0	61,0	62,0	63,0	63,5	64,5	64,5	65,0
	Silent mode 1 / 2	dB(A)	56,0 / 54,0	58,0 / 56,0	59,0 / 57,0	60,0 / 58,0	60,5 / 58,5	61,5 / 59,5	61,5 / 59,5	62,0 / 60,0
Sound power	Normal mode	dB(A)	81,5	84,0	84,5	86,0	84,5	86,0	86,0	86,0
Dimension	H x W x D	mm	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000
Net weight		kg	523	547	548	574	596	620	668	668
Piping diameter [2]	Liquid	Inch (mm)	5/8 (15,88) / 3/4 (19,05)	5/8 (15,88) / 3/4 (19,05)	5/8 (15,88) / 3/4 (19,05)	5/8 (15,88) / 3/4 (19,05)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Discharge	Inch (mm)	7/8 (22,22) / 1 (25,40)	7/8 (22,22) / 1 (25,40)	1 (25,40) / 1-1/8 (28,58)	1 (25,40) / 1-1/8 (28,58)	1 (25,40) / 1-1/8 (28,58)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)
	Suction	Inch (mm)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	13,60/28,3968	15,10/31,5288	15,10/31,5288	16,60/34,6608	15,10/31,5288	16,60/34,6608	16,60/34,6608	16,60/34,6608
Maximum allowable indoor / outdoor capacity ratio		%	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18
	Simultaneous op.	°C	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24

HP			34 HP	36 HP	38 HP	40 HP	42 HP	44 HP	46 HP	48 HP
Outdoor unit			U-8MF3E8	U-8MF3E8	U-10MF3E8	U-8MF3E8	U-10MF3E8	U-12MF3E8	U-14MF3E8	U-16MF3E8
			U-10MF3E8	U-12MF3E8	U-12MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8
			U-16MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8	U-16MF3E8
Power supply	Voltage	V	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415	380 - 400 - 415
	Phase		Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase	Three phase
	Frequency	Hz	50	50	50	50	50	50	50	50
Cooling capacity		kW	96,0	101,0	107,0	113,0	118,0	124,0	130,0	135,0
EER [1]		W/W	4,10	3,90	3,88	3,72	3,72	3,58	3,55	3,49
Current		A	38,60-36,70-35,40	42,30-40,20-38,70	45,60-43,30-41,70	50,20-47,70-46,00	52,40-49,70-47,90	56,50-53,70-51,80	61,10-58,10-56,00	63,90-60,70-58,50
Input power		kW	23,40	25,90	27,60	30,40	31,70	34,60	36,60	38,70
Heating capacity		kW	108,0	113,0	119,0	127,0	132,0	138,0	145,0	150,0
COP [1]		W/W	4,64	4,48	4,51	4,31	4,36	4,25	4,18	4,17
Current		A	38,90-37,00-35,60	41,60-39,50-38,10	43,60-41,40-39,90	49,30-46,80-45,10	50,60-48,10-46,30	53,70-51,00-49,10	57,90-55,00-53,00	60,10-57,10-55,00
Input power		kW	23,30	25,20	26,40	29,50	30,30	32,50	34,70	36,00
Starting current		A	4,00	4,00	4,00	5,00	5,00	5,00	6,00	6,00
External static pressure (Max)		Pa	80	80	80	80	80	80	80	80
Air flow		m³/min	662	674	684	674	684	696	696	696
Sound pressure	Normal mode	dB(A)	64,0	64,5	65,0	65,5	66,0	66,5	66,5	67,0
	Silent mode 1 / 2	dB(A)	61,0 / 59,0	61,5 / 59,5	62,0 / 60,0	62,5 / 60,5	63,0 / 61,0	63,5 / 61,5	63,5 / 61,5	64,0 / 62,0
Sound power	Normal mode	dB(A)	84,5	85,5	85,5	85,5	86,0	86,5	87,0	87,0
Dimension	H x W x D	mm	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000
Net weight		kg	857	881	882	929	930	954	1002	1002
Piping diameter [2]	Liquid	Inch (mm)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)	3/4 (19,05) / 7/8 (22,22)
	Discharge	Inch (mm)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/8 (28,58) / 1-1/4 (31,75)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/4 (31,75) / 1-1/2 (38,10)
	Suction	Inch (mm)	1-1/4 (31,75) / 1-1/2 (38,10)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)	1-1/2 (38,10) / 1-5/8 (41,28)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
Refrigerant (R410A) / CO_2 Eq.		kg / T	21,90/45,72719	23,40/48,85919	23,40/48,85919	23,40/48,85919	23,40/48,85919	24,90/46,3536	24,90/51,9912	24,90/51,9912
Maximum allowable indoor / outdoor capacity ratio		%	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18
	Simultaneous op.	°C	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24

1) EER and COP calculation is based in accordance to EN14511. 2) Piping diameter under 90 m for ultimate indoor unit / over 90 m for ultimate indoor unit (if the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes).

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

ECO G, the gas driven VRF

The advanced Gas Driven VRF system offers increased efficiency and performance across the range. Improvements include increased part load performance, reduced gas consumption with a Miller-cycle engine and reduced electrical consumption by using DC-Fan motors.

2-Pipe ECO G GE3 Series.

Designed for better energy efficiency.

3-Pipe ECO G GF3 Series.

Domestic hot water can be supplied by effectively using waste heat generated during heating and cooling operation.

1 Limited electric supply

Electric consumption of ECO G is only 9% compared to ECOi because gas engine is utilized for the compressor driving force.

2 High demand of DHW with heating and cooling cogeneration

DHW is produced effectively thanks to heat from engine exhaust during heating and cooling.

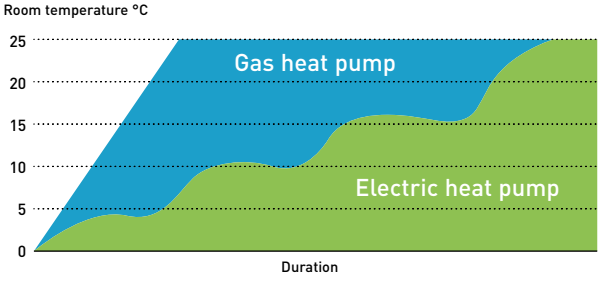
3 Open and flexible design

ECO G system is designed to connect various Indoor units and controllers which are available for ECOi systems. With GE3 series, Pump Down system has been implemented to answer commercial needs.

4 Quick start up in heating at low ambient temperature

Gas heat pump systems make your building comfortably warm with a quick start by using waste heat from engine.
Heating mode works from an ambient temperature of -21 °C.

Comparison of heating capacity.



GE3/GF3 connectable indoor units

Type	Model number reference	2-Pipe ECO G GE3 Series	3-Pipe ECO G GF3 Series
Standard A2A indoor units	—	Yes [1]	Yes [1]
Water heat exchanger	PAW-250/500W(P)5G	Yes [2]	No
High static pressure hide-away	S-ME2E5	Yes	No
Heat recovery with DX coil - ZDX Series	PAW-ZDX3N	Yes	Yes
Air curtain with DX coil	PAW-EAIRC-HS/LS	Yes	Yes [3]
AHU connection kit	PAW-MAH3M	Yes	Yes [3]

1) Except for 1,5 kW capacity. 2) Allowed 1:1 and also mixed. If mixed, not operate at the same time WHE + DX only operate separately. 3) Smaller capacity than 16 kW only.

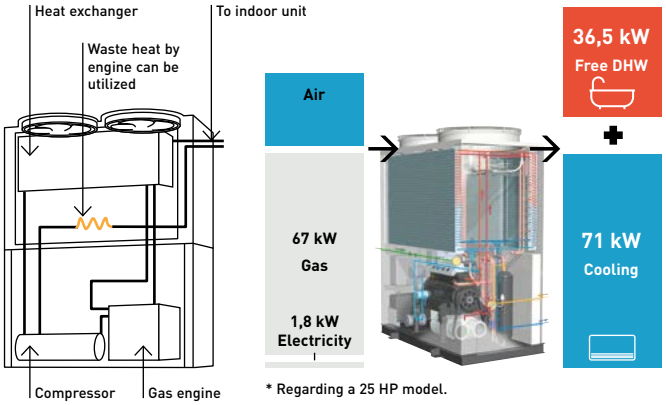
ECO G, the gas driven VRF

ECO G satisfies special requirements for your application and offers an environmentally friendly solution with Panasonic professional technology, providing reliable quality given its long development history, since 1985.

Our ECO G VRF range of commercial systems is leading the industry in the development of efficient and flexible systems.

200.000
GHP outdoor units sold all over the world

1985
Introduces first GHP (Gas Heat Pump) VRF air conditioner.



* Regarding a 25 HP model.

What is GHP? The Gas Heat Pump (GHP)

Panasonic Gas Heat Pump is a direct expansion system, with a compressor the same as the VRF system. A Gas engine is used as the driving force of the compressor instead of an electric motor. This gas engine compressor drive has 2 advantages:

1 | Waste heat available from the gas engine.
2 | No need for motor power consumption thanks to gas engine.

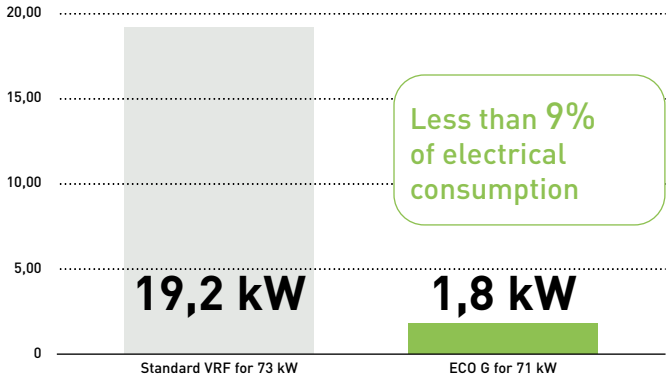
GHP is the natural choice for commercial projects, especially for those projects where electrical power restrictions apply.

Power supply problems?

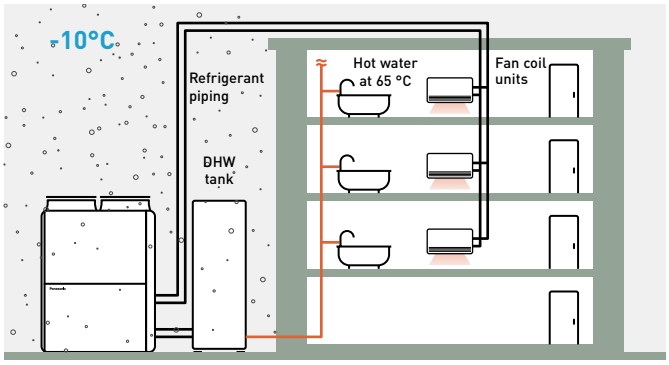
If you are short of electric power, our ECO G is a perfect solution.

- Runs on natural gas or LPG and just needs single phase supply
- Enables the building's electrical power supply to be used for other critical electrical demands
- Reduces capital cost to upgrade power substations to run heating and cooling systems
- Reduces power loadings within a building especially during peak periods
- Electricity supply freed up for other uses such as IT servers, commercial refrigeration, manufacturing, lighting, etc...

Limited electricity area.
Comparison of electrical consumption on a 71 kW outdoor unit.



Application example: Hotel.



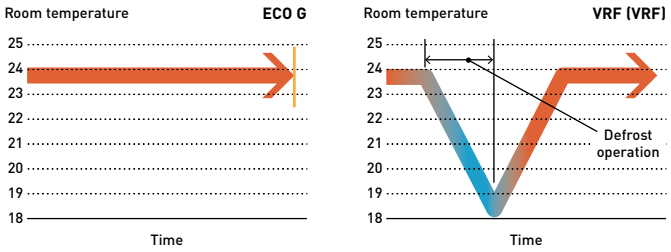
No need additional electric heaters. * This scheme is also valid with WHE.

High demand of domestic hot water in heating and cooling

The rejected heat from the engine is available for DHW production and can supply up to 46 kW of hot water at 65 °C. DHW at 65 °C is also ready to use in heating without additional electric heaters.

Quick start up and great heating capacity at low ambient temperature.

Waste heat from gas engine is utilized to raise temperature faster than electric VRF systems.
This contributes great heating capacity at extremely low ambient temperature.



Lowest nitrogen oxide emissions.
The ECO G VRF systems have low nitrogen oxide emissions. In a pioneering development, the Panasonic ECO G features a brand lean-burn combustion system that utilizes air fuel ratio feedback control to reduce NOx emissions to an all time low.

Water chiller option.
Our ECO G system is also available with a water heat exchanger option, which can be combined with individual outdoor units or as part of a DX chilled water mix of indoor units. The system can be operated via a BMS system or a Panasonic supplied control panel, with chilled water set points from
-15 °C ~ +15 °C and heating set points 35 °C ~ +55 °C.

Application

Application	Condition	ECO G	
Hotel	High DHW demand	✔	Energy recovery of ECO G system can fulfill different requirement
Hotel	Needs to warm up swimming pool		
Office	Quick start up is necessary	✔	Speed of start up is quicker than VRF system
Winery	1) Outlet water demand at specific temperature 2) Needs high amount of power temporary (not every month)	✔	1) Chiller application with hydro module (ECO G + WHE) can make this special process 2) Running cost can be saved since fixed Gas tariff per month is cheaper than fixed electric tariff.
Any building	In a city with power restriction	✔	- No need an additional power transformer - Space and cost can be saved
	At extremely low ambient condition	✔	Heating capacity is kept up to -20 °C without defrost process

Project case studies

Savills HQ Dublin and Google Block R. Ireland.
ECO G 3-Pipe units with a 243 kW load.
The project has been such a success that it has recently been awarded a Panasonic PRO Award for Best Contribution of efficient projects within Europe.

Thomas Cook's Sunprime Atlantic View resort.
A holiday resort in the Canaries. Spain.
229 rooms plus full spa and swimming pool facility.

CAPITA call centre. UK.
11 ECO G 3-Pipe units.
Over 150 indoor units in meeting rooms and open-plan areas.
Intelligent touch screen controller, the CZ-256ESMC2.

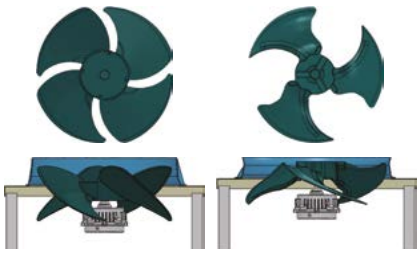
French winery Gennevilliers, France.
ECO G 3-Pipe units. One of the best solution utilized our ECO G solution for wine production process.

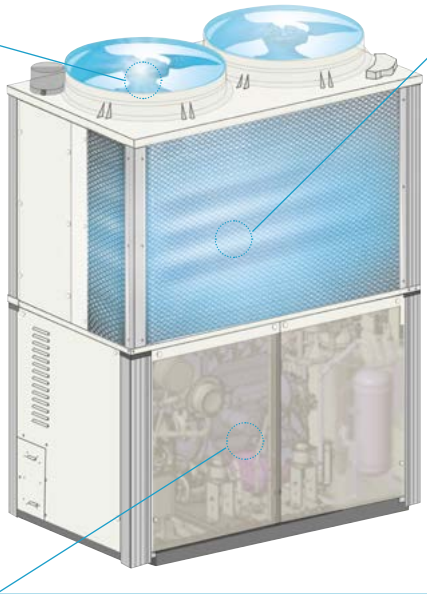
ECO G 3 Series

Introducing ECO G 3 Series. Optimised energy saving with reliable Panasonic technologies.

Improvement in blast efficiency

3-blades fan.
Propeller shape with 3 blades is more efficient
Max. 30% of fan electrical consumption is saved compared to conventional fan.

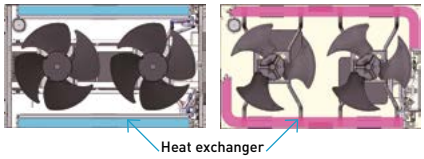




"L" type heat exchanger

Heat exchanger surface area is increased by 25% compared to previous model to optimise efficiency.

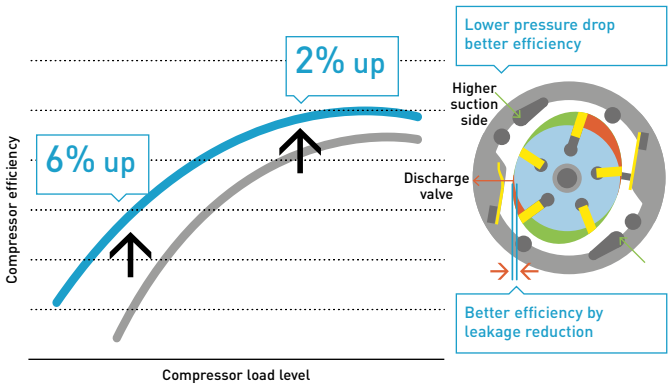
Heat exchanger surface area 25% up



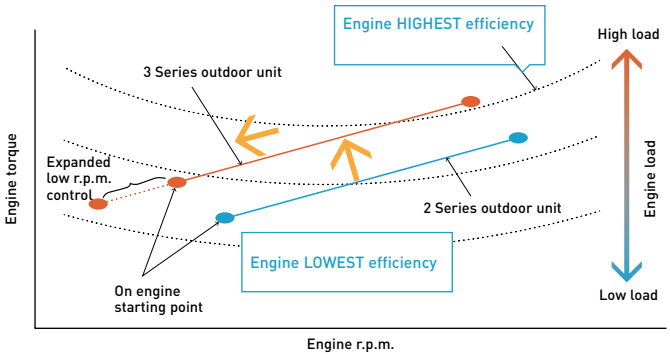
Better partial load control

Start / stop loss reduced by expanding the area where continuous operation is possible. Annual operation efficiency has further improved due to better efficiency at lower partial load.

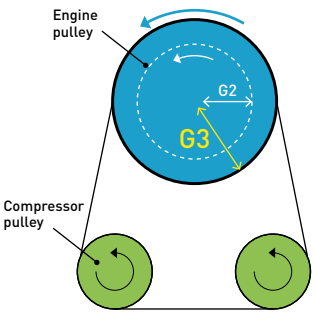
Compressor.
· Amount of internal leakage is reduced due to reduction of clearances, the compressor efficiency in low load and low rotation region has been greatly improved. Moreover, efficiency of high speed and high load is also improved due to expansion of suction path resulting in reduction of suction pressure
· Optimise compressor capacity



Engine.
· Continuous operation area widened at lower partial load by expanding operation area of lower speed
· Engine efficiency has improved by shifting output points to higher torque side



Engine pulley.
· Larger diameter engine pulley contributes to optimisation of compressor rotation speed ratio
Increased engine pulley diameter provides better performance at partial load, reducing ON / OFF operation.



Line up of GE3 2-Pipe W-Multi.

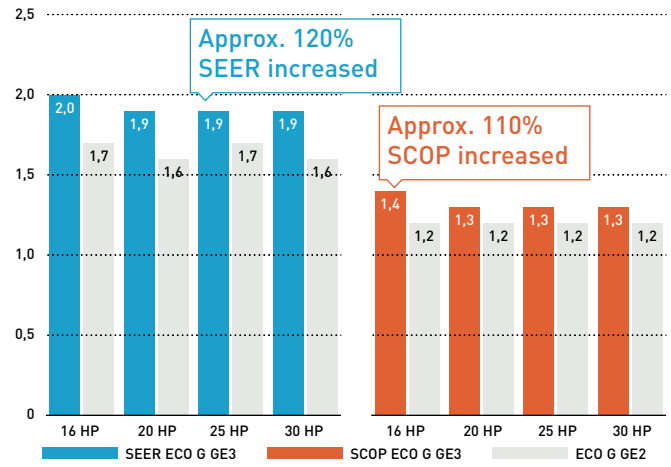
· For new or renewal
· Available for water heat exchanger
· Maximum 60 HP combination

The highest seasonal performance in all capacity ranges.

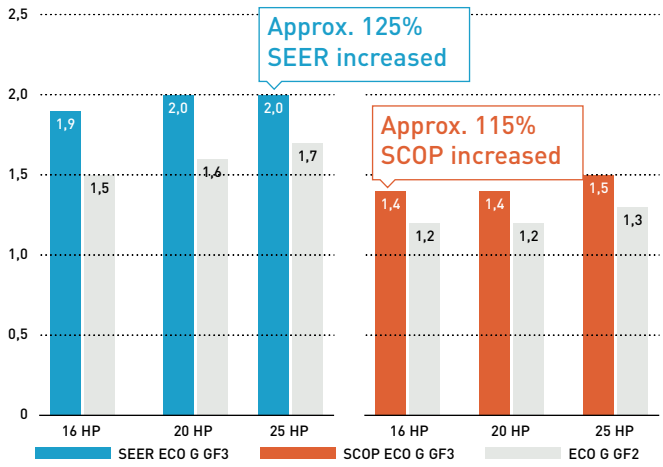
High power efficiency of W-Multi system.
ECO G 3 Series system offers seasonal efficiency which has been drastically improved with the heat exchanger design, blast efficiency, partial load control.

Compared to previous model ECO G 2 Series.
All models have maximum 25% of SEER, 15% of SCOP improvement compared to previous model.

2-Pipe ECO G GE3 Series. SEER / SCOP



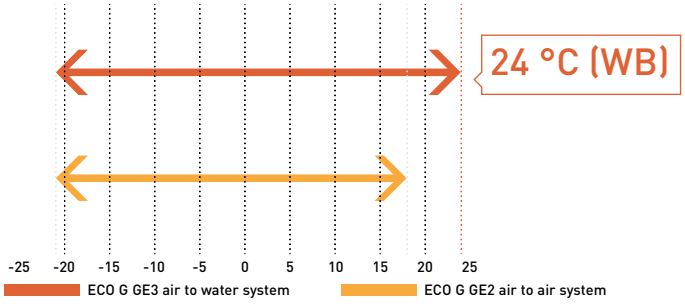
3-Pipe ECO G GF3 Series. SEER / SCOP



* Comparison under Panasonic condition follows EN14825.

Heating design operation conditions (GE3)

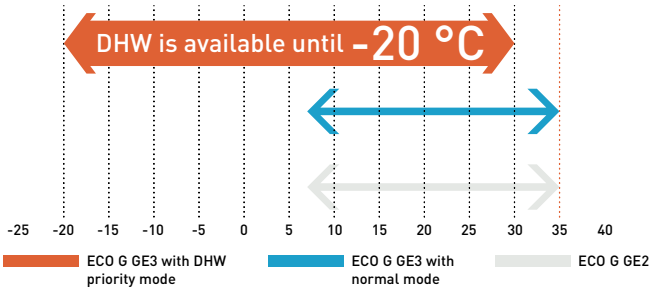
Operating range in heating has been expanded up to 24 °C (WB) for air to water use, to meet the demand of swimming pool applications.



Heating operating range: Air to water system: -21 ~ +24 °C (WB), air to air system: -21 ~ +18 °C (WB).

DHW priority mode setting in heating (GE3)

Ambient temperature range for DHW production is expandable by setting depending on DHW needs. Hot water at 65 °C is available in heating without additional electric heaters.



Heating: Outside air temperature °C (WB).
* In normal mode, heat from engine exhaust is used for preventing defrost.

No defrost requirement (GE3 / GF3)

No defrost mode is selectable to get higher capacity at low ambient temperature.

Flexible design with wide line up of indoor units

The advanced GE3 Series can connect up to 64 indoor units.

Series	16 HP	20 HP	25 HP	30 HP	32 HP	36 HP	40 HP	45 HP	50 HP	55 HP	60 HP
2-Pipe ECO G GE3 Series	26	33	41	50	52	59	64	64	64	64	64
3-Pipe ECO G GF3 Series	24	24	24	—	—	—	—	—	—	—	—

2-Pipe ECO G GE3 Series

The GE3 Series has top level seasonal efficiency in this category. In addition, this product fits with special needs for commercial application thanks to DHW priority setting and auto Pump Down functions.

HP			16 HP	20 HP	25 HP	30 HP
Outdoor unit			**U-16GE3E5**	**U-20GE3E5**	**U-25GE3E5**	**U-30GE3E5**
Power supply	Voltage	V	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240
	Phase		Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50	50	50	50
Cooling capacity		kW	45,0	56,0	71,0	85,0
Refrigeration load Pdesign [1]		kW	45,0	56,0	71,0	85,0
$\eta_{s,c}$ (LOT21) [1]			**220,6%**	**219,3%**	**240,1%**	**229,3%**
Input power		kW	1,17	1,12	1,80	1,80
Hot water in cooling mode (at 65 °C outlet)		kW	23,60	29,10	36,40	46,00
Max COP in hot water		W/W	1,55	1,55	1,49	1,47
Gas consumption cooling		kW	41,10	52,10	67,20	84,10
Heating capacity	Standard	kW	50,0	63,0	80,0	95,0
	Low temperature	kW	53,0	67,0	78,0	90,0
Refrigeration load Pdesign [1]		kW	37,0	53,0	60,0	65,0
$\eta_{s,h}$ (LOT21) [1]			**150,6%**	**143,7%**	**146,9%**	**151,3%**
Input power		kW	0,56	1,05	0,91	1,75
Gas consumption heating	Standard	kW	38,00	51,10	68,60	75,30
	Low temperature	kW	45,40	62,70	60,70	73,90
Starter amperes		A	30	30	30	30
External static pressure		Pa	10	10	10	10
Air flow		m^3/min	370	420	460	460
Sound power	Normal	dB(A)	80	80	84	84
	Silent mode	dB(A)	77	77	81	81
Dimension	H x W x D	mm	2255 x 1650 x 1000	2255 x 1650 x 1000	2255 x 2026 x 1000	2255 x 2026 x 1000
Net weight		kg	765	765	870	880
Piping diameter	Liquid	Inch (mm)	1/2 (12,70)	5/8 (15,88)	5/8 (15,88)	3/4 (19,05)
	Gas	Inch (mm)	1-1/8 (28,58)	1-1/8 (28,58)	1-1/8 (28,58)	1-1/4 (31,75)
	Fuel gas	Inch (mm)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)
	Exhaust drain port	mm	25	25	25	25
	Hot water supply in/out		Rp¾ (Nut, thread)	Rp¾ (Nut, thread)	Rp¾ (Nut, thread)	Rp¾ (Nut, thread)
Elevation difference (in / out)			50	50	50	50
Refrigerant (R410A) / CO_2 Eq.		kg / T	11,50 / 24,00	11,50 / 24,00	11,50 / 24,00	11,50 / 24,00
Maximum number of connectable indoor units			26	33	41	50
Operating range	Cool Min ~ Max	°C (DB)	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43
	Heat Min ~ Max	°C (WB)	-21 ~ +18	-21 ~ +18	-21 ~ +18	-21 ~ +18

1) ErP test data.
Hot water take out function added, EU safety regulation standard cleared. 25 HP chassis enlarged due to specification improvement. Pre-coat corrosion fin. Auto Pump Down function.

Technical focus

- Superior seasonal energy efficiency, maximum 240,1%
- DHW priority setting
- Operating range in heating down to -21 °C and up to +24 °C for air to water system
- No defrost cycle
- Capacity ratio 50 ~ 200% [1]
- Option of DX or chilled water for indoor heat exchange
- Maximum total piping length: 780 m

1) 50 ~ 200% only when one outdoor unit is installed. In other cases 50 ~ 130%.

GAS POWERED ECO G

5 YEARS COMPRESSOR WARRANTY

2-Pipe ECO G GE3 Series combination from 32 to 60 HP

The GE3 Series has top level seasonal efficiency in this category. In addition, this product fits with special needs for commercial application thanks to DHW priority setting and Auto Pump Down functions.

HP			32 HP	36 HP	40 HP	45 HP	50 HP	55 HP	60 HP
Outdoor unit			U-16GE3E5	U-16GE3E5	U-20GE3E5	U-20GE3E5	U-25GE3E5	U-25GE3E5	U-30GE3E5
			U-16GE3E5	U-20GE3E5	U-20GE3E5	U-25GE3E5	U-25GE3E5	U-30GE3E5	U-30GE3E5
Power supply	Voltage	V	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240
	Phase		Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50	50	50	50	50	50	50
Cooling capacity		kW	90,0	101,0	112,0	127,0	142,0	156,0	170,0
Input power		kW	2,34	2,29	2,24	2,92	3,60	3,60	3,60
Hot water in cooling mode (at 65 °C outlet)		kW	47,20	52,70	58,20	65,50	72,80	82,40	92,00
Max COP in hot water		W/W	1,55	1,55	1,55	1,52	1,49	1,48	1,47
Gas consumption cooling		kW	82,20	93,20	104,20	119,30	134,40	151,30	168,20
Heating capacity	Standard	kW	100,0	113,0	126,0	143,0	160,0	175,0	190,0
	Low temperature	kW	106,0	120,0	134,0	145,0	156,0	168,0	180,0
Input power		kW	1,12	1,61	2,10	1,96	1,82	2,66	3,50
Gas consumption heating	Standard	kW	76,00	89,10	102,20	119,70	137,20	143,90	150,60
	Low temperature	kW	90,80	108,10	125,40	123,40	121,40	134,60	147,80
Starter amperes		A	30	30	30	30	30	30	30
External static pressure		Pa	10	10	10	10	10	10	10
Air flow		m^3/min	370/370	370/420	420/420	420/460	460/460	460/460	460/460
Sound power	Normal	dB(A)	83	83	83	86	87	87	87
	Silent mode	dB(A)	80	80	80	83	84	84	84
Dimension	Height	mm	2255	2255	2255	2255	2255	2255	2255
	Width	mm	1650 + 100 + 1650	1650 + 100 + 1650	1650 + 100 + 1650	1650 + 100 + 2026	2026 + 100 + 2026	2026 + 100 + 2026	2026 + 100 + 2026
	Depth	mm	1000	1000	1000	1000	1000	1000	1000
Net weight		kg	1530 (765 + 765)	1530 (765 + 765)	1530 (765 + 765)	1635 (765 + 870)	1740 (870 + 870)	1750 (870 + 880)	1760 (880 + 880)
Piping diameter	Liquid	Inch (mm)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	7/8 (22,22)	7/8 (22,22)
	Gas	Inch (mm)	1-1/4 (31,75)	1-1/4 (31,75)	1-1/2 (38,10)	1-1/2 (38,10)	1-1/2 (38,10)	1-1/2 (38,10)	1-1/2 (38,10)
	Fuel gas	Inch (mm)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)
	Exhaust drain port	mm	25	25	25	25	25	25	25
	Hot water supply in/ out		Rp¾ (Nut, thread)	Rp¾ (Nut, thread)	Rp¾ (Nut, thread)	Rp¾ (Nut, thread)	Rp¾ (Nut, thread)	Rp¾ (Nut, thread)	Rp¾ (Nut, thread)
Elevation difference (in / out)			50	50	50	50	50	50	50
Refrigerant (R410A) / CO_2 Eq.		kg / T	2x 11,50/24,00	2x 11,50/24,00	2x 11,50/24,00	2x 11,50/24,00	2x 11,50/24,00	2x 11,50/24,00	2x 11,50/24,00
Maximum number of connectable indoor units			52	59	64	64	64	64	64
Operating range	Cool Min ~ Max	°C	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43
	Heat Min ~ Max	°C	-21 ~ +18	-21 ~ +18	-21 ~ +18	-21 ~ +18	-21 ~ +18	-21 ~ +18	-21 ~ +18

Data is for reference. Hot water take out function added, EU safety regulation standard cleared. 25 HP chassis enlarged due to specification improvement. Pre-coat corrosion fin. Auto Pump Down function.

Technical focus

- Maximum 60 HP combination
- Superior seasonal energy efficiency, maximum 240,1%
- DHW priority setting
- Operating range in heating down to -21 °C and up to +24 °C for air to water system
- No defrost cycle
- Option of DX or chilled water for indoor heat exchange
- Maximum total piping length: 780 m

GAS POWERED ECO G

5 YEARS COMPRESSOR WARRANTY

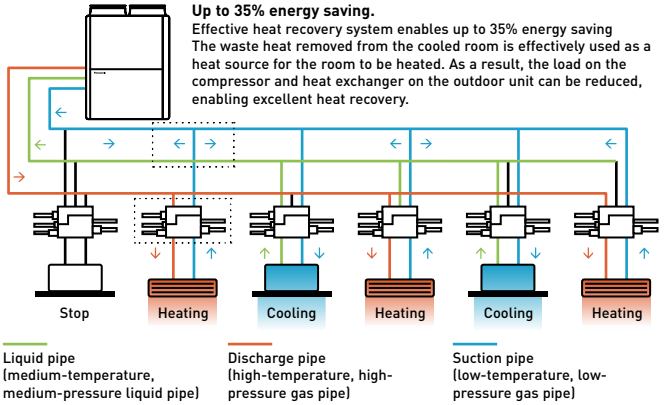
Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

3-Pipe ECO G GF3 Series

Excellent performance and free domestic hot water

Panasonic 3-Pipe Multi system is capable of simultaneous heating / cooling and individual operation of each indoor unit by only one outdoor unit. As a result, efficient individual air conditioning is possible in buildings having diverse room temperatures.
In addition, domestic hot water is created for free in cooling mode, without additional boilers or electric heaters.

System example.
Improved maintenance intervals. The unit only needs to be serviced every 10000 hours.



3-Pipe control solenoid valve kit.

KIT-P56HR3
(CZ-P56HR3 + CZ-CAPE2).

KIT-P160HR3
(CZ-P160HR3 + CZ-CAPE2).

CZ-P56HR3
Up to 5,6 kW.

CZ-P160HR3
Up to 16,0 kW.

3-Pipe control PCB.

CZ-CAPE2*

* For Wall-mounted. Must be added to the CZ-P56HR3 or CZ-P160HR3.

Solenoid valve kit

To be installed on all 'zones', allowing simultaneous heating and cooling. Up to 24 indoor units are capable of simultaneous heating / cooling operation. Oil-recovery operation gives more stable comfort air-conditioning control.

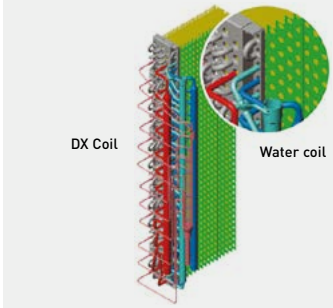
Power supply problems?

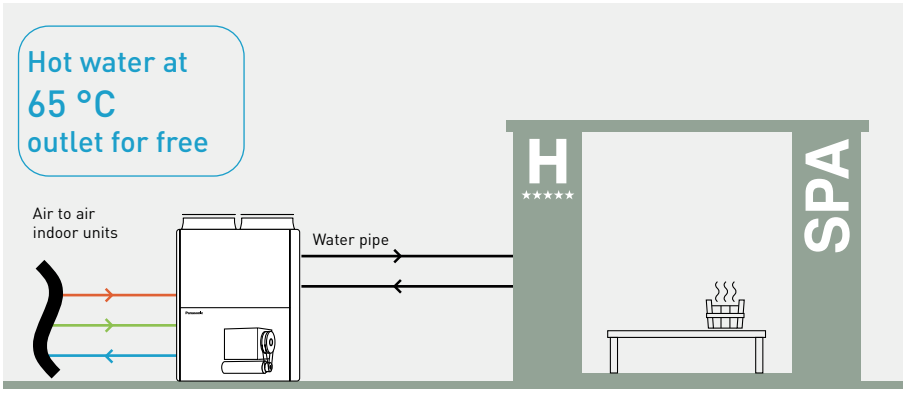
If you are short of electrical power, our gas heat pump could be the perfect solution:

- Runs on natural gas or LPG and needs just a single phase supply
- Enables the building's electrical power supply to be used for other critical electrical demands
- Reduces capital cost to upgrade power substations to run heating and cooling systems
- Reduces power loadings within a building especially during peak periods
- Electricity supply freed up for other uses such as IT servers, commercial refrigeration, manufacturing, lighting etc.

ECO G outdoor heat exchanger.

- Integrated DX and hot water coil
- No defrost required
- Faster reaction to demand for heating





DHW production in heating and cooling

Free DHW is available 365 days a year. Hot water is produced effectively from waste heat from the engine.
Perfect solution for hotel projects requiring high demand for hot water.

HP	Free DHW (in cooling mode)
16 HP	23,6 kW
20 HP	27,1 kW
25 HP	40,5 kW

3-Pipe ECO G GF3 Series

DHW available in all seasons.
Effective production of domestic hot water from engine waste heat in both heating and cooling, all year round.

HP			16 HP	20 HP	25 HP
Outdoor unit			**U-16GF3E5**	**U-20GF3E5**	**U-25GF3E5**
Power supply	Voltage	V	220 - 230 - 240	220 - 230 - 240	220 - 230 - 240
	Phase		Single phase	Single phase	Single phase
	Frequency	Hz	50	50	50
Cooling capacity		kW	45,0	56,0	71,0
Refrigeration load Pdesign [1]		kW	45,0	56,0	71,0
$\eta_{s,c}$ (LOT21) [1]			**185,2%**	**198,8%**	**204,9%**
Input power		kW	1,17	1,40	1,80
Hot water in cooling mode (at 65 °C outlet)		kW	23,60	27,10	40,50
Gas consumption cooling		kW	45,80	54,80	73,70
Heating capacity	Standard	kW	50,0	63,0	80,0
	Low temperature	kW	53,0	67,0	78,0
Refrigeration load Pdesign [1]		kW	38,0	52,0	60,0
$\eta_{s,h}$ (LOT21) [1]			**139,2%**	**140,2%**	**150,9%**
Input power		kW	0,56	1,05	0,91
Gas consumption heating	Standard	kW	42,20	51,10	68,60
Starter amperes		A	30	30	30
Air flow		m^3/min	370	400	460
Sound power	Normal	dB(A)	80	81	84
	Silent mode	dB(A)	77	78	81
Dimension	H x W x D	mm	2255 x 1650 x 1000	2255 x 1650 x 1000	2255 x 2026 x 1000
Net weight		kg	775	775	880
Piping diameter	Liquid	Inch (mm)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)
	Gas	Inch (mm)	1 1/8 (28,58)	1 1/8 (28,58)	1 1/8 (28,58)
	Discharge	Inch (mm)	7/8 (22,22)	1 (25,40)	1 (25,40)
	Fuel gas	Inch (mm)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)
	Exhaust drain port	mm	25	25	25
	Hot water supply in/out		Rp¾ (Nut, thread)	Rp¾ (Nut, thread)	Rp¾ (Nut, thread)
Elevation difference (in / out)		m	50	50	50
Refrigerant (R410A) / CO_2 Eq.		kg / T	11,50 / 24,00	11,50 / 24,00	11,50 / 24,00
Maximum number of connectable indoor units			24	24	24
Operating range	Cool Min ~ Max	°C	-10 ~ +43	-10 ~ +43	-10 ~ +43
	Heat Min ~ Max	°C	-21 ~ +18	-21 ~ +18	-21 ~ +18

1) ErP test data.
Hot water take out function added, EU safety regulation standard cleared. 25 HP chassis enlarged due to specification improvement. Pre-coat corrosion fin. Auto Pump Down function.

Solenoid valve kit	
KIT-P56HR3	3-Pipe control solenoid valve kit (up to 5,6 kW)
CZ-P56HR3	Solenoid valve kit (up to 5,6 kW)
CZ-CAPE2	3-Pipe control PCB
KIT-P160HR3	3-Pipe control solenoid valve kit (from 5,6 to 16,0 kW)
CZ-P160HR3	Solenoid valve kit (from 5,6 kW to 16,0 kW)
CZ-CAPE2	3-Pipe control PCB
CZ-CAPEK2 [2]	3-Pipe control PCB for wall-mounted

3-Pipe control box kit	
CZ-P456HR3	4 ports 3 pipe box (up to 5,6 kW per port)
CZ-P656HR3	6 ports 3 pipe box (up to 5,6 kW per port)
CZ-P856HR3	8 ports 3 pipe box (up to 5,6 kW per port)
CZ-P4160HR3	4 ports 3 pipe box (up to 16,0 kW per port)

2) Available for S-45/56/73/106MK2E5B.

Outstanding seasonal energy efficiency, maximum 204,9%

- Capacity ratio 50 ~ 200%
- No defrost cycle
- Maximum total piping length: 780 m

Flexible installation

- Full heating capacity down to -21 °C (WB)
- DHW production for all the year
- Connection of up to 24 indoor units

GAS POWERED ECO G | 5 YEARS COMPRESSOR WARRANTY

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
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Panasonic GHP/EHP Hybrid System. First intelligent technology

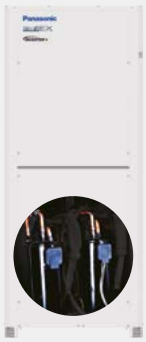
Taking advantage of Gas and Electricity to achieve better energy savings.

GHP + EHP
HYBRID
VRF SYSTEM

GHP Gas

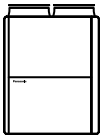
U-20GES3E5 (20 HP)

EHP Electric

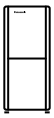


U-10MES2E8 (10 HP)

Intelligent controller CZ-256ESMC3



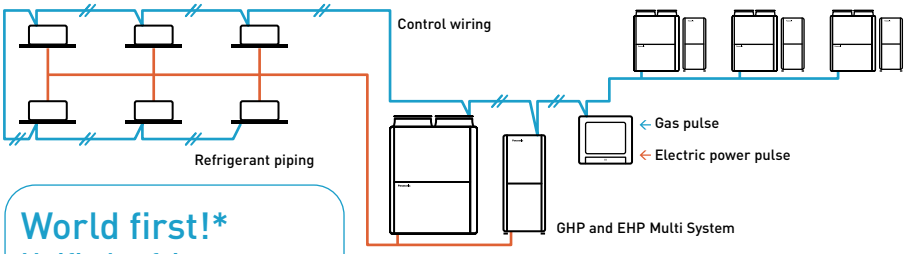
Master unit GHP
- Load calculation of GHP and EHP
- Operation in accordance with the upper limit setting
- Individual capacity control
- Device control
- Special control (Defrost, Oil recovery, 4 Way-valve matching / Abnormality processing)



Slave Unit EHP

Intelligent controller
- Demand monitoring
- Indoor / total load calculation
- Operation Ratio Indication upper limit setting of MAP according to:
  - Energy unit RRP
  - Electric power demand
  - Air conditioning load

Schematic of GHP/EHP Hybrid System.



World first!*
Unified refrigerant cycle in GHP and EHP

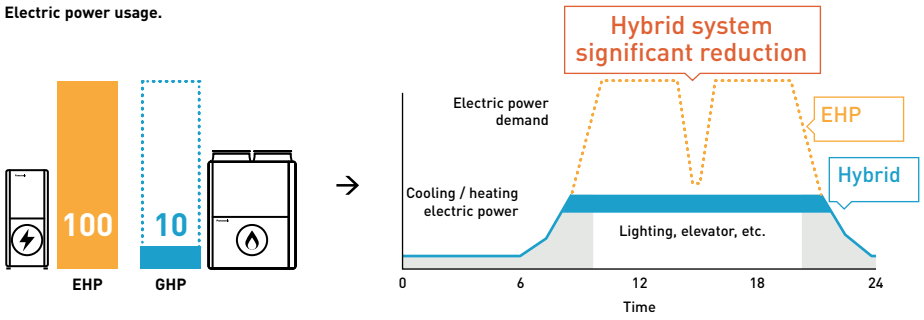
* Introduced as a world first technology by Panasonic in April 2016.

1 Peak cut of electricity consumption

Electrical peak demand is significantly reduced thanks to GHP system consuming less than 10% of electricity of EHP system.

* Image of Hotel project.

Electric power usage.

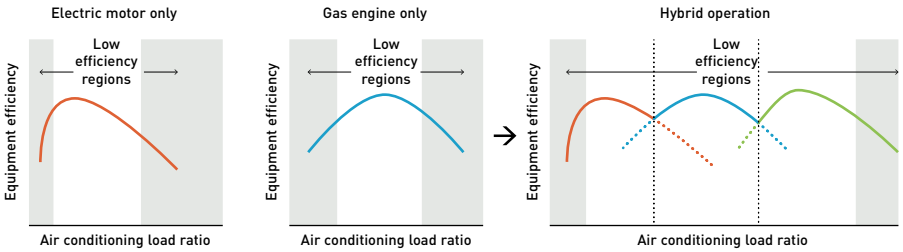


2 Optimal control to maximize energy saving

Switching the operation between GHP and EHP system on the basis of usage, energy demand, part load.

* Specification is tentative.

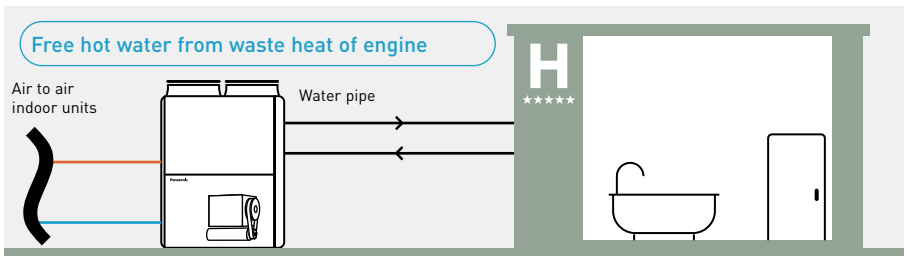
Optional control method.



3 Free hot water production by GHP system

Hot water is effectively produced from waste heat of engine.

* Specification is tentative.



GHP/EHP Hybrid System

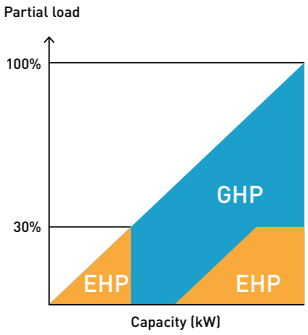
Panasonic's reliable ECO G / ECOi technology provides energy savings, utilising the advantages of both gas and electricity

The hybrid system can offer intelligent operation logic for better economy and efficiency by taking the best of ECO G. A heating and cooling system operating in a similar way to a hybrid car.

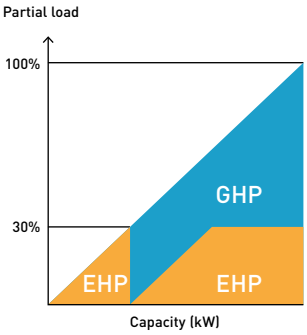
How to smartly operate a GHP and EHP system depending on your needs

4 different mode settings are available with the intelligent controller. Switch the operation between GHP and EHP or operating both units together to maximize the effect for different requirements such as economy and efficiency.

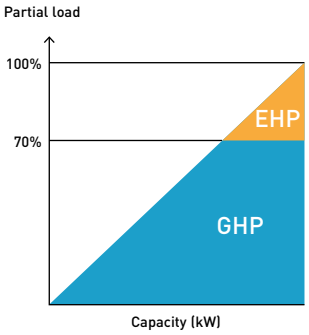
Economy mode



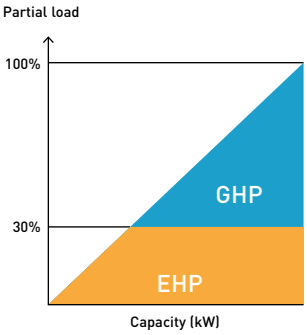
Efficiency mode



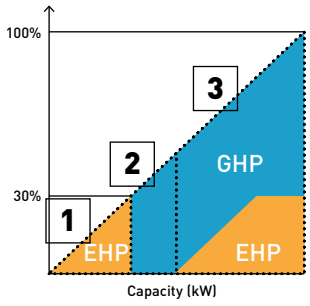
GHP priority mode



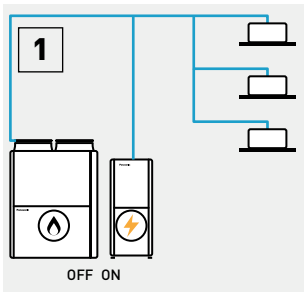
EHP priority mode



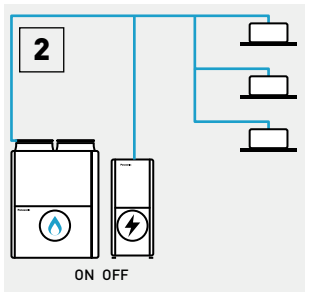
Optimal control example: Economy mode



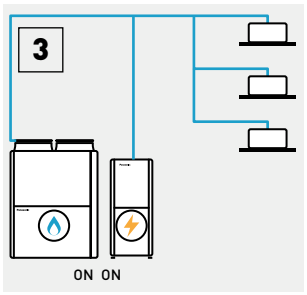
Only EHP



Only GHP



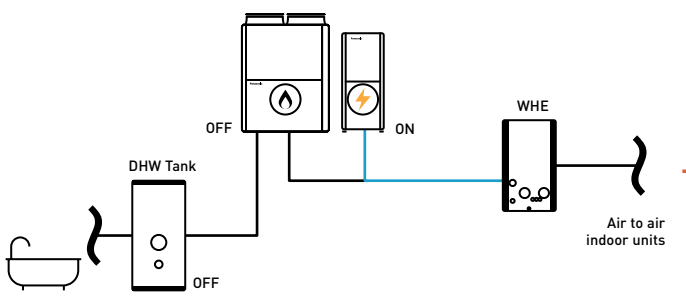
Balanced operation



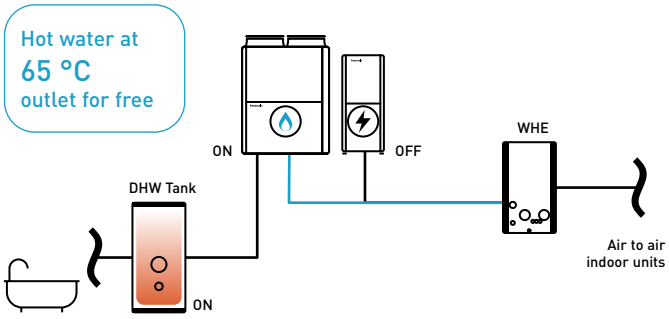
DHW priority mode in Hybryd + WHE System

When DHW is required during cooling operation by EHP, EHP is automatically turned "OFF" and GHP is turned "ON" to produce DHW for free.

High efficiency mode.



DHW priority mode.



2-Pipe Hybrid GHP/EHP

· Extended lifespan with intelligent energy management. The goal is for the EHP and GHP to work at optimal speeds
· Low energy cost
· Low emissions

			Hybrid GHP	Hybrid EHP
HP			**20 HP**	**10 HP**
Outdoor unit			**U-20GES3E5**	**U-10MES2E8**
Power supply	Voltage	V	220 - 230 - 240	380 - 400 - 415
	Phase		Single phase	Three phase
	Frequency	Hz	50	50
Cooling capacity		kW	56,0	28,0
$\eta_{s,c}$ (LOT21)			**211,8%**	**275,4%**
Current		A	5,18	10,70 / 10,20 / 9,80
Input power		kW	1,12	6,41
Hot water in cooling mode (at 65 °C outlet)		kW	26,20	—
Gas consumption cooling		kW	52,10	—
Heating capacity		kW	63,0	31,5
$\eta_{s,h}$ (LOT21)			**143,2%**	**167,6%**
Current		A	4,79	11,10 / 10,50 / 10,10
Input power		kW	1,05	6,62
Gas consumption heating	Standard	kW	51,10	—
Starting current		A	30	1
Air flow		m^3/min	420	224
Sound pressure	Normal mode	dB(A)	58	56
Sound power	Normal mode	dB(A)	80	77
Dimension	H x W x D	mm	2255 x 1650 x 1000	1842 x 770 x 1000
Net weight		kg	765	210
Piping diameter [1]	Liquid	Inch (mm)	5/8 (15,88)	3/8 (9,52)
	Gas	Inch (mm)	1 1/8 (28,58)	7/8 (22,22)
	Balance	Inch (mm)	1/4 (6,35)	1/4 (6,35)
Drain heater		W	40	—
Refrigerant (R410A) / CO_2 Eq.		kg / T	11,05 / 23,0724	5,60 / 11,6928
Maximum allowable indoor / outdoor capacity ratio %			50 ~ 130	50 ~ 130
Operating range	Cool Min ~ Max	°C	-10 ~ +43	-10 ~ +43
	Heat Min ~ Max	°C	-21 ~ +18	-21 ~ +18

1) Please refer service manual when the maximum piping length exceeds 90 meters (equivalent length).

Technical focus

· 4 settings (economy, efficiency, GHP priority mode, EHP priority mode)
· DHW energy recovery 26,2 kW (at 65 °C) by engine waste heat
· Unified refrigerant cycle in GHP and EHP for easy installation
· DHW priority mode with WHE system
· Connection of up to 48 indoor units

HIGH COP | GAS POWERED ECO G | 5 YEARS COMPRESSOR WARRANTY

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
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Water heat exchanger for hydronic applications

Panasonic water heat exchanger available with ECOi (VRF) and ECO G (gas driven VRF) systems. Those are suitable not only for new projects but also for the old chiller systems to be replaced.

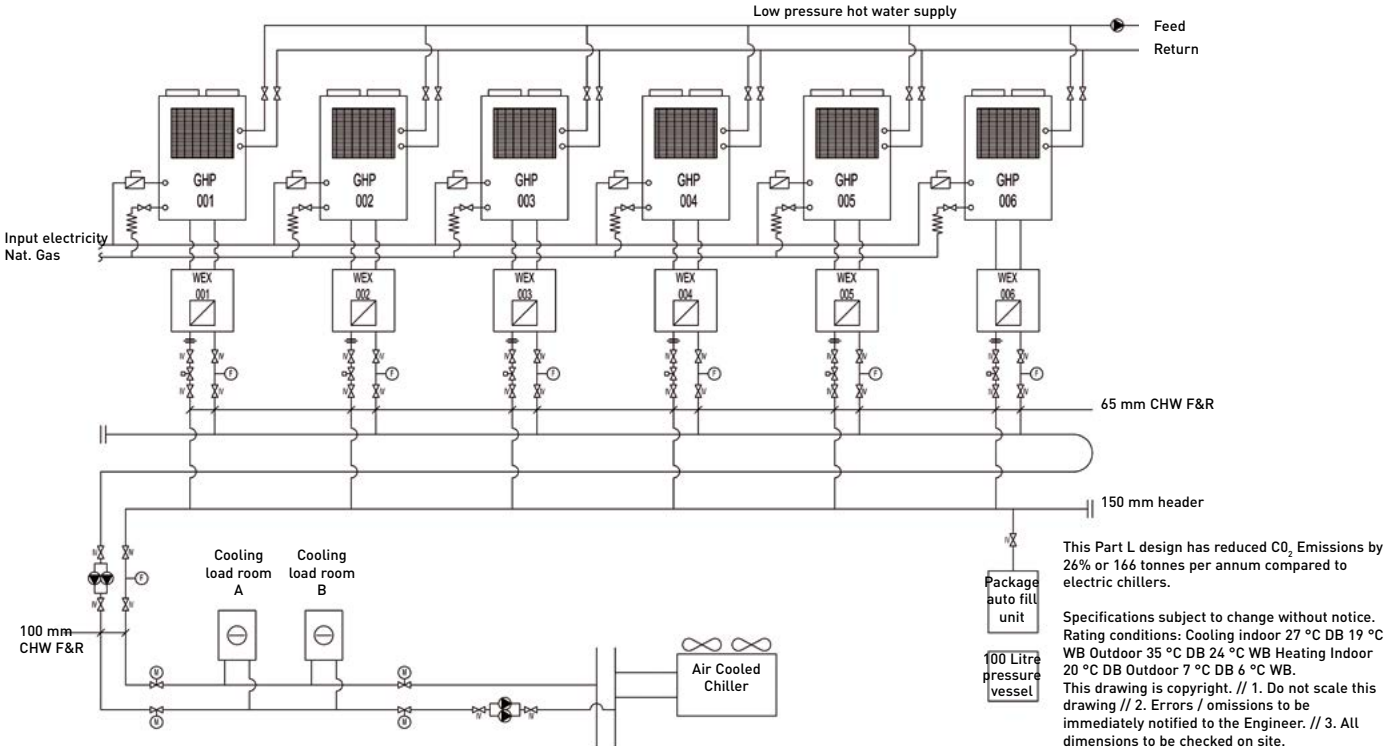
Chiller replacement. Chilled water supply to fan coils

Chiller replacement.
When some old chillers needed replacing at the end of their operational lifetime, ECO Gs with water heat exchangers enabled the project to be carried out in stages whilst still utilising the existing water pipe work and fan coils. This enabled the project to be delivered on time, to a restricted budget and avoided all issues regarding refrigerant in confined spaces.

Connection to 'close control' computer equipment.

Computer room applications.

When all available electrical power needed to be utilised for the IT equipment for a leading international bank, the cooling load of over 450 kW had to be powered by gas. The outdoor units were connected via water heat exchangers to cooling coils inside the 'close control' units thereby maintaining a conditioned environment for temperature and humidity. By utilising the hot water function over 100 kW of hot water are supplied to the building and therefore the additional benefit of considerable CO_2 savings is ensured.



This Part L design has reduced CO_2 Emissions by 26% or 166 tonnes per annum compared to electric chillers.

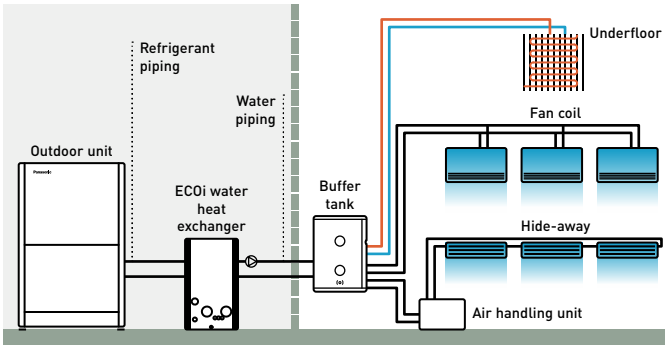
Specifications subject to change without notice. Rating conditions: Cooling indoor 27 °C DB 19 °C WB Outdoor 35 °C DB 24 °C WB Heating Indoor 20 °C DB Outdoor 7 °C DB 6 °C WB.

ECOi water heat exchanger

Electrical VRF with water heat exchanger

· With this easy to install water heat exchanger unit, you can now cover projects up to 51 kW hot water demand or 44 kW on chilled application in an efficient and cost effective way

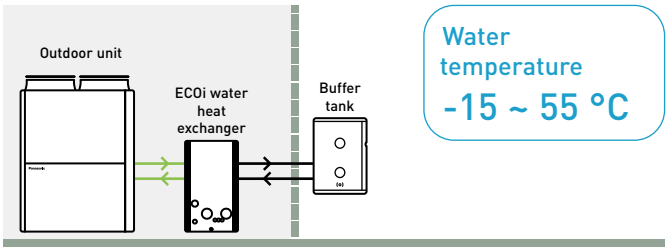
System example.



A buffer tank of minimum 280 l for 28 kW and 500 l for 50 kW is always needed.

Example of Hotel renewal of existing chiller and boiler system with Panasonic ECO G and Aquarea mixed solution

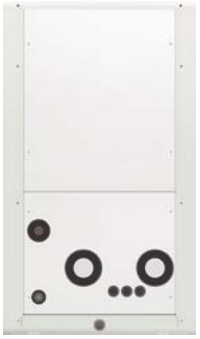
ECO G and Aquarea are the smart solution for renewal Chiller / Boiler applications with annual running cost savings around 13600€.



ECOi 2-Pipe with water heat exchanger for chilled and hot water production

Water heat exchanger (WHE) for hydronic applications.
WHE for ECOi systems controlled by a CZ-RTC5B timer remote control.
Energy-efficient capacity control with superior external static pressure is now ready.
Availability of easy vertical stacking allows installations in a limited space (up to 3 units)*.
Stainless steel plate heat exchanger with anti-freeze protection control.
Change over between heating and cooling operation.

* Stacking kit (PAW-3WSK) is necessary.



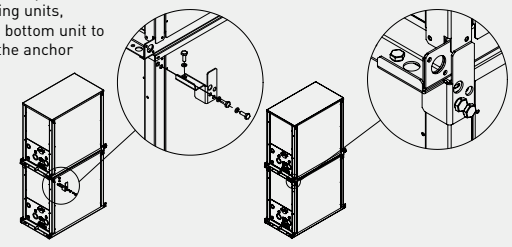
Hydrokit with A class water pump			**PAW-250WP5G1**	**PAW-500WP5G1**
Hydrokit without pump			**PAW-250W5G1**	**PAW-500W5G1**
Cooling capacity (A 35 °C, W 7 °C)		kW	25,0	50,0
Heating capacity		kW	28,0	56,0
Heating capacity (A +7 °C, W 45 °C)		kW	28,0	56,0
COP (A +7 °C, W 45 °C)		W/W	2,97	3,10
Energy efficiency class at 35 °C [1]			**A++**	**A++**
$\eta_{s,h}$ (LOT1) [2]			**152,0%**	**152,0%**
Dimension	H x W x D	mm	1000 x 575 x 1110	1000 x 575 x 1110
Net weight		kg	135 (140 with pump)	155 (165 with pump)
Water pipe connector			Rp2 Female thread (50A)	Rp2 Female thread (50A)
Heating water flow (ΔT=5 K. 35 °C)		m^3/h	5,16	10,32
Electric backup heater		kW	Not equipped	Not equipped
Flow switch			Equipped	Equipped
Water filter			Equipped	Equipped
Input power with A class water pump / without pump		kW	0,329 / 0,024	0,574 / 0,024
Maximum current with A class water pump / without pump		A	1,43 / 0,10	2,50 / 0,10
Outdoor unit			**U-10ME2E8**	**U-20ME2E8**
Sound pressure		dB(A)	56	60
Dimension	H x W x D	mm	1842 x 770 x 1000	1842 x 1540 x 1000
Net weight		kg	210	375
Piping diameter	Liquid	Inch (mm)	3/8 (9,52)	5/8 (15,88)
	Gas	Inch (mm)	7/8 (22,22)	1-1/8 (28,58)
Pipe length range / Pipe length for nominal capacity		m	170 / 7,5	170 / 7,5
Elevation difference (in / out)		m	50 (OU above) 35 (OU below)	50 (OU above) 35 (OU below)
Pre-charged pipe length / Additional gas amount (R410A)		m / g/m	0 < / Refer to manual	0 < / Refer to manual
Refrigerant (R410A) / CO_2 Eq.		kg	5,6 (need additional gas amount at site)	9,5 (need additional gas amount at site)
Operating range	Heat Min ~ Max	°C	-11 ~ +15 [3]	-11 ~ +15 [3]
Water outlet temperature range	Cool Min ~ Max	°C	+5 ~ +15	+5 ~ +15
	Heat Min ~ Max	°C	+35 ~ +45	+35 ~ +45

1) Unit efficiency energy level: Scale from A+++ to D. 2) Seasonal space cooling / heating energy efficiency following COMMISSION REGULATION (EU) 813/2013. 3) With accessory low temperature kit -25 ~ +15 °C. Available only as a spare part.

Performance calculation in agreement with Eurovent. Sound pressure measured at 1 m from the outdoor unit and at 1,5 m height.

Accessories	
PAW-3WSK	Stacking kit for vertically stacking up to 3 WHE (4 pieces per Kit)

Stacking kit PAW-3WSK.
It is possible to stack up to 3 units. When stacking units, always anchor the bottom unit to the ground using the anchor holes.



Technical focus

- Heating, cooling and DHW
- A class water pump included (only in P model)
- Flexible modularity from 25 kW
- Better partial load vs standard chiller system
- Compatible with all centralized controllers
- Maximum distance between outdoor unit and WHE: 170 m
- Maximum hot water outlet temperature: 45 °C
- Minimum chilled water outlet temperature: 5 °C
- Outdoor temperature range in heating mode: -11 °C to +15 °C (with low temperature kit -25 °C*)

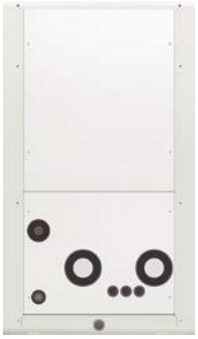
* Available as a spare part.

INVERTER+ 5 YEARS COMPRESSOR WARRANTY

ECO G with water heat exchanger for chilled and hot water production

Water heat exchanger (WHE) for hydronic applications.
WHE for ECO G system controlled by a timer remote control CZ-RTC5B.
Energy-efficient capacity control is now ready.
Availability of easy vertical stacking allows installations in a limited space (up to 3 units)*.
Stainless steel plate heat exchanger with anti-freeze protection control.
Change over between heating and cooling operation.

* Stacking kit (PAW-3WSK) is necessary.



Hydrokit with A class water pump			**PAW-500WP5G1**	**PAW-710WP5G1**
Hydrokit without pump			**PAW-500W5G1**	**PAW-710W5G1**
Cooling capacity		kW	—	—
Cooling capacity (A +35 °C, outlet W 7 °C, inlet W 12 °C)		kW	50,0	67,0
EER (A +35 °C, outlet W 7 °C, inlet W 12 °C)		W/W	0,78	0,89
Heating capacity		kW	60,0	80,0
Heating capacity (A +7 °C, W 35 °C)		kW	60,9	81,2
COP (A +7 °C, W 35 °C)		W/W	1,15	1,18
Heating capacity (A +7 °C, W 45 °C)		kW	60,0	80,0
COP (A +7 °C, W 45 °C)		W/W	1,02	1,04
Heating capacity (A -7 °C, W 35 °C)		kW	48,2	50,8
COP (A -7 °C, W 35 °C)		W/W	0,80	0,80
Heating capacity (A -15 °C, W 35 °C)		kW	46,3	50,0
COP (A -15 °C, W 35 °C)		W/W	0,80	0,80
Refrigeration load Pdesign		kW	48,0	—
Energy efficiency class at 35 °C [1]			**A+**	**—**
$\eta_{s,h}$ (LOT1) [2]			**130,0%**	**128,0%**
Dimension	H x W x D	mm	1000 x 575 x 1110	1000 x 575 x 1110
Net weight		kg	155 (165 with pump)	160 (175 with pump)
Water pipe connector			Rp2 Female thread (50A)	Rp2 Female thread (50A)
Heating water flow (ΔT=5 K. 35 °C)		m^3/h	10,32	13,76
Electric backup heater		kW	Not equipped	Not equipped
Flow switch			Equipped	Equipped
Water filter			Equipped	Equipped
Input power with A class water pump / without pump		kW	0,574 / 0,024	0,824 / 0,024
Maximum current with A class water pump / without pump		A	2,50 / 0,10	3,60 / 0,10
Outdoor unit			**U-20GE3E5**	**U-30GE3E5**
Sound power	Normal / Silent	dB(A)	80 / 77	84 / 81
Dimension	H x W x D	mm	2255 x 1650 x 1000	2255 x 2026 x 1000
Net weight		kg	765	880
Piping diameter	Liquid	Inch (mm)	5/8 (15,88)	3/4 (19,05)
	Gas	Inch (mm)	1-1/8 (28,58)	1-1/4 (31,75)
Pipe length range / Pipe length for nominal capacity		m	170 / 7	170 / 7
Elevation difference (in / out)		m	50 (OU above) 35 (OU below)	50 (OU above) 35 (OU below)
Refrigerant (R410A) / CO_2 Eq.		kg / T	11,50 / 24,00	11,50 / 24,00
Operating range	Heat Min ~ Max	°C	-21 ~ +24 (until outlet temperature 45)	-21 ~ +24 (until outlet temperature 45)
Water outlet temperature range	Cool Min ~ Max	°C	-15 ~ +15	-15 ~ +15
	Heat Min ~ Max	°C	+35 ~ +55	+35 ~ +55

1) Unit efficiency energy level: Scale from A+++ to D. 2) ErP test data. Seasonal space cooling / heating energy efficiency following COMMISSION REGULATION (EU) 813/2013.

Performance calculation in agreement with Eurovent. Sound pressure measured at 1 m from the outdoor unit and at 1,5 m height.

Accessories	
PAW-3WSK	Stacking kit for vertically stacking up to 3 WHE (4 pieces per Kit)

Technical focus

- Heating, cooling and DHW
- A class water pump included (only in P model)
- Installation up to 80 kW
- Free DHW from waste heat of engine
- Compatible with all centralized controllers
- Maximum distance between outdoor unit and WHE: 170 m
- Hot water outlet temperatures from 35 °C to 55 °C
- Chilled water outlet temperatures from -15 °C to +15 °C
- Minimum outdoor temperature in heating mode: -21 °C

GAS POWERED ECO G

5 YEARS COMPRESSOR WARRANTY

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

Leak detection and automatic Pump Down for R410A refrigerant

Pump Down Systems to detect refrigerant leaks, that offers complete assurance and safety protection. It's an ideal solution for hotels, offices and public buildings where the strict safety of end users and workers is required.

The system monitors refrigerant leakage continually and provides a warning, preventing major refrigerant loss and potential damage to the installation's efficiency. The system can reduce potential refrigerant loss by up to 90%.

As well as ensuring safe and reliable operation, Panasonic's Pump Down system contributes towards BREEAM POL1 points and enables compliance with current EN 378 standards, covering applications where refrigeration concentration levels exceed practical safety limits of 0,44 kg/m^3.

Basic Pump Down function:
- Leak detection
- Activate Pump Down process
- Collect refrigerant within receiver tank
- Close valves to isolate refrigerant

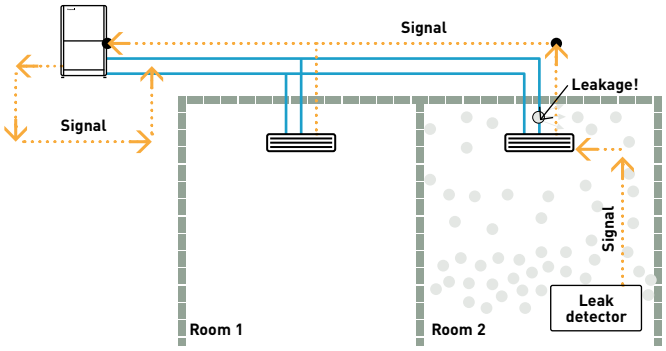
Technical focus:
- Compatible with Mini ECOi / ECOi EX / ECO G* Series with R410A refrigerant
- A receiver kit included as standard
- Includes updated controller
- Connection in two ways:
  1 | With local room leakage sensors
  2 | Using innovative algorithm
- R22 renewal possible

* For connection to GHP, additional components required dependent on configuration. Please contact your local Panasonic representative for details.

The Pump Down systems are ideal for hotels, offices and public buildings where safety of building occupants is a must.

Direct leak detection method: the safest solution for small rooms

The leak detector is connected directly to the indoor unit and the Pump Down system is directly connected to the outdoor unit PCB. The Pump Down system will activate when a leak is detected in the room and initiate a refrigerant reclaim operation immediately. This immediate reaction, and large refrigerant storage capacity, offers very high levels of safety for end users, building occupants, as well as being environmentally friendly.
No additional communication panels or software is required. This option should be implemented in any area that is not compliant with BS EN 378.



Indirect leak detection method: Unique PLC algorithm to determine refrigerant leakage

Pressure and temperature sensors constantly monitor the high / low pressure and discharge of the condensing unit to protect against potential leakage in areas not covered by leak detectors.
The innovative algorithm is able to detect leakage of R410A based on abnormal changes in the following conditions, high and low pressure, and compressor discharge temperature.
Once initiated via either direct or indirect detection, the unit will immediately close the liquid / discharge actuating ball valves, close the alarm terminals on the Pump Down PCB allowing an alarm to be raised at any nominated location.
Reclaim of the refrigerant is via the suction line to the heat exchanger(s) of the outdoor unit(s), with any surplus refrigerant collected in the 30 l receiver tank. Once fully pumped down the suction line is closed and the unit awaits a 'Reset' and 'Recharge' command.
Thanks to the simple installation and control, shown in Fig 1, Panasonic's ECOi Pump Down system can provide dramatic reduction in capital cost and installation time when compared to a standalone leak detection system, shown in Fig 2.

Fig 1: Panasonic's Pump Down system.

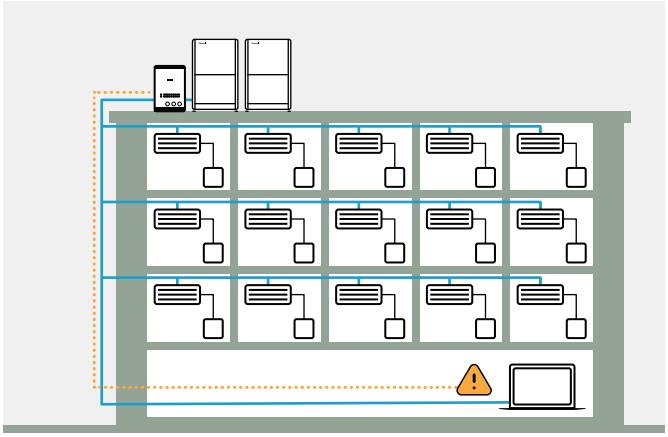
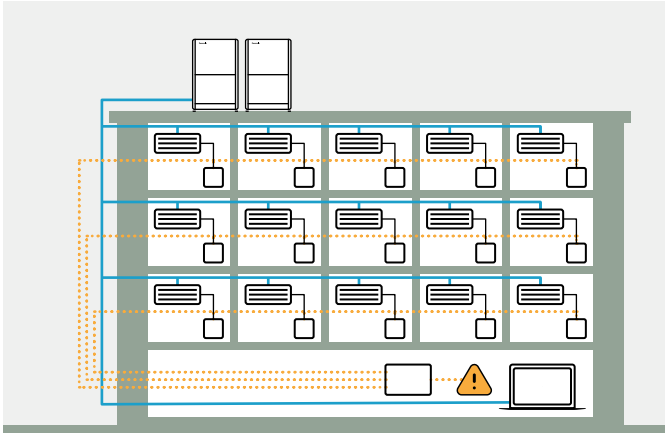


Fig 2: Standalone leak detection system.



Quick and simple installation

The unit contains actuating ball valves, a 30 L storage vessel and PLC all housed in an IP54 rated encasement. Terminals in front of the unit allow easy wiring to the alarm terminal, high / low pressure transducers and discharge temperature sensor(s) of the condensing unit(s).

Reference	Description
PAW-PUD2W-1R	Pump Down system (2 way) for 1 outdoor unit
PAW-PUD2W-2R	Pump Down system (2 way) for 2 outdoor units
PAW-PUD2W-3R*	Pump Down system (2 way) for 3 outdoor units
PAW-PUD3W-1R	Pump Down system (3 way) for 1 outdoor unit
PAW-PUD3W-2R	Pump Down system (3 way) for 2 outdoor units
PAW-PUD3W-3R*	Pump Down system (3 way) for 3 outdoor units

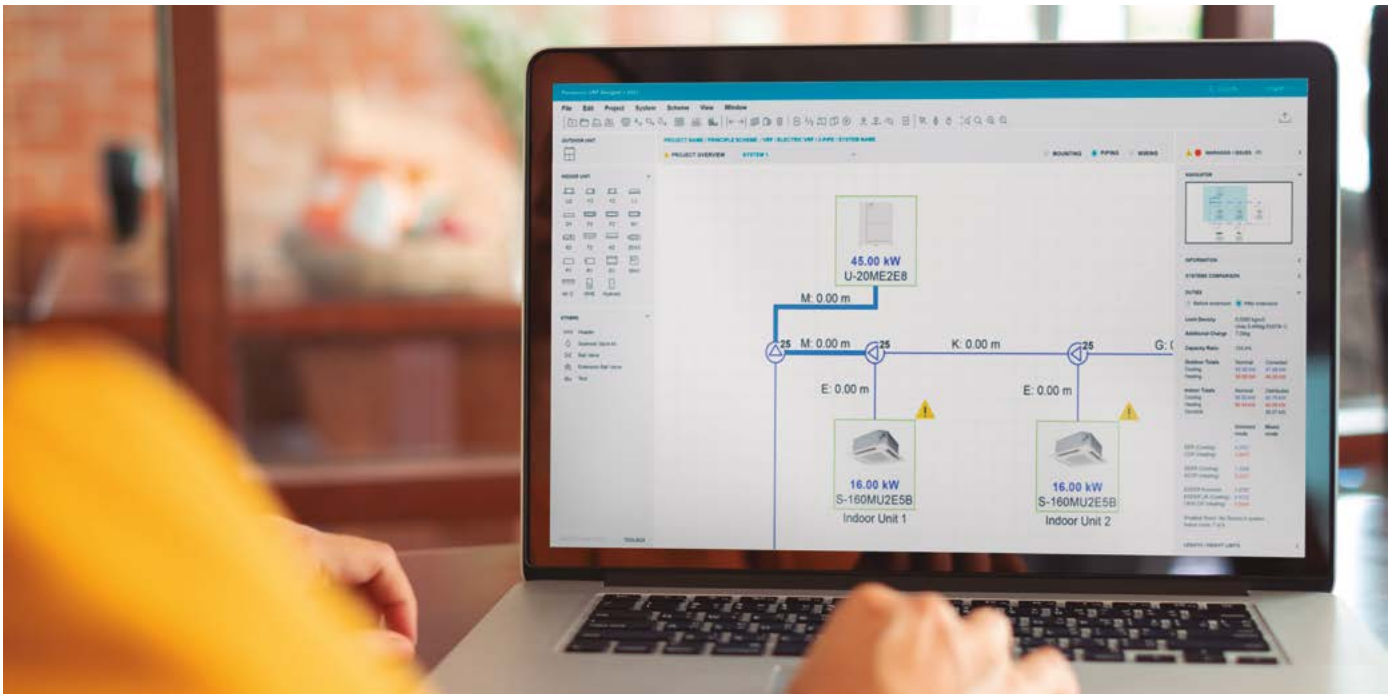
* Special order requiring the longer lead time than usual. For the detailed information, please contact an authorized Panasonic dealer.

New Panasonic DX PRO Designer

Leading software for architects, designers, and consultants, specializing in the design of commercial DX heating and cooling systems.

New 2023

Panasonic DX PRO DESIGNER



Cloud based solution: Access from anywhere 24/7/365, collaborative work with your team and the software is consistently updated to the latest version.

Cloud based tool.

Design on building floor drawing.

Auto piping and wiring diagram.

Performance calculation.

Comprehensive project report.

Floor drawing image import.

DX PRO Designer offers improved user experience and useful functions for the heating and cooling experts

- Seasonal performance calculation in accordance with ERP directive and EN14825 standard
- Designing heating and cooling systems for floor-level building design
- Automatic piping and wiring function
- Limit density check function in accordance with IEC 60335-2-40 / EN 378
- Comprehensive project report available
- Multi language supports

The software performs seasonal performance calculations, considering on-site conditions.

Download the comprehensive project report.

Let's try out the new DX PRO Designer*

* Panasonic PRO Club account is required.

The video for detailed information is ready!

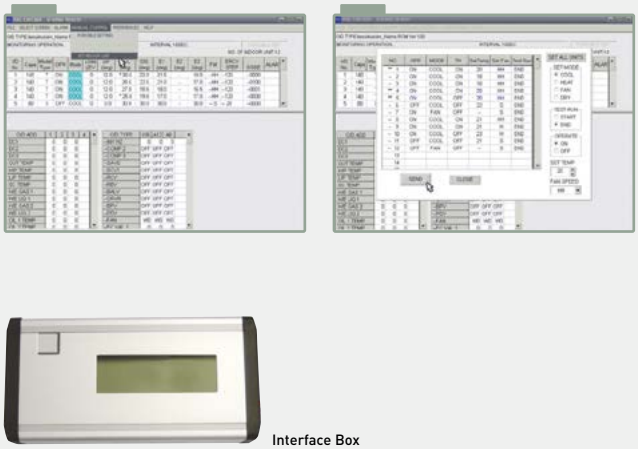
Panasonic VRF service checker

Available to installers and commissioning companies, the VRF service checker is a communication interface to Panasonic VRF systems. This easy to manage tool checks all parameters of the system.

The VRF service checker.

- Connect anywhere on the S-Link for ECOi and Mini ECOi
- Search the S-Link to validate systems that are connected
- Monitor all indoor and outdoor units simultaneously on 1 screen
- Monitor all Temperature data, Pressure data, Valve position, and alarm status
- Data can be viewed in Graph or tabular display
- Controlling the indoor unit ON / OFF, MODE, SET POINT, FAN, and TEST mode
- Switch between various systems on the same communication S-Link (ECOi only)
- Monitor and record at a set interval
- Record and review the data at a later date
- Update Panasonic system software via ROM flash writer

The Panasonic VRF service checker is available from your local service partner.



Interface Box

R22 Renewal

Panasonic's advanced technology enables the system to work with previously installed pipe work by managing the working pressure within the system down to R22 (33 bar) levels, this ensures the system works safely and efficiently without loss of capacity.

The new equipment can offer increased COP / EER by using state of the art Inverter compressor and heat exchanger technology.
Having contacted your Panasonic supplier regarding pipe work restrictions, and gained approval to use the Panasonic Renewal System, there are three main tests that have to be carried out to ensure that the system can be used effectively. Firstly a thorough inspection of the pipe work must be carried out and any damage must be repaired. Secondly an oil test must be performed to ensure that the system has not been subject to a compressor burnout during its lifetime. Lastly a VRF Renewal Kit (CZ-SLK2) must be installed within the pipe work to ensure that the system is cleaned and free of oil remnants.

ECOi and ECO G systems indoor units range

Page	Indoor units	1,5 kW	2,2 kW	2,8 kW	3,6 kW	4,5 kW	5,6 kW
P. 313	U2 type 4 way 90x90 cassette · R32 / R410A		 S-22MU2E5BN	 S-28MU2E5BN	 S-36MU2E5BN	 S-45MU2E5BN	 S-56MU2E5BN
P. 314	Y3 type 4 way 60x60 cassette · R32 / R410A	 S-15MY3E	 S-22MY3E	 S-28MY3E	 S-36MY3E	 S-45MY3E	 S-56MY3E
P. 315	L1 type 2 way cassette · R410A		 S-22ML1E5	 S-28ML1E5	 S-36ML1E5	 S-45ML1E5	 S- 56ML1E5
P. 316	D1 type 1 way cassette · R410A			 S-28MD1E5	 S-36MD1E5	 S-45MD1E5	 S-56MD1E5
P. 317	F3 type variable static pressure adaptive duct · R32 / R410A	 S-15MF3E5BN S-15MF3E5AN	 S-22MF3E5BN S-22MF3E5AN	 S-28MF3E5BN S-28MF3E5AN	 S-36MF3E5BN S-36MF3E5AN	 S-45MF3E5BN S-45MF3E5AN	 S-56MF3E5BN S-56MF3E5AN
P. 318	M1 type slim variable static pressure hide-away · R32 / R410A	 S-15MM1E5B	 S-22MM1E5B	 S-28MM1E5B	 S-36MM1E5B	 S-45MM1E5B	 S-56MM1E5B
P. 319	E2 type high static pressure hide-away · R410A						
P. 320	T2 type ceiling · R410A				 S-36MT2E5A	 S-45MT2E5A	 S-56MT2E5A
P. 321	K2 type wall-mounted · R32 / R410A	S-15MK2E5B	S-22MK2E5B	S-28MK2E5B	S-36MK2E5B	S-45MK2E5B	S-56MK2E5B
P. 322	G1 type floor console · R410A		S-22MG1E5N	S-28MG1E5N	S-36MG1E5N	S-45MG1E5N	S-56MG1E5N
P. 323	P1 type floor-standing · R410A		S-22MP1E5	S-28MP1E5	S-36MP1E5	S-45MP1E5	S-56MP1E5
P. 324	R1 type concealed floor-standing · R410A		S-22MR1E5	S-28MR1E5	S-36MR1E5	S-45MR1E5	S-56MR1E5
P. 325	Hydrokit for ECOi, water at 45 °C · R410A						
P. 330	NEW energy recovery ventilation with DX coil - HRPT Series · R32 / R410A		PAW-HRPT40HX PAW-HRPT40 (2,5 kW)				PAW-HRPT80HX PAW-HRPT80 (5 kW)
P. 331	Heat recovery with DX coil - ZDX Series · R410A			PAW-500ZDX3N (3 kW)		PAW-800ZDX3N (5,1 kW)	PAW-01KZDX3N (5,8 kW)

OPTIONAL UNITS ON VENTILATION SECTION

6,0 kW	7,3 kW	9,0 kW	10,6 kW	11,2 kW	14,0 kW	16,0 kW	22,4 kW	28,0 kW
 S-60MU2E5BN	 S-73MU2E5BN	 S-90MU2E5BN		 S-112MU2E5BN	 S-140MU2E5BN	 S-160MU2E5BN		
	 S-73ML1E5							
	 S-73MD1E5							
 S-60MF3E5BN S-60MF3E5AN	 S-73MF3E5BN S-73MF3E5AN	 S-90MF3E5BN S-90MF3E5AN		 S-112MF3E5BN S-112MF3E5AN	 S-140MF3E5BN S-140MF3E5AN	 S-160MF3E5BN S-160MF3E5AN		
							 S-224ME2E5	 S-280ME2E5
	 S-73MT2E5A		 S-106MT2E5A		 S-140MT2E5A			
	S-73MK2E5B		S-106MK2E5B					
	 S-71MP1E5							
	 S-71MR1E5							
		S-80MW1E5			S-125MW1E5			
	 PAW-HRPT120HX PAW-HRPT120 (7 kW)		 PAW-HRPT160HX PAW-HRPT160 (10 kW)	 PAW-HRPT200HX PAW-HRPT200 (12,5 kW)				

4 way 90x90 cassette with nanoe X Generator Mark 3

Large capacity VRF. Trusted power and high efficiency. These Cassettes offer upgraded nanoe™ X technology and Econavi as accessories for making application space more comfortable and efficient.

Thanks to advances in design and technology such as the high performance turbo fan which is more efficient and silent, nanoe™ X technology, and the floor temperature and humidity sensor (Econavi) for more control, the Panasonic U2 type 4 way 90x90 cassette offers greater comfort.

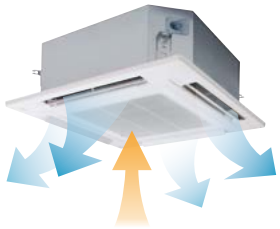
The nanoe™ X performance varies depending on the room size, environment and usage and it may take several hours to reach the full effect. nanoe™ X is not medical device, local regulations on building design and sanitary recommendations must be followed.

Always fresh and clean air with nanoe™ X

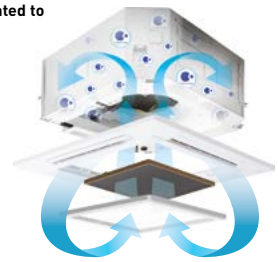
The 4 way 90x90 cassette with nanoe™ X, when tested, has shown to inhibit hazardous substances by 92%, when compared to natural reduction*.
In addition to the 7 effects of nanoe™ X, the indoor unit can also be cleaned with a short operation of nanoe™ X + dry mode.

* Controllers (CZ-RTC5B or CZ-RTC6/BL/BLW) are required.

After cooling/drying operation, the inside of the indoor unit is automatically dried and nanoe™ X is activated to suppress mould growth.



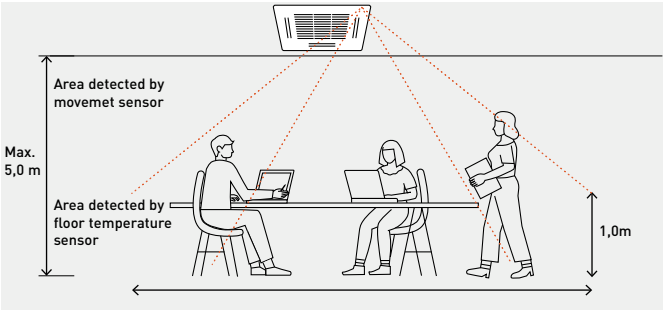
Operates the fan to discharge internal humidity.



Operate the fan to circulate nanoe™ X internally.

Optional Econavi intelligent sensor

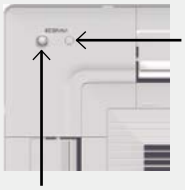
Human activity sensor and floor temperature sensor can reduce waste energy, by optimising air conditioner operation.



Advanced Econavi functions.

2 sensors (movement and floor temperature) can provide a reduction in wasted energy by means of effective control. The floor temperature can be detected with a ceiling height of up to 5 m.

Econavi exclusive panel. Optional (CZ-KPU3AW)



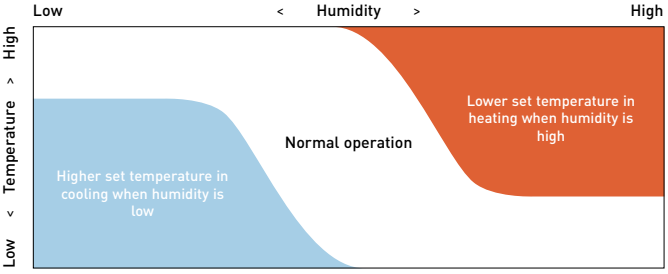
Floor temperature sensor.
This sensor detects average floor temperature and operates circulation if floor temperature is low.

Movement sensor.
This sensor detects the amount of human activity, and operates effectively.

Wired remote controller CZ-RTC5B or CZ-RTC6/BL is required.

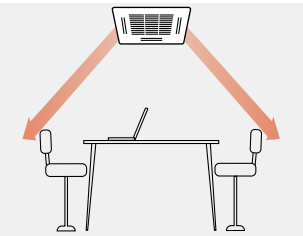
Humidity sensor.

A humidity sensor positioned in the air inlet provides comfort and saves energy based on temperature and humidity.

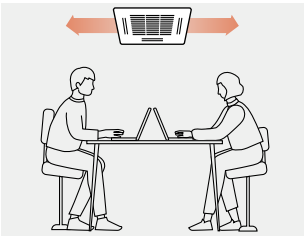


Group control, circulation function.

Circulating operation is activated when a room is unoccupied to evenly distribute air and minimize thermal stratification in both heating and cooling operation.



Circulation by detecting no movement (10 minutes).



Indirect air flow by detecting movement.

U2 type 4 way 90x90 cassette · R32 / R410A

The 4 way 90x90 cassettes with integrated nanoe X Generator Mark 3 and design panel.

A modern flat panel design blends into any space. These cassettes provide high energy saving, comfort and better indoor air quality that satisfy customers.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

nanoe™ X as a standard.

Indoor unit. S-***MU2E5BN			22	28	36	45	56	60	73	90	112	140	160
Cooling capacity		kW	2,2	2,8	3,6	4,5	5,6	6,0	7,3	9,0	11,2	14,0	16,0
Input power		W	20,00	20,00	20,00	20,00	25,00	35,00	40,00	40,00	95,00	95,00	105,00
Current		A	0,21	0,21	0,21	0,21	0,23	0,33	0,36	0,38	0,74	0,74	0,82
Heating capacity		kW	2,5	3,2	4,2	5,0	6,3	7,1	8,0	10,0	14,0	16,0	18,0
Input power		W	20,00	20,00	20,00	20,00	25,00	35,00	40,00	40,00	90,00	90,00	100,00
Current		A	0,20	0,20	0,20	0,20	0,22	0,32	0,35	0,37	0,72	0,72	0,80
Fan type			Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan
nanoe X Generator			Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3
Air flow	Hi/ Med/ Lo	m^3/min	12,8/12,1/ 11,5	12,8/12,1/ 11,5	14,5/13,0/ 11,5	15,5/13,0/ 11,5	16,5/13,5/ 11,5	21,0/16,0/ 13,0	22,5/16,0/ 13,0	23,0/18,5/ 14,0	36,0/26,0/ 20,0	36,0/26,0/ 20,0	37,0/28,0/ 24,0
Sound pressure	Hi/ Med/ Lo	dB(A)	30/29/28	30/29/28	30/29/28	31/29/28	32/30/28	36/32/29	37/32/29	38/35/32	45/39/35	45/39/35	46/40/38
Sound power	Hi/ Med/ Lo	dB(A)	45/44/43	45/44/43	45/44/43	46/44/43	47/45/43	51/47/44	52/47/44	53/50/47	60/54/50	60/54/50	61/55/53
Dimension (H x W x D)	Indoor	mm	256 x 840 x 840	256 x 840 x 840	256 x 840 x 840	256 x 840 x 840	256 x 840 x 840	256 x 840 x 840	256 x 840 x 840	256 x 840 x 840	319 x 840 x 840	319 x 840 x 840	319 x 840 x 840
	Panel	mm	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950	33,5 x 950 x 950
Net weight (Panel)		kg	19 (5)	19 (5)	19 (5)	19 (5)	19 (5)	20 (5)	20 (5)	20 (5)	25 (5)	25 (5)	25 (5)
Piping diameter R32 model	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)
Piping diameter R410A model	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52) [1]	3/8 (9,52) [1]	3/8 (9,52) [1]	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88) [1]	5/8 (15,88) [1]	5/8 (15,88) [1]	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)

1) When the piping diameter is (liquid) Ø1/4 (6,35) - (gas) Ø1/2 (12,70), connect the liquid socket tube (Ø1/4 (6,35) - Ø3/8 (9,52)) to the liquid tubing side indoor unit and connect the gas socket tube (Ø1/2 (12,70) - Ø5/8 (15,88)) to the gas tubing side indoor unit. * Above values are in the case of nanoe™ X OFF.

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3 + CZ-RWRU3W	Infrared remote controller and receiver
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black

Accessories	
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-KPU3W	Standard panel
CZ-KPU3AW	Econavi exclusive panel
CZ-CENSC1	Econavi energy saving sensor
CZ-FDU3+CZ-ATU2	Fresh air-intake kit
CZ-CGLSC1	Panasonic R32 refrigerant leak detector

Technical focus

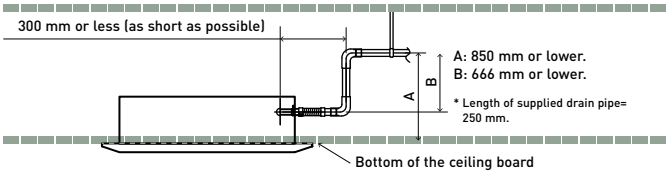
- High performance turbo fan
- Lower noise in low fan operation
- Ceiling height up to 5,0 m
- Industry leading lightweight design
- Econavi: Temperature, humidity and activity sensor
- nanoe™ X (Generator Mark 3: 48 trillion hydroxyl radicals/sec) as standard for better indoor air quality, indoor unit internal cleaning with nanoe™ X and dry operation
- Powerful drain pump gives 850 mm lift
- Fresh air knockout
- Branch duct connection
- High volume fresh air input with optional air-intake plenum and chamber (CZ-FDU3+CZ-ATU2)

Panel design

Flat design, well-matched with interior aesthetic.
4-way individual flap control.

The drain pipe can be raised to a maximum height of 850 mm from the bottom of the ceiling

Integrated drain pump allows a drain height of 850 mm making the installation much easier.



28% ECONAVI · nanoe X · SELF-DIAGNOSING · AUTOMATIC FAN · HUMIDITY CONTROL DRY · AUTO-FLAP CONTROL · AUTOMATIC RESTART · AIR SWEEP · BUILT-IN DRAIN PUMP · OPTIONAL WI-FI · BMS CONNECTIVITY

ECONAVI and INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

Y3 type 4 way 60x60 cassette · R32 / R410A

Mini cassette with a modern panel design is available in VRF range.

The Y3 type not only perfectly matches with 600 x 600 mm ceiling grids but also provides the additional benefits of nanoe™ X, for better indoor air quality.

Panel.
CZ-KPY4

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

nanoe™ X as a standard.

Indoor unit			S-15MY3E	S-22MY3E	S-28MY3E	S-36MY3E	S-45MY3E	S-56MY3E
Cooling capacity		kW	1,5	2,2	2,8	3,6	4,5	5,6
Input power		W	19,00	20,00	21,00	22,00	30,00	42,00
Current		A	0,24	0,24	0,25	0,26	0,34	0,43
Heating capacity		kW	1,7	2,5	3,2	4,2	5,0	6,3
Input power		W	17,00	18,00	19,00	20,00	28,00	40,00
Current		A	0,21	0,21	0,22	0,23	0,31	0,40
Fan type			Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan
nanoe X Generator			Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3
Air flow	Cool (Hi/Med/Lo)	m^3/min	8,5/7,0/6,0	8,7/7,0/6,0	9,0/7,5/6,0	9,5/7,8/6,0	11,5/9,0/6,5	13,5/10,5/8,0
	Heat (Hi/Med/Lo)	m^3/min	8,5/7,0/6,0	8,7/7,0/6,0	9,0/7,5/6,0	9,5/7,8/6,0	11,5/9,0/6,5	13,5/10,5/8,0
Sound pressure	Hi/Med/Lo	dB(A)	33/30/28	33/30/28	34/30/28	35/31/28	39/34/30	42/37/33
Sound power	Hi/Med/Lo	dB(A)	48/45/43	48/45/43	49/45/43	50/46/43	54/49/45	57/52/48
Dimension (H x W x D) [1]	Indoor	mm	243 x 575 x 575	243 x 575 x 575	243 x 575 x 575	243 x 575 x 575	243 x 575 x 575	243 x 575 x 575
	Panel	mm	30 x 625 x 625	30 x 625 x 625	30 x 625 x 625	30 x 625 x 625	30 x 625 x 625	30 x 625 x 625
Net weight		kg	17,8 (15 + 2,8)	17,8 (15 + 2,8)	17,8 (15 + 2,8)	17,8 (15 + 2,8)	17,8 (15 + 2,8)	17,8 (15 + 2,8)
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)

1) Unit height is 230 mm, but need 243 mm height in ceiling space for its installation.

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3 + CZ-RWRY3	Infrared remote controller and receiver
PAW-RE2C4-M0D-WH	Room controller for hotel rooms, white

Accessories	
PAW-RE2C4-M0D-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-CENSC1	Econavi energy saving sensor
CZ-CGLSC1	Panasonic R32 refrigerant leak detector
CZ-KPY4	Panel for 4 way 60x60 cassette

Technical focus

- Built-in drain pump
- DC drain pump and float switch to reduce the noise
- nanoe™ X (Generator Mark 3: 48 trillion hydroxyl radicals/sec) as standard for better indoor air quality
- Indoor unit internal cleaning with nanoe™ X plus dry operation

Compact and stylish design

- Required ceiling depth of only 250 mm [1]
- Exposed area is only 30 mm

1) Installation dimension.

Individual flap control

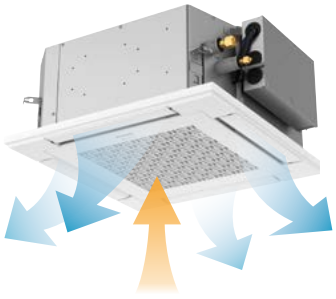
Better control of the air flow with 4 motors, providing individual flap control.
Perfect air distribution without direct airflow, to reduce the feeling of cold drafts.

Internal cleaning function

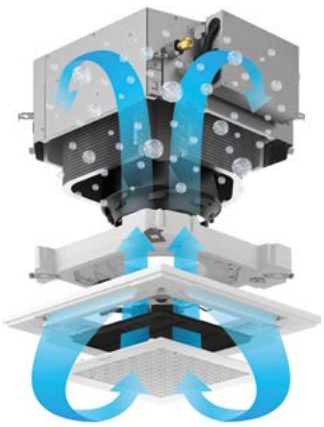
When cooling or dry operation stopped, internal drying and nanoe™ X circulation airflow is activated in order to suppress the mould proliferation inside the unit (airflow passage, fan, heat exchanger)*.

* Depending on the installation environment or operating hours, mould proliferation or inhabitation of mould growth will be changed.

After cooling/drying operation, the inside of the indoor unit is automatically dried and nanoe™ X is activated to suppress mould growth.



Operates the fan to discharge internal humidity.



Operate the fan to circulate nanoe™ X internally.

28% ECONAVI · nanoe™X · SELF-DIAGNOSING · AUTOMATIC FAN · HUMIDITY CONTROL DRY · AUTO-FLAP CONTROL · AUTOMATIC RESTART · AIR SWEEP · BUILT-IN DRAIN PUMP · OPTIONAL WI-FI · BMS CONNECTIVITY

ECONAVI and INTERNET CONTROL: Optional.

L1 type 2 way cassette · R410A

Slim, compact and lightweight units.
Remarkable size and weight reductions have been achieved by improvement of the design around the fan, the weight of all models now just 30 kg.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit			S-22ML1E5	S-28ML1E5	S-36ML1E5	S-45ML1E5	S-56ML1E5	S-73ML1E5
Cooling capacity		kW	2,2	2,8	3,6	4,5	5,6	7,3
Input power		W	90,00	92,00	93,00	97,00	97,00	145,00
Current		A	0,45	0,45	0,45	0,45	0,45	0,65
Heating capacity		kW	2,5	3,2	4,2	5,0	6,3	8,0
Input power		W	58,00	60,00	61,00	65,00	65,00	109,00
Current		A	0,29	0,29	0,29	0,29	0,29	0,48
Fan type			Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
Air flow	Hi/Med/Lo	m^3/min	8,0/7,0/6,0	9,0/8,0/7,0	9,7/8,7/7,7	11,0/9,0/8,0	11,0/9,0/8,0	19,0/16,0/14,0
Sound pressure	Hi/Med/Lo	dB(A)	30/27/24	33/29/26	34/31/28	35/33/29	35/33/29	38/35/33
Dimension (H x W x D)	Indoor	mm	350 x 840 x 600	350 x 840 x 600	350 x 840 x 600	350 x 840 x 600	350 x 840 x 600	350 x 1140 x 600
	Panel	mm	8 x 1060 x 680	8 x 1060 x 680	8 x 1060 x 680	8 x 1060 x 680	8 x 1060 x 680	8 x 1360 x 680
Net weight (Panel)		kg	26 (8)	26 (8)	26 (8)	26 (8)	26 (8)	26 (8)
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88)

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3 + CZ-RWRL3	Infrared remote controller and receiver

Accessories	
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-02KPL2	Panel for S-22 to S-56 models
CZ-03KPL2	Panel for S-73 model

Technical focus

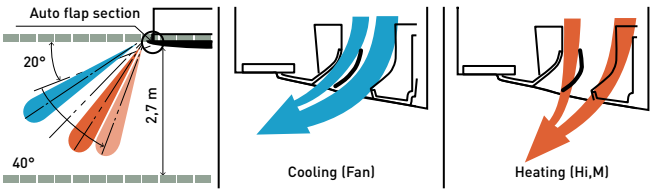
· Air flow and distribution is automatically altered depending on the operational mode of the unit
· Drain pump provides up to 500 mm lift height
· Simplified maintenance

Simplified maintenance

The drain pan is equipped with site wiring and can be removed. The fan case has a split construction, and the fan motor can be removed easily when the lower case is removed.

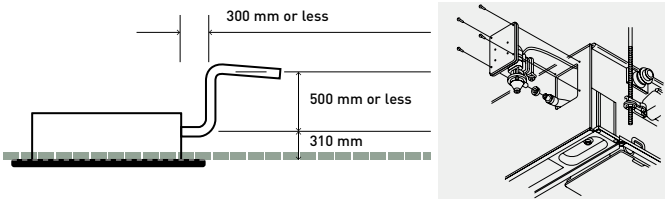
Auto flap control

Air flow and distribution is automatically altered depending on the operational mode of the unit.



Drain pump provides up to 500 mm lift height

Maintenance of the drain pump is possible from two sides, from the left side (piping side) and from the inside of the unit.



SELF-DIAGNOSING | AUTOMATIC FAN | HUMIDITY CONTROL DRY | AUTO-FLAP CONTROL | AUTOMATIC RESTART | AIR SWEEP | BUILT-IN DRAIN PUMP | OPTIONAL WI-FI | BMS CONNECTIVITY

INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

D1 type 1 way cassette · R410A

Designed for installation within the ceiling void, the D1 range of slimline 1 way blow cassettes feature powerful yet quiet fans for installation of up to 4,2 m.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit			S-28MD1E5	S-36MD1E5	S-45MD1E5	S-56MD1E5	S-73MD1E5
Cooling capacity		kW	2,8	3,6	4,5	5,6	7,3
Input power		W	51,00	51,00	51,00	60,00	87,00
Current		A	0,39	0,39	0,39	0,46	0,70
Heating capacity		kW	3,2	4,2	5,0	6,3	8,0
Input power		W	40,00	40,00	40,00	48,00	76,00
Current		A	0,35	0,35	0,35	0,41	0,65
Fan type			Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
Air flow	Hi/Med/Lo	m³/min	12,0/10,0/9,0	12,0/10,0/9,0	12,0/11,0/10,0	13,0/11,5/10,0	18,0/15,0/13,0
Sound pressure	Hi/Med/Lo	dB(A)	36/34/33	36/34/33	36/35/34	38/36/34	45/40/36
Dimension (H x W x D)	Indoor	mm	200 x 1000 x 710	200 x 1000 x 710	200 x 1000 x 710	200 x 1000 x 710	200 x 1000 x 710
	Panel	mm	20 x 1230 x 800	20 x 1230 x 800	20 x 1230 x 800	20 x 1230 x 800	20 x 1230 x 800
Net weight (Panel)		kg	23,5 (7,5)	23,5 (7,5)	23,5 (7,5)	23,5 (7,5)	24,5 (7,5)
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88)

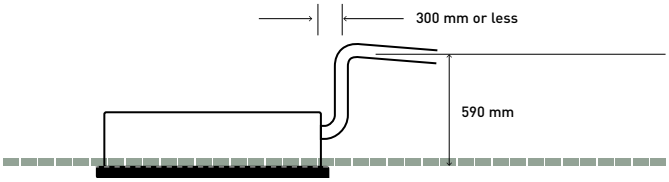
Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3 + CZ-RWRD3	Infrared remote controller and receiver

Accessories	
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-KPD2	Panel

Technical focus

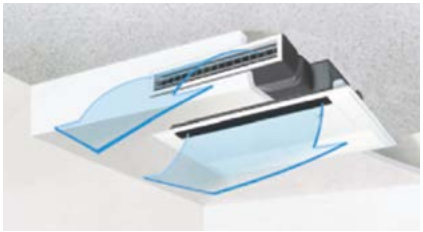
- Ultra-Slim
- Suitable for standard and high ceilings
- Built-in drain pump provides 590 mm lift
- Easy to install and maintain
- Hanging height can be easily adjusted
- Uses a DC fan motor to improve energy-efficiency

Drain height



With 2 types of air-blow systems, the units can be used in various ways

1. One-direction "down-blow" system.
Powerful one-direction "down-blow" system reaches the floor even from high ceilings (up to 4,2 m).



2. Two-direction ceiling-mounted system.
"Down-blow" and "front-blow" systems are combined in a ceiling-mounted unit to blow air over a wide area.

SELF-DIAGNOSING | AUTOMATIC FAN | HUMIDITY CONTROL DRY | AUTO-FLAP CONTROL | AUTOMATIC RESTART | AIR SWEEP | BUILT-IN DRAIN PUMP | OPTIONAL WI-FI | BMS CONNECTIVITY

INTERNET CONTROL: Optional.

F3 type variable static pressure adaptive duct · R32 / R410A

Design adaptive ducted F3 range.
2 installation possibilities (horizontal / vertical) with high ESP 150 Pa allows for flexible installation.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

nanoe™ X as a standard.

R32 unit. S-***MF3E5BN			15	22	28	36	45	56	60	73	90	112	140	160
R410A unit. S-***MF3E5AN														
Cooling capacity		kW	1,5	2,2	2,8	3,6	4,5	5,6	6,0	7,3	9,0	11,2	14,0	16,0
Input power		W	60,00	60,00	60,00	60,00	60,00	89,00	79,00	79,00	136,00	265,00	265,00	330,00
Current		A	0,45	0,45	0,45	0,45	0,45	0,63	0,52	0,52	0,90	1,76	1,76	2,14
Heating capacity		kW	1,7	2,5	3,2	4,2	5,0	6,3	7,1	8,0	10,0	12,5	16,0	18,0
Input power		W	60,00	60,00	60,00	60,00	60,00	89,00	79,00	79,00	136,00	265,00	265,00	330,00
Current		A	0,45	0,45	0,45	0,45	0,45	0,63	0,52	0,52	0,90	1,76	1,76	2,14
R32 leakage sensors [1]			2	2	2	2	2	2	2	2	2	2	2	2
Fan type			Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
nanoe X Generator			Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3	Mark 3
External static pressure		Pa	30 (10-150)	30 (10-150)	30 (10-150)	30 (10-150)	30 (10-150)	30 (10-150)	30 (10-150)	30 (10-150)	40 (10-150)	50 (10-150)	50 (10-150)	50 (10-150)
Air flow [2]	Hi/ Med/ Lo	m³/min	12,8/11,0/ 8,0	12,8/11,0/ 8,0	14,0/12,0/ 8,0	14,0/12,0/ 8,0	14,0/12,0/ 8,0	16,0/14,0/ 10,0	21,0/18,0/ 15,0	21,0/18,0/ 15,0	25,0/23,0/ 16,0	37,0/32,0/ 26,0	37,0/32,0/ 26,0	40,0/34,0/ 28,0
Sound pressure		dB(A)	31/28/20	31/28/20	31/28/20	31/28/20	31/28/20	35/32/24	31/28/23	31/28/23	35/33/25	41/36/32	41/36/32	43/37/33
Sound power		dB(A)	54/51/43	54/51/43	54/51/43	54/51/43	54/51/43	58/55/47	54/51/46	54/51/46	58/56/48	64/59/55	64/59/55	66/60/56
Dimension (H x W x D)		mm	250 x 800 x 730	250 x 800 x 730	250 x 800 x 730	250 x 800 x 730	250 x 800 x 730	250 x 800 x 730	250 x 1000 x 730	250 x 1000 x 730	250 x 1000 x 730	250 x 1400 x 730	250 x 1400 x 730	250 x 1400 x 730
Net weight		kg	26	26	26	26	26	26	31	31	31	40	40	40
Piping diameter R32 model	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)
Piping diameter R410A model	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)

1) Only available in the R32 version. 2) Value referred to standard settings at shipment (H curve 8, M curve 5, L curve 1).

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3 + CZ-RWRC3	Infrared remote controller and receiver
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white

Accessories	
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-CENSC1	Econavi energy saving sensor
PAW-APF800F	**NEW** BION air pollutant filter for MF3 15, 22, 28, 36, 45 and 56
PAW-APF1000F	**NEW** BION air pollutant filter for MF3 60 and 73
PAW-APF1400F	**NEW** BION air pollutant filter for MF3 90, 106, 112, 140 and 160

Technical focus

- 4 installation possibilities with horizontal and vertical mounting, plus selectable rear or bottom air inlet
- Industry leading low noise with super quiet operation, minimum 20 dB(A)
- Only 250 mm height and lightweight unit from, 26 to 40 kg
- Integrated Panasonic R32 refrigerant leak detectors [1]
- Improved drain pan suitable for both horizontal / vertical installation
- Drain pump included [2]
- nanoe™ X (Generator Mark 3: 48 trillion hydroxyl radicals/sec) as standard, effective even with duct connections up to 10 m with 3 x 90° bends [3]
- **New** BION air pollutant filter for certain types of pollutants, such as nitrogen dioxide (NO_2), nitrogen oxides (NO_x) and Ozone (O_3) (optional)

1) Only available in the R32 version. 2) For use with horizontal installation only. 3) Panasonic internal survey.

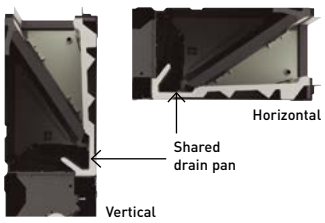
Vertical Installation

Vertical installation option. Variable external static pressure to support ducted installations with bends.

* Vertical installation requires additional settings on field, please check the installation manual.

Improved drain pan design

Drain pan is shared in both cases horizontal and vertical installation.
No need to modify the unit.



28% ECONAVI · nanoe™ X · FILTER INCLUDED · SELF-DIAGNOSING · AUTOMATIC FAN · HUMIDITY CONTROL DRY · AUTOMATIC RESTART · BUILT-IN DRAIN PUMP · OPTIONAL WI-FI · BMS CONNECTIVITY

ECONAVI and INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

M1 type slim variable static pressure hide-away concealed duct · R32 / R410A

The ultra slim M1 type is one of the leading products of its type in the industry.

With a depth of only 200 mm it provides greater flexibility and can be used in far more applications.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit			S-15MM1E5B	S-22MM1E5B	S-28MM1E5B	S-36MM1E5B	S-45MM1E5B	S-56MM1E5B
Cooling capacity		kW	1,5	2,2	2,8	3,6	4,5	5,6
Input power		W	36,00	36,00	40,00	42,00	49,00	64,00
Current		A	0,26	0,26	0,30	0,31	0,37	0,48
Heating capacity		kW	1,7	2,5	3,2	4,2	5,0	6,3
Input power		W	26,00	26,00	30,00	32,00	39,00	54,00
Current		A	0,23	0,23	0,27	0,28	0,34	0,45
Fan type			Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
Air flow	Hi/Med/Lo	m³/min	8,0/7,0/6,0	8,0/7,0/6,0	8,5/7,5/6,5	9,0/8,0/7,0	10,5/9,5/8,0	12,5/11,5/10,0
External static pressure		Pa	10 (30)	10 (30)	15 (30)	15 (40)	15 (40)	15 (40)
Sound pressure	Hi/Med/Lo [1]	dB(A)	28/27/25 (30/29/27)	28/27/25 (30/29/27)	30/29/27 (32/31/29)	32/30/28 (34/32/30)	34/32/30 (36/34/32)	35/33/31 (37/35/32)
Sound power	Hi/Med/Lo	dB(A)	43/42/40	43/42/40	45/44/42	47/45/43	49/47/45	50/48/46
Dimension	H x W x D	mm	200 x 750 x 640	200 x 750 x 640	200 x 750 x 640	200 x 750 x 640	200 x 750 x 640	200 x 750 x 640
Net weight		kg	19	19	19	19	19	19
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)

1) By DIP switches or by RC setting.

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3 + CZ-RWRC3	Infrared remote controller and receiver

Accessories	
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-CENSC1	Econavi energy saving sensor
CZ-CGLSC1	Panasonic R32 refrigerant leak detector

Technical focus

· Ultra-slim profile: 200 mm for all models
· DC fan motor greatly reduces power consumption
· Ideal for hotel application with very narrow false ceilings
· Easy maintenance and service by external electrical box
· Up to 40 Pa static pressure enables ductwork to be fitted
· Includes drain pump

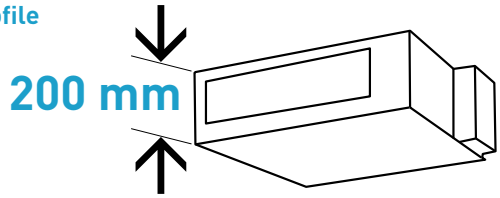
In addition, its high-efficiency and extremely quiet sound levels make it very popular with many users, including hotels and small offices.

Air outlet and inlet plenum

	Diameters	Air outlet plenum	Diameters	Air inlet plenum
22, 28 and 36	2 x Ø200	CZ-DUMPA22MMS2	2 x Ø200	CZ-DUMPA22MMR2
45 and 56	3 x Ø160	CZ-DUMPA45MMS3		

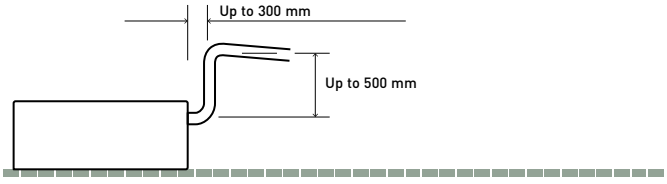
* Plenums installed with an R32 Mini ECOi system may only be used when no Panasonic R32 refrigerant leak detector is required. Please refer to technical data manual for refrigerant installation requirements.

Ultra-slim profile for all models



Drain pump with increased power!

By adoption of a high-lift drain pump, the drain piping can achieve up to 500 mm lift from the outlet port of the unit.



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ECONAVI and INTERNET CONTROL: Optional.

E2 type high static pressure hide-away · R410A

High pressure duct and 100% Fresh air duct function.

The E2 range of ducted units offers improved design flexibility for extended duct layouts as a result of their increased external static pressures whilst reducing energy consumption.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Type			100% Fresh air duct function (by using Kit for 100% fresh air)				High pressure duct			
Indoor unit			S-224ME2E5		S-280ME2E5		S-224ME2E5		S-280ME2E5	
			Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Capacity		kW	22,4	21,2	28,0	26,5	22,4	25,0	28,0	31,5
Input power		W	290,00	290,00	350,00	350,00	440,00	440,00	715,00	715,00
Current		A	1,85	1,85	2,20	2,20	2,45	2,45	3,95	3,95
Air flow	Hi/Med/Lo	m³/min	28,3/—/—		35,0/—/—		56,0/51,0/44,0		72,0/63,0/53,0	
External static pressure		Pa	200		200		140 (60 - 270) [1]		140 (72 - 270) [1]	
Sound pressure [2]	Hi/Med/Lo	dB(A)	43/—/—		44/—/—		45/43/41		49/47/43	
Sound power	Hi/Med/Lo	dB(A)	75/—/—		76/—/—		77/75/73		81/79/75	
Dimension	H x W x D	mm	479 x 1453 x 1205		479 x 1453 x 1205		479 x 1453 x 1205		479 x 1453 x 1205	
Net weight		kg	102		106		102		106	
Piping diameter	Liquid	Inch (mm)	3/8 (9,52)		3/8 (9,52)		3/8 (9,52)		3/8 (9,52)	
	Gas	Inch (mm)	3/4 (19,05)		7/8 (22,22)		3/4 (19,05)		7/8 (22,22)	

Rating Conditions for 100% Fresh air duct function: Cooling Outdoor 33 °C DB / 28 °C WB. Heating Outdoor 0 °C DB / -2,9 °C WB.
1) Available to select the setting by initial setup. 2) Values with 140 Pa setting. * No filter included. ** No compatible with 3-Pipe ECO G GF3.

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3 + CZ-RWRC3	Infrared remote controller and receiver

Accessories	
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-CENSC1	Econavi energy saving sensor

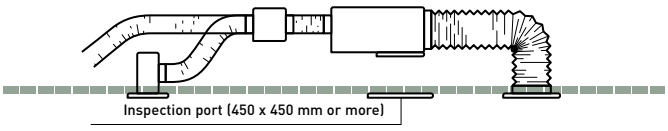
Technical focus

- No need of rap valves for standard operation
- 100% fresh air duct function*
- DC fan motor for more savings
- Complete flexibility for ductwork design
- Can be located wihtin a weatherproof housing for external installation
- Air OFF sensor avoids cold air dumping
- Configurable air temperature control

* Rap valves required, see 100% fresh air duct function below.

System example

An inspection port (450 x 450 mm or more) is required at the lower side of the indoor unit body (field supply).



100% fresh air duct function

The E2 duct with 100% fresh air duct function have exceptional discharge temperature.

	Discharge Range		
	Min	Max	Default
Cooling	15 °C	24 °C	18 °C
Heating	17 °C	45 °C	40 °C

Plenums

Air outlet plenum (suitable for rigid + flexible duct)		
	Number of exits with diameters	Model
S-224ME2E5	1 x 500 mm	CZ-TREMIESPW705
S-280ME2E5	1 x 500 mm	CZ-TREMIESPW706

Kit for 100% fresh air function

Kit for 2 way systems	
2x CZ-P160RVK2	Rap valve kit
2x CZ-CAPE2	3 way control PCB
CZ-P680BK2BM	Distribution joint kit
	1x remote controller

Kit for 3 way systems	
2x CZ-P160HR3	3 way valve kit
2x CZ-CAPE2	3 way control PCB
CZ-P680BH2BM	Distribution joint kit
	1x remote controller

ECONAVI and INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

T2 type ceiling · R410A

The T2 type ceiling mounted units feature a DC fan motor for increased efficiency and reduced operating sound levels.
All the units are the same height and depth for a uniform appearance in mixed installations, and feature a fresh air knockout for improved air quality.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit			S-36MT2E5A	S-45MT2E5A	S-56MT2E5A	S-73MT2E5A	S-106MT2E5A	S-140MT2E5A
Cooling capacity		kW	3,6	4,5	5,6	7,3	10,6	14,0
Input power		W	35,00	40,00	40,00	55,00	80,00	100,00
Current		A	0,36	0,38	0,38	0,44	0,67	0,79
Heating capacity		kW	4,2	5,0	6,3	8,0	11,4	16,0
Input power		W	35,00	40,00	40,00	55,00	80,00	100,00
Current		A	0,36	0,38	0,38	0,44	0,67	0,79
Fan type			Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
Air flow	Hi/Med/Lo	m³/min	14,0/12,0/10,5	15,0/12,5/10,5	15,0/12,5/10,5	21,0/18,0/15,5	30,0/25,0/23,0	32,0/28,0/24,0
Sound pressure	Hi/Med/Lo	dB(A)	36/32/30	37/33/30	37/33/30	39/35/33	42/37/36	46/40/37
Sound power	Hi/Med/Lo	dB(A)	54/50/48	55/51/48	55/51/48	57/53/51	60/55/54	62/58/55
Dimension	H x W x D	mm	235 x 960 x 690	235 x 960 x 690	235 x 960 x 690	235 x 1275 x 690	235 x 1590 x 690	235 x 1590 x 690
Net weight		kg	27	27	27	33	40	40
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52)	3/8 (9,52)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88)	5/8 (15,88)	5/8 (15,88)

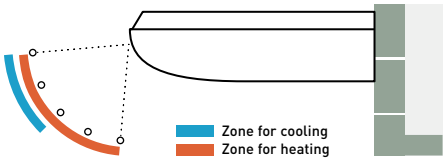
Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3 + CZ-RWRT3	Infrared remote controller and receiver

Accessories	
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-CENSC1	Econavi energy saving sensor

Technical focus

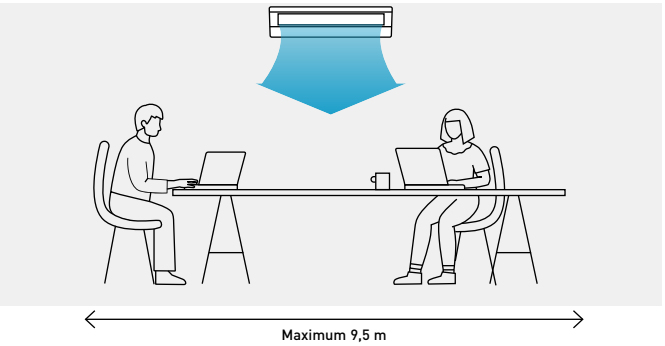
· Low sound levels
· All units just 235 mm high
· Large and wide air distribution
· Easy to install and maintain
· Fresh air knockout

Air distribution is altered depending on the operational mode



Further comfort improvement with air flow distribution

Horizontal air flow reaches maximum 9,5 m. This is ideal for wide rooms.
The wide air discharge opening expands the air flow to the left and right. The unpleasant feeling caused when the air flow directly hits the human body is prevented by the "Draft prevention position", which changes the swing width, increasing the degree of comfort.



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ECONAVI and INTERNET CONTROL: Optional.

K2 type wall-mounted · R32 / R410A

The wall-mounted unit has a stylish smooth panel that looks good and is easy to clean.

The unit is also smaller, lighter and substantially quieter than previous models making it ideal for small offices and other commercial applications.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit			S-15MK2E5B	S-22MK2E5B	S-28MK2E5B	S-36MK2E5B	S-45MK2E5B	S-56MK2E5B	S-73MK2E5B	S-106MK2E5B
Cooling capacity		kW	1,5	2,2	2,8	3,6	4,5	5,6	7,3	10,6
Input power		W	25,00	25,00	25,00	30,00	30,00	35,00	55,00	80,00
Current		A	0,20	0,21	0,23	0,25	0,32	0,35	0,51	0,70
Heating capacity		kW	1,7	2,5	3,2	4,2	5,0	6,3	8,0	11,4
Input power		W	25,00	25,00	25,00	30,00	30,00	35,00	55,00	80,00
Current		A	0,20	0,21	0,23	0,25	0,32	0,35	0,51	0,70
Fan type			Cross flow	Cross flow	Cross flow	Cross flow	Cross flow	Cross flow	Cross flow	Cross flow
Air flow	Cool (Hi/Med/Lo)	m³/min	7,9/7,4/6,5	9,0/7,5/6,5	9,5/8,3/6,5	10,9/9,0/6,5	14,5/12,5/10,0	16,0/14,0/12,0	19,5/17,0/14,0	21,5/18,5/15,0
	Heat (Hi/Med/Lo)	m³/min	9,0/7,7/6,8	9,2/8,3/6,8	9,7/8,5/6,8	11,2/9,5/6,8	14,5/12,5/10,0	16,0/14,0/12,0	19,5/17,0/14,0	21,5/18,5/15,0
Sound pressure	Hi/Med/Lo	dB(A)	34/32/29	36/33/29	37/34/29	40/36/29	38/35/33	40/37/35	47/44/40	49/46/42
Sound power	Hi/Med/Lo	dB(A)	49/47/44	51/48/44	52/49/44	55/51/44	53/50/48	55/52/50	62/59/55	64/61/57
Dimension	H x W x D	mm	290 x 870 x 214	290 x 870 x 214	290 x 870 x 214	290 x 870 x 214	302 x 1120 x 236	302 x 1120 x 236	302 x 1120 x 236	302 x 1120 x 236
Net weight		kg	9	9	9	9	13	13	14	14
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52) [1]	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88) [1]	5/8 (15,88)

1) When the piping diameter is (liquid) Ø1/4 (6,35) - (gas) Ø1/2 (12,70), connect the liquid socket tube (Ø1/4 (6,35) - Ø3/8 (9,52)) to the liquid tubing side indoor unit and connect the gas socket tube (Ø1/2 (12,70) - Ø5/8 (15,88)) to the gas tubing side indoor unit.

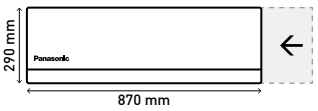
Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3	Infrared remote controller
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white

Accessories	
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-CENSC1	Econavi energy saving sensor
CZ-P56SVK2	External valve for model sizes 15 to 56
CZ-P160SVK2	External valve for model sizes 60 to 106
CZ-CGLSC1	Panasonic R32 refrigerant leak detector

Technical focus

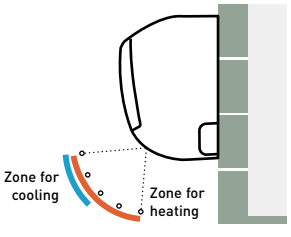
- Compact lightweight units for easy installation
- Quiet operation
- Smooth and durable design
- Piping outlet in six directions
- Air distribution is automatically altered depending on the operational mode

Lighter and smaller units



Compact and lightweight units make for easy installation. When the unit is turned OFF, the flap closes completely to prevent entry of dust into the unit and to keep the equipment clean.

Air distribution is automatically altered depending on the operational mode of the unit



Piping outlet in six directions

Piping outlet is possible in six directions of; right, right rear, right bottom, left, left rear and left bottom, making the installation work more flexible.

Quiet operation

These units are among the quietest in the industry, making them ideal for hotels and hospitals.

External valve (optional)

CZ-P56SVK2 (model sizes 15 to 56).
CZ-P160SVK2 (model sizes 60 [1] to 106).

1) When the piping diameter is liquid 1/4 (6,35) and gas 1/2 (12,70), use CZ-P56SVK2

28% ECONAVI · SELF-DIAGNOSING · AUTOMATIC FAN · HUMIDITY CONTROL DRY · AUTO-FLAP CONTROL · AUTOMATIC RESTART · AIR SWEEP · OPTIONAL WI-FI · BMS CONNECTIVITY

ECONAVI and INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

G1 type floor console · R410A

The stylish and compact unit profile, also used for residential market range, is easy to integrate into any design of building.

Compact and versatile, this system is capable of being installed in an area with limited space. It is a perfect solution for retrofit, replacing existing radiator panels.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

nanoe™ X as a standard.

Indoor unit			S-22MG1E5N	S-28MG1E5N	S-36MG1E5N	S-45MG1E5N	S-56MG1E5N
Cooling capacity		kW	2,2	2,8	3,6	4,5	5,6
Input power		W	20,00	20,00	22,00	28,00	31,00
Current		A	0,20	0,20	0,23	0,25	0,28
Heating capacity		kW	2,5	3,2	4,2	5,0	6,3
Input power		W	21,00	21,00	23,00	29,00	32,00
Current		A	0,20	0,20	0,24	0,26	0,28
Fan type			Cross flow	Cross flow	Cross flow	Cross flow	Cross flow
nanoe X Generator			Mark 1	Mark 1	Mark 1	Mark 1	Mark 1
Air flow	Cool (Hi/Med/Lo)	m³/min	9,2/7,5/6,0	9,2/7,5/6,0	9,7/8,2/6,0	10,5/9,0/6,5	12,0/9,5/6,5
	Heat (Hi/Med/Lo)	m³/min	9,7/8,0/6,5	9,7/8,0/6,5	10,2/8,7/6,5	11,0/9,5/7,0	12,5/10,0/7,0
Sound pressure	Hi/Med/Lo	dB(A)	38/34/29	38/34/29	39/35/29	42/37/30	44/38/30
Dimension	H x W x D	mm	600 x 750 x 207	600 x 750 x 207	600 x 750 x 207	600 x 750 x 207	600 x 750 x 207
Net weight		kg	14	14	14	14	14
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)

* Infrared receiver is integrated with the unit as standard.

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function
CZ-RWS3*	Infrared remote controller

Accessories	
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black
CZ-CENSC1	Econavi energy saving sensor

1 nanoe™ X: Bringing nature's balance indoors

Panasonic's nanoe™ X technology brings nature's detergent – hydroxyl radicals – indoors to help improve protection 24/7 against several types of pollutants can be inhibited such as certain types of bacteria, viruses, mould, allergens, pollen or hazardous substances.

2 Stylish and simple

- Clean and modern European design with slim depth
- Modern matt white color panel
- Washable air filter

The stylish and compact unit profile, also used for residential market range, is easy to integrate into any design of building.

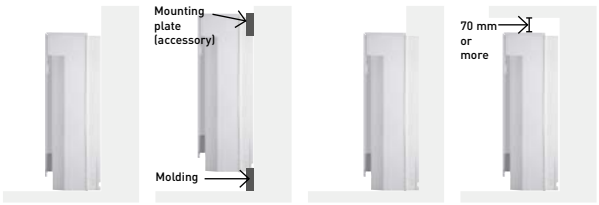
Dimension:
W x H x D = 750 x 600 x 207 mm

Weight:
14kg

3 Flexible easy installation

Four different mounting styles possible: exposed (floor or wall), semi-recessed and recessed.

Flexible installation with 4 different options.



4 Functions for comfort

- Double Air Flow direction to maximize comfort
- Self-cleaning function
- Compatible with Commercial Wi-Fi Adaptor for cloud control

Self-cleaning function.

- Self cleaning function can be pre-scheduled with remote controller, up to a maximum of 90 minutes following cooling / dry operation
- Air flow will not blow directly at occupants during self-cleaning

ECONAVI and INTERNET CONTROL: Optional.

P1 type floor-standing · R410A

The compact floor-standing P1 units are the ideal solution for providing perimeter air conditioning.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit			S-22MP1E5	S-28MP1E5	S-36MP1E5	S-45MP1E5	S-56MP1E5	S-71MP1E5
Cooling capacity		kW	2,2	2,8	3,6	4,5	5,6	7,1
Input power		W	56,00	56,00	85,00	126,00	126,00	160,00
Current		A	0,25	0,25	0,38	0,56	0,56	0,72
Heating capacity		kW	2,5	3,2	4,2	5,0	6,3	8,0
Input power		W	40,00	40,00	70,00	91,00	91,00	120,00
Current		A	0,18	0,18	0,31	0,41	0,41	0,54
Fan type			Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
Air flow	Hi/Med/Lo	m^3/min	7,0/6,0/5,0	7,0/6,0/5,0	9,0/7,0/6,0	12,0/9,0/8,0	15,0/13,0/11,0	17,0/14,0/12,0
External static pressure		Pa	15	15	15	15	15	15
Sound pressure	Hi/Med/Lo	dB(A)	33/30/28	33/30/28	39/35/29	38/35/31	39/36/31	41/38/35
Dimension	H x W x D	mm	615 x 1065 x 230	615 x 1065 x 230	615 x 1065 x 230	615 x 1380 x 230	615 x 1380 x 230	615 x 1380 x 230
Net weight		kg	29	29	29	39	39	39
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88)

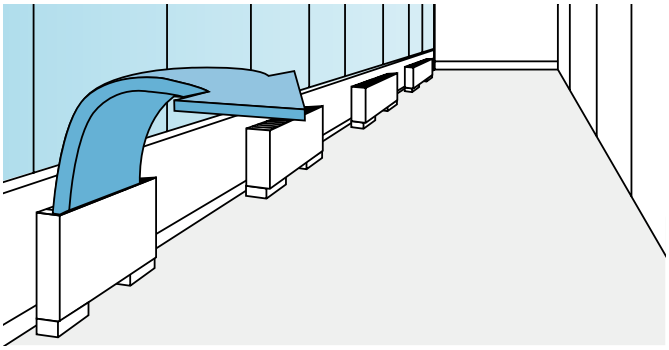
Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function

Accessories	
CZ-RWS3 + CZ-RWRC3	Infrared remote controller and receiver
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black

Technical focus

- Pipes can be connected to either side of the unit from the bottom or rear
- Easy to install
- Front panel opens fully for easy maintenance
- Removable air discharge grille gives flexible airflow
- Room for condensate pump

Effective perimeter handling



SELF-DIAGNOSING | AUTOMATIC FAN | HUMIDITY CONTROL DRY | AUTOMATIC RESTART | OPTIONAL WI-FI | BMS CONNECTIVITY

INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
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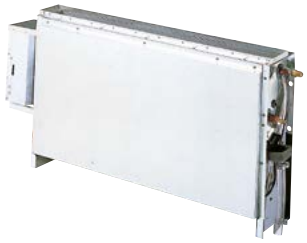
R1 type concealed floor-standing · R410A

At just 229 mm deep, the R1 unit can be easily concealed in perimeter areas to provide powerful and effective air conditioning.



COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit			S-22MR1E5	S-28MR1E5	S-36MR1E5	S-45MR1E5	S-56MR1E5	S-71MR1E5
Cooling capacity		kW	2,2	2,8	3,6	4,5	5,6	7,1
Input power		W	56,00	56,00	85,00	126,00	126,00	160,00
Current		A	0,25	0,25	0,38	0,56	0,56	0,72
Heating capacity		kW	2,5	3,2	4,2	5,0	6,3	8,0
Input power		W	40,00	40,00	70,00	91,00	91,00	120,00
Current		A	0,18	0,18	0,31	0,41	0,41	0,54
Fan type			Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
Air flow	Hi/Med/Lo	m³/min	7,0/6,0/5,0	7,0/6,0/5,0	9,0/7,0/6,0	12,0/9,0/8,0	15,0/13,0/11,0	17,0/14,0/12,0
External static pressure		Pa	15	15	15	15	15	15
Sound pressure	Hi/Med/Lo	dB(A)	33/30/28	33/30/28	39/35/29	38/35/31	39/36/31	41/38/35
Dimension	H x W x D	mm	616 x 904 x 229	616 x 904 x 229	616 x 904 x 229	616 x 1219 x 229	616 x 1219 x 229	616 x 1219 x 229
Net weight		kg	21	21	21	28	28	28
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	1/4 (6,35)	3/8 (9,52)
	Gas	Inch (mm)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	1/2 (12,70)	5/8 (15,88)

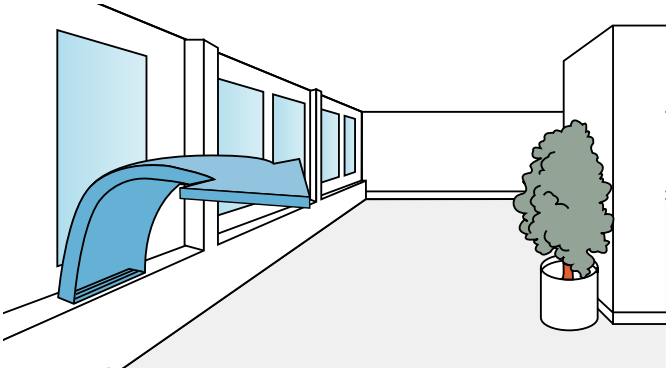
Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function

Accessories	
CZ-RWS3 + CZ-RWRC3	Infrared remote controller and receiver
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black

Technical focus

- Chassis unit for discreet installation
- Complete with removable filters
- Pipes can be connected to either side of the unit from the bottom or rear
- Easy to install

Perimeter air conditioning with high interior quality



SELF-DIAGNOSING | AUTOMATIC FAN | HUMIDITY CONTROL DRY | AUTOMATIC RESTART | OPTIONAL WI-FI | BMS CONNECTIVITY

INTERNET CONTROL: Optional.

Hydrokit for ECOi, water at 45 °C · R410A

Connect the Hydrokit to your VRF system, together with other indoor units.
Total system performs high energy efficiency through heat recovering operation, and it gives an advantage for sustainability related assessment methods, such as BREEAM in UK.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit				S-80MW1E5	S-125MW1E5
Power supply	Voltage		V	230	230
	Phase			Single phase	Single phase
	Frequency		Hz	50	50
Cooling capacity			kW	8,0	12,5
Heating capacity			kW	9,0	14,0
Maximum temperature			°C	~45/~65 [1]	~45/~65 [1]
Dimension	H x W x D		mm	892 x 502 x 353	892 x 502 x 353
Water pipe connector			Inch	R 1 ¼	R 1 ¼
Water pump (built-in)				DC motor (A class)	DC motor (A class)
Water flow rate	Cool		L/min	22,90	35,80
	Heat		L/min	25,80	40,10
Piping diameter	Liquid		Inch (mm)	3/8 (9,52)	3/8 (9,52)
	Gas		Inch (mm)	5/8 (15,88)	5/8 (15,88)
	Drain		mm	15 ~ 17 (inner size)	15 ~ 17 (inner size)
Operation range	Cool	Ambient	°C	+10 ~ +43	+10 ~ +43
		Water	°C	+5 ~ +20	+5 ~ +20
	Heat	Ambient	°C	-20 ~ +43	-20 ~ +43
		Water	°C	+25 ~ +45	+25 ~ +45
Connectable system				3-Pipe (heat recovery type) VRF System (system capable up to 48 HP)	
Maximum Indoor ratio (connectable hydrokit module capacity ratio)				Total indoor unit + Hydrokit capacity: up to 130% (** ~ **% vs total outdoor unit capacity)	

1) Maximum 45 °C by refrigerant circuit (heat pump cycle), over 45 °C is provided by electric heater operation.

Accessories	
CZ-RTC5B	Wired remote controller with Econavi function

Basic principle and advantage.

Hydrokit module provides hot water by using waste heat that is recovered from standard air-conditioning indoor unit in cooling mode.

Technical focus

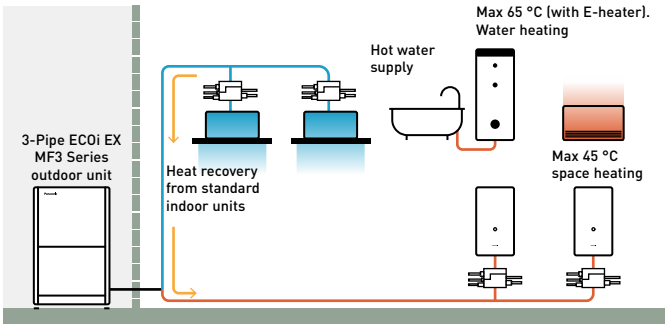
- Only with 3-Pipe ECOi EX MF3 Series outdoor units
- Remote controller CZ-RTC5B common use with DX coil indoor units PACi and ECOi

Hydrokit control function / CZ-RTC5B

- CZ-RTC5B can be used for hydrokit and also normal indoor unit. CZ-RTC5B checks the type of connected unit and switches between hydrokit and air conditioner display automatically
- Hydrokit mode (tank or air conditioning mode) is set during initial startup

Overview: hydromodule in VRF system

- Multiple hydromodule connection in same circuit is available
- The mode of each module can be individually set from either hot water or space heating / cooling (once set the units cannot operate in another mode, resetting will be required)
- 3-Pipe control solenoid valve kit is necessary for each indoor unit and hydromodule



* Cold water also available.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

NEW AHU connection kit MAH4M for ECOi 2-Pipe

Space-saving compact casing.
Direct Modbus communication without the need for an additional interface.
Accurate control with a pressure transducer.

New 2024

Built-in controller.

PAW-P+100MAH4M			6 HP	12 HP	16 HP
Cooling capacity	Nominal	kW	16,0	33,5	45,0
Heating capacity	Nominal	kW	17,0	37,5	50,0
Air flow	Min / Max	m³/h	1800 / 4400	2000 / 10000	3500 / 12000
Dimension	H x W x D	mm	300 x 400 x 150	300 x 400 x 150	300 x 400 x 150
Weight		kg	11	11	11
Pipe length range		m	10 ~ 100	10 ~ 100	10 ~ 100
Elevation difference (in / out)		m	10	10	10
Piping diameter ⩽ 90 m	Liquid	Inch (mm)	3/8 (9,52)	1/2 (12,70)	1/2 (12,70)
	Gas	Inch (mm)	5/8 (15,88)	1 (25,40)	1 1/8 (28,57)
Piping diameter > 90 m [1]	Liquid	Inch (mm)	—	5/8 (15,88)	5/8 (15,88)
	Gas	Inch (mm)	—	1 1/8 (28,57)	1 1/4 (31,75)

1) For R410A models only.

AHU connection kit / system combination

Cooling capacity		Mini VRF		2-Pipe VRF	AHU connection kit	EEV pack
		Mini ECOi LZ2 Series (R32)	Mini ECOi LE2 Series (R410A)	ECOi EX ME2 Series		
6 HP	16,0 kW	U-5LZ2E5(8) U-6LZ2E5(8)	U-5LE2E5(8) U-6LE2E5(8)	—	PAW-P+100MAH4M	PAW-P+116EEVPACK
12 HP	33,5 kW	U-8LZ2E8 U-10LZ2E8	U-8LE1E8 U-10LE1E8	U-8ME2E8 U-10ME2E8 U-12ME2E8	PAW-P+100MAH4M	PAW-P+133EEVPACK
16 HP	45,0 kW	—	—	U-14ME2E8 U-16ME2E8	PAW-P+100MAH4M	PAW-P+145EEVPACK

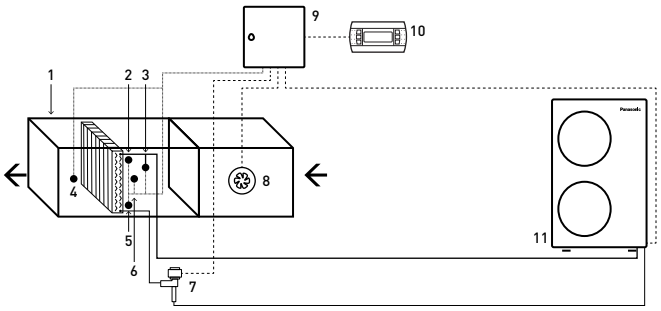
Accessories	
PAW-P+102SENSPACK	AHU connection kit sensor pack 1 (2 pcs of SENSOR PT1000 HT IP67 -50/250 CABLE 6 m PCK)
PAW-P+116EEVPACK	EEV pack 1 (1 pc of expansion valve ⩽ 16 kW (R410A / R32) and 1 pc of UNIPOLAR stator)
PAW-P+133EEVPACK	EEV pack 2 (1 pc of expansion valve ⩽ 33 kW (R410A / R32) and 1 pc of UNIPOLAR stator)

Accessories	
PAW-P+145EEVPACK	EEV pack 3 (1 pc of expansion valve ⩽ 45 kW (R410A / R32) and 1 pc of UNIPOLAR stator)
PAW-P+100PGNEPACK	Remote control pack (1 pc of PGNE 132 x 64 mm, mounting panel and 1 pc of cable L= 1,5 m, telephone connectors)

Technical focus

- Maximum capacity / system: 16 HP (45 kW*)
- Selectable expansion valve packs depending on the capacity
- DC 12 V outlet available without optional interface
- Maximum elevation difference indoor/outdoor unit: 10 m
- Elevation difference (indoor unit / indoor unit): 4 m
- In / out connection capacity ratio: 50~100%
- Maximum number of AHU connection kits: 1 unit
- Outdoor temperature range in heating: -20 ~ +15 °C
- Available temperature range for the suction air at AHU connection kit: cool: +18 ~ +32 °C / heat: +16 ~ +30 °C
- The system's set temperature can be selected either as the default setting discharge air temperature (supply room temperature) or the suction air set temperature (or room return air temperature)
- Accurate control with a pressure transducer
- Direct Modbus communication with a built-in Modbus S-Link interface
- Various technical parameters available with Modbus
- SG ready fulfilled. Demand input can be set Thermostat OFF or 40 – 200% by the user
- Defrost operation signal, compressor status ON / OFF output
- Display an error message concerning drain water overflow
- Connectable with S-Link system. Special care for electrical noise may be necessary depending on the on-site system
- Fan control signal output to manage the air flow (ON / OFF)
- Alarm status monitoring output

* Nominal cooling capacity.



System and regulations. System overview.
1 | AHU Unit equipment (field supplied)
2 | Thermistor for gas pipe (E3)
3 | Pressure transductor
4 | Thermistor for discharge air (BL)
5 | Thermistor for liquid pipe (E1)
6 | Thermistor for suction air (TA)
7 | Expansion valve (accessorie part)
8 | Fan (field supplied)
9 | AHU connection kit controller box
10 | Optional remote controller
11 | Outdoor unit Mini ECOi and 2-Pipe ECOi EX

AHU connection kit MAH3M for ECOi and ECO G

Available with ECOi and ECO G Series.
CONEX Bluetooth® version (CZ-RTC6BL) is built-in.
0-10 V demand control.

CONEX

CONEX Bluetooth® control built-in.
CZ-RTC6BL

ECOi EX / ECOi / ECOG

			5 HP	10 HP	20 HP	30 HP	40 HP	50 HP	60 HP	70 HP	80 HP
Reference		**PAW-**	**160MAH3M**	**280MAH3M**	**560MAH3M**	**280MAH3M 560MAH3M**	**560MAH3M 560MAH3M**	**560MAH3M 560MAH3M 280MAH3M**	**560MAH3M 560MAH3M**	**560MAH3M 560MAH3M 560MAH3M 280MAH3M**	**560MAH3M 560MAH3M 560MAH3M 560MAH3M**
Cooling capacity		kW	14,0	28,0	56,0	84,0	112,0	140,0	168,0	196,0	224,0
Heating capacity		kW	16,0	31,5	63,0	95,0	127,0	155,0	189,0	219,0	252,0
Air flow	Cool Min / Max	m^3/h	2598 / 1140	4998 / 3498	10002 / 7002	15000 / 10500	19998 / 13998	24996 / 17496	30000 / 21000	24000 / 35000	28000 / 40000
Bypass factor recommended			0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9
Dimension	H x W x D	mm	500 x 400 x 150	500 x 400 x 150	500 x 400 x 150	500 x 400 x 150	500 x 400 x 150	500 x 400 x 150	500 x 400 x 150	500 x 400 x 150	500 x 400 x 150
Net weight		kg	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5
Pipe length range		m	10 ~ 100	10 ~ 100	10 ~ 100	10 ~ 100	10 ~ 100	10 ~ 100	10 ~ 100	10 ~ 100	10 ~ 100
Elevation difference (in / out)	Max	m	10	10	10	10	10	10	10	10	10
Piping diameter	Liquid	Inch (mm)	3/8 (9,52)	3/8 (9,52)	5/8 (15,88)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	3/4 (19,05)	7/8 (22,22)	7/8 (22,22)
	Gas	Inch (mm)	5/8 (15,88)	7/8 (22,22)	1 1/8 (28,58)	1 1/4 (31,75)	1 1/2 (38,15)	1 1/2 (38,15)	1 1/2 (38,15)	1 5/8 (41,28)	1 3/4 (44,45)
Intake temperature of AHU connection kit	Cool Min ~ Max	°C DB	+18 ~ +32	+18 ~ +32	+18 ~ +32	+18 ~ +32	+18 ~ +32	+18 ~ +32	+18 ~ +32	+18 ~ +32	+18 ~ +32
	Cool Min ~ Max	°C WB	+13 ~ +23	+13 ~ +23	+13 ~ +23	+13 ~ +23	+13 ~ +23	+13 ~ +23	+13 ~ +23	+13 ~ +23	+13 ~ +23
	Heat Min ~ Max	°C	+16 ~ +30	+16 ~ +30	+16 ~ +30	+16 ~ +30	+16 ~ +30	+16 ~ +30	+16 ~ +30	+16 ~ +30	+16 ~ +30
Ambient temperature of outdoor unit	Cool Min ~ Max	°C	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43	-10 ~ +43
	Heat Min ~ Max	°C	-20 ~ +15	-20 ~ +15	-20 ~ +15	-20 ~ +15	-20 ~ +15	-20 ~ +15	-20 ~ +15	-20 ~ +15	-20 ~ +15

AHU connection kit / system combination

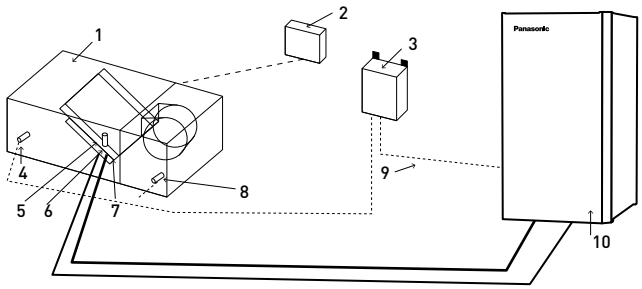
Capacity		ECOi Series			AHU kit			
5 HP	**16 kW**	All ECOi			160MAH3M	—	—	—
10 HP	**28 kW**	U-10ME2E8	—	—	280MAH3M	—	—	—
20 HP	**56 kW**	U-20ME2E8	—	—	560MAH3M	—	—	—
30 HP	**84 kW**	U-16ME2E8	U-14ME2E8	—	560MAH3M	280MAH3M	—	—
40 HP	**112 kW**	U-20ME2E8	U-20ME2E8	—	560MAH3M	560MAH3M	—	—
50 HP	**140 kW**	U-18ME2E8	U-16ME2E8	U-16ME2E8	560MAH3M	560MAH3M	280MAH3M	—
60 HP	**168 kW**	U-20ME2E8	U-20ME2E8	U-20ME2E8	560MAH3M	560MAH3M	560MAH3M	—
70 HP	**196 kW**	U-20ME2E8	U-20ME2E8	U-20ME2E8	560MAH3M	560MAH3M	560MAH3M	280MAH3M
80 HP	**224 kW**	U-20ME2E8	U-20ME2E8	U-20ME2E8	560MAH3M	560MAH3M	560MAH3M	560MAH3M

Capacity		ECO G Series	AHU kit
5 HP	**16 kW**	All ECO G	160MAH3M
10 HP	**28 kW**	All ECO G	280MAH3M
20 HP	**56 kW**	U-20GE3E5	560MAH3M

Technical focus

- Maximum capacity / system: 80 HP (224 kW)
- Maximum piping length: 100 m (120 m equivalent)
- Elevation difference (indoor unit / indoor unit): 4 m
- In / out capacity ratio: 50~100%
- Maximum number of AHU connection kits: 4 units*
- Outdoor temperature range in heating: -20 ~ +15 °C
- Available temperature range for the suction air at AHU connection kit: cool: +18 ~ +32 °C / heat: +16 ~ +30 °C
- The systems is controlled by the suction air (or room return air) temperature (same as standard indoor unit)
- The discharge air temperature is also controlled to prevent too-low air discharge in cooling or too-high air discharge in heating (in case of VRF)
- Demand control (forcible thermostat-OFF control by operating current)
- Defrost operation signal, Thermo-ON / OFF states output
- Drain pump control (drain pump and the float switch to be supplied in local)
- External target temperature setting via indoor / outdoor signal interface is available with CZ-CAPBC2 (Ex. 0-10 V)
- Demand control 40% to 120% (5% steps) by 0-10 V input signal
- Connectable with S-Link system. Special care for electrical noise may be necessary depending on the on-site system
- Fan control signal from the PCB can be used to control the air flow (high / mid / low and LL for Th-OFF). Need to change the fan control circuit wiring at field

* To be simultaneous operation controlled by one remote controller sensor.



System and regulations. System overview.
1 | AHU Unit equipment (field supplied)
2 | AHU Unit system controller (field supplied)
3 | AHU connection kit controller box (with control PCB)
4 | Thermistor for discharge air
5 | Electronic expansion valve
6 | Thermistor for gas pipe (E3)
7 | Thermistor for liquid pipe (E1)
8 | Thermistor for suction air
9 | Inter-unit wiring
10 | ECOi or ECOi G outdoor unit

Optional controller.

Timer remote controller.
CZ-RTC5B.

Energy recovery ventilation

Indoor air quality (IAQ) is a key consideration for any business owner looking to create a healthy and comfortable environment. An energy recovery ventilator (ERV) provides balanced, energy-efficient ventilation by transferring heat and moisture between incoming fresh filtered air and outgoing stale air. In the winter, an ERV keeps heat and moisture inside the building. During hot, humid summer months, it maintains cool, dry indoor air.

Advanced ERV ZY Series.

- Extended 9 model line-up including 2000 m³/h model
- DC motors
- ESP up to 150 Pa
- F7 grade filter built-in as a standard
- New intuitive remote controller
- BMS integration with RS485

ERV ZDY Series.

- Simple 5 line-up
- AC motor
- A nonwoven cloth filter
- Simple wired remote controller with black panel

Advanced energy recovery ventilation - ZY Series

Rated flow rate			150 m³/h	250 m³/h	350 m³/h	500 m³/h	650 m³/h	800 m³/h	1000 m³/h	1500 m³/h	2000 m³/h
Indoor unit			**FV-15ZY1G**	**FV-25ZY1G**	**FV-35ZY1G**	**FV-50ZY1G**	**FV-65ZY1G**	**FV-80ZY1G**	**FV-1KZY1G**	**FV-1HZY1G**	**FV-2KZY1G**
Power supply	Voltage	V	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240
	Phase		Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50	50	50	50	50	50	50	50	50
Motor type			DC	DC	DC	DC	DC	DC	DC	DC	DC
ERV											
Air flow	Max	m³/h	150	250	350	500	650	800	1000	1500	2000
External static pressure	Max	Pa	100	120	140	130	150	150	150	130	130
Sound power 2)	Max	dB(A)	37	38	39	43	45	45	46	49	51
Input power	Max	W	76 ~ 84	106 ~ 117	141 ~ 155,5	180 ~ 198	420 ~ 462	470 ~ 517	550 ~ 605	940 ~ 1034	1100 ~ 1210
Heat exchange efficiency 3)											
Cooling	Max	%	68,0	69,0	71,0	65,0	64,0	63,0	65,0	63,0	65,0
Heating	Max	%	83,0	82,0	83,0	81,0	82,0	83,0	82,0	83,0	82,0
Enthalpy exchange efficiency											
Cooling	Max	%	66,0	66,0	67,0	62,5	62,5	63,5	63,0	63,5	63,0
Heating	Max	%	76,0	74,0	75,0	73,0	72,0	73,0	74,0	73,0	74,0
Adapter diameter		mm	100	150	150	200	200	250	250	250	250
Dimension	H x W x D	mm	289 x 610 x 860	289 x 735 x 860	331 x 874 x 968	331 x 1016 x 968	404 x 954 x 1008	404 x 1004 x 1224	404 x 1231 x 1224	808 x 1004 x 1224	808 x 1231 x 1224
Net weight		kg	23	27	37	40	48	60	64	119	142

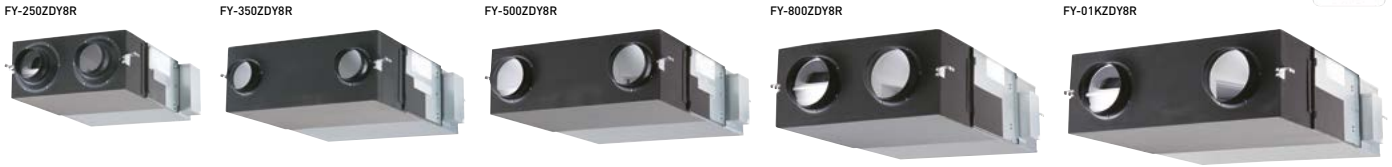
1) Different dimensions depending on models. 2) Measurement of noise 1,5 m below the center of the main unit (anechoic chamber). 3) Heat exchange efficiency measurement standard JIS B 8628 (2003).
* JIS B 8628 (2017) is used in the measurement environment. * A remote controller is included.

Accessories	
FV-FP15ZY1G	Replacement high efficiency filter for FV-15ZY1G
FV-FP25ZY1G	Replacement high efficiency filter for FV-25ZY1G
FV-FP35ZY1G	Replacement high efficiency filter for FV-35ZY1G
FV-FP50ZY1G	Replacement high efficiency filter for FV-50ZY1G

Accessories	
FV-FP65ZY1G	Replacement high efficiency filter for FV-65ZY1G
FV-FP80ZY1G	Replacement high efficiency filter for FV-80ZY1G and FV-1HZY1G*
FV-FP1KZY1G	Replacement high efficiency filter for FV-1KZY1G and FV-2KZY1G*

* 2 sets of filters required for those models.

Energy recovery ventilation - ZDY Series

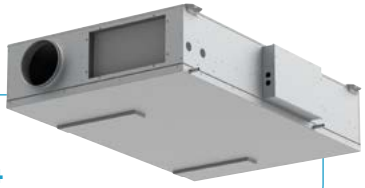


Rated flow rate			250 m³/h			350 m³/h			500 m³/h			800 m³/h			1000 m³/h		
Indoor unit			**FY-250ZDY8R**			**FY-350ZDY8R**			**FY-500ZDY8R**			**FY-800ZDY8R**			**FY-01KZDY8R**		
Power supply	Voltage	V	220 - 240			220 - 240			220 - 240			220 - 240			220 - 240		
	Phase		Single phase			Single phase			Single phase			Single phase			Single phase		
	Frequency	Hz	50			50			50			50			50		
Notch			**Extra high**	**High**	**Low**	**Extra high**	**High**	**Low**	**Extra high**	**High**	**Low**	**Extra high**	**High**	**Low**	**Extra high**	**High**	**Low**
Input power		W	112,0 - 128,0	108,0 - 123,0	87,0 - 96,0	182,0 - 190,0	178,0 - 185,0	175,0 - 168,0	263,0 - 289,0	204,0 - 225,0	165,0 - 185,0	387,0 - 418,0	360,0 - 378,0	293,0 - 295,0	437,0 - 464,0	416,0 - 432,0	301,0 - 311,0
Air flow		m³/h	250	250	190	350	350	240	500	500	440	800	800	630	1000	1000	700
External static pressure		Pa	105	95	45	140	60	45	120	60	35	140	110	55	105	80	75
Sound power	Heat exchange	dB(A)	30,0 - 31,5	29,5 - 30,5	23,5 - 26,5	32,5 - 33,0	30,5 - 31,0	22,5 - 25,5	36,5 - 37,5	34,5 - 35,5	31,0 - 32,5	37,0 - 37,5	36,5 - 37,0	33,5 - 34,5	37,5 - 38,5	37,0 - 37,5	33,5 - 34,5
	Normal	dB(A)	30,0 - 31,5	29,5 - 30,5	23,5 - 26,5	32,5 - 33,0	30,5 - 31,0	22,5 - 25,5	37,5 - 38,5	37,0 - 38,0	31,0 - 32,5	37,0 - 37,5	36,5 - 37,0	33,5 - 34,5	39,5 - 40,5	39,0 - 39,5	35,5 - 36,5
Temperature exchange efficiency		%	75	75	77	75	75	78	75	75	76	75	75	76	75	75	79
Dimension	H x W x D	mm	270 x 599 x 882			317 x 804 x 1050			317 x 904 x 1090			388 x 884 x 1322			388 x 1134 x 1322		
Net weight		kg	29			49			57			71			83		

The noise level was measured within an acoustic chamber. Due to installation arrangement and surfaces within the space, actual noise levels may increase. The input, the current and the exchange efficiency are values relevant to the indicated air flows. The noise level is measured 1,5 m below the centre of the unit. The temperature exchange efficiency is an average of both cooling and heating operation.

NEW energy recovery ventilation with DX coil - HRPT Series · R32 / R410A

· Dual flow ventilation with EC fan, featuring high efficiency heat recovery (>85% η)
· 2 types of polypropylene heat exchanger (high efficiency and sensible) with counter-current flows and integrated bypass as standard
· Modbus connection available



New 2024

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit with high-efficiency heat exchanger			**PAW-HRPT40HX**		**PAW-HRPT80HX**		**PAW-HRPT120HX**		**PAW-HRPT160HX**		**PAW-HRPT200HX**	
Power supply	Voltage	V	230		230		230		230		380	
	Phase		Single phase		Single phase		Single phase		Single phase		Three phase	
	Frequency	Hz	50		50		50		50		50	
Heat recovery ventilation [1]			**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**
Temperature efficiency		%	60,9	49,5	59,2	47,6	60,3	48,8	61,0	49,6	59,2	47,6
Enthalpy efficiency		%	75,7	51,6	73,1	48,9	73,6	50,7	74,3	50,8	73	48,8
Weight		kg	70		120		135		150		180	

Indoor unit with sensible heat exchanger			**PAW-HRPT40**		**PAW-HRPT80**		**PAW-HRPT120**		**PAW-HRPT160**		**PAW-HRPT200**	
Power supply	Voltage	V	230		230		230		230		380	
	Phase		Single phase		Single phase		Single phase		Single phase		Three phase	
	Frequency	Hz	50		50		50		50		50	
Heat recovery ventilation [1]			**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**
Temperature efficiency		%	86,1	86,6	84,3	84,7	82,9	83,5	83,9	84,2	81,3	82,0
Weight		kg	67		117		132		147		177	

Common data												
DX coil			**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**
Total / Sensible capacity		kW	2,5	3,0	5,0	6,0	7,0	8,1	10,0	12,5	12,5	14,0
Maximum input current		A	1,5		2,2		4,1		4,4		3,3	
Sound pressure @1 m / @3 m		dB(A)	41 / 35		51 / 43		42 / 36		49 / 41		57 / 49	
Air flow	High	m³/h	500		800		1500		1700		2450	
External static pressure	High	Pa	150		150		150		150		150	
Dimension	H x W x D	mm	283 x 975 x 1400		408 x 1180 x 1720		408 x 1580 x 1720		408 x 1980 x 1720		408 x 1980 x 1720	
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)		3/8 (9,52)		3/8 (9,52)		3/8 (9,52)		3/8 (9,52)	
	Gas	Inch (mm)	1/2 (12,70)		5/8 (15,88)		5/8 (15,88)		5/8 (15,88)		5/8 (15,88)	

1) Data refers to the following conditions (UNI EN 13141-7): nominal air flow, external air 5 °C with 72% r. / expelled air 25 °C with 28% r. * Image is for PAW-HRPT40.

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function

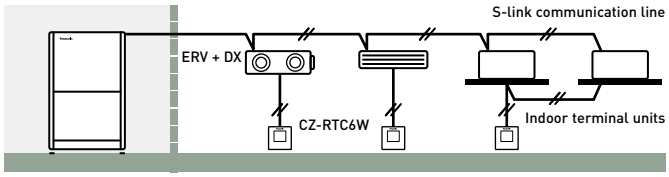
Accessories	
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black

Technical focus

· Dual flow ventilation with EC fan, featuring high efficiency heat recovery (>85% η)
· 5 model line-up is available with air flow rates of 500, 800, 1200, 1600 and 2000 m³/h
· 2 types of polypropylene heat exchanger (high efficiency and sensible) with counter-current flows and integrated bypass as standard
· Automatic defrosting of the exchanger
· Low consumption and EC motors with electronic speed control ensure high useful static pressure for circular inlet connection to air ducts
· Wide ambient temperature range up to +50 ° C and down to -15 °C
· Modbus connection available

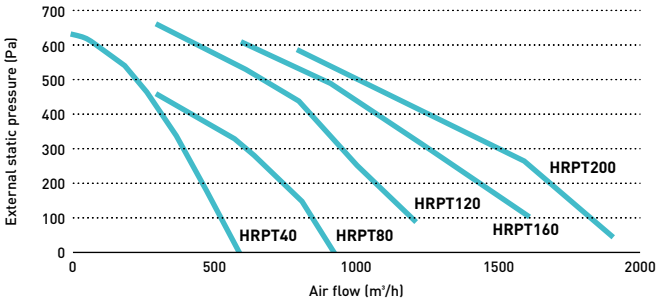
AUTOMATIC FAN · HUMIDITY CONTROL DRY · AUTOMATIC RESTART · BUILT-IN DRAIN PUMP · PANASONIC AC SMART CLOUD · BMS CONNECTIVITY

Interconnection to outdoor / indoor units



Aeraulic performance

EC motors with electronic speed control ensure high values of effective static pressure for ducting.



Heat recovery with DX coil - ZDX Series · R410A

Motorised heat recovery by-pass device automatically controlled to use fresh air free-cooling when convenient.

COMPATIBLE WITH ALL PANASONIC CONNECTIVITY SOLUTIONS. FOR DETAILED INFORMATION GO TO THE CONTROL SYSTEMS SECTION

Indoor unit			PAW-500ZDX3N		PAW-800ZDX3N		PAW-01KZDX3N	
Power supply	Voltage	V	230		230		230	
	Phase		Single phase		Single phase		Single phase	
	Frequency	Hz	50		50		50	
Air flow		m³/min	8,3		13,3		16,7	
External static pressure [1]		Pa	90		120		115	
Maximum current	Total full load	A	0,6		1,4		2,1	
Input power		W	150		320		390	
Sound pressure [2]		dB(A)	39		42		43	
Piping diameter	Liquid	Inch (mm)	1/4 (6,35)		1/4 (6,35)		1/4 (6,35)	
	Gas	Inch (mm)	1/2 (12,70)		1/2 (12,70)		1/2 (12,70)	
Heat recovery			**Cooling**	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**
Temperature efficiency		%	76	76	76	76	76	76
Enthalpy efficiency		%	63	67	63	65	60	62
Saved power summer mode or winter mode*		kW	1,70	4,30 (4,80)	2,50	6,50 (7,30)	3,20	8,20 (9,00)
DX coil								
Total / Sensible capacity		kW	3,00 / 2,10	2,50 / 2,70	5,10 / 3,50	4,40 / 4,80	5,80 / 4,10	5,20 / 6,70
OFF temperature		°C	15,9	28,0 (27,3)	15,5	29,6 (29,0)	16,2	28,5 (27,8)
OFF relative humidity		%	90	16 (15)	90	14 (13)	89	15 (14)

Nominal summer conditions: Outside air: 32 °C DB, RH 50%. Ambient air: 26 °C DB, RH 50%. Nominal winter conditions: Outside air: -5 °C DB, RH 80%. Ambient air: 20 °C DB, RH 50%. Cooling mode air inlet condition: 28,5 °C DB, RH 50%; evaporating temperature 7 °C. Heating mode air inlet condition: 13 °C DB, RH 40% (11 °C DB, RH 45%); condensating temperature 40 °C. DB: Dry Bulb; RH: Relative Humidity. 1) Referred to the nominal air flow after filter and plate heat exchanger. 2) Sound pressure level calculated at 1 m far from: ducted supply exhaust air ducted return - first air intake / service side, at normal condition. * Tentative data.

Accessories	
CZ-RTC6W	CONEX wired remote controller (non-wireless), white
CZ-RTC6WBL	CONEX wired remote controller with Bluetooth®, white
CZ-RTC6	CONEX wired remote controller (non-wireless), black
CZ-RTC6BL	CONEX wired remote controller with Bluetooth®, black
CZ-RTC5B	Wired remote controller with Econavi function

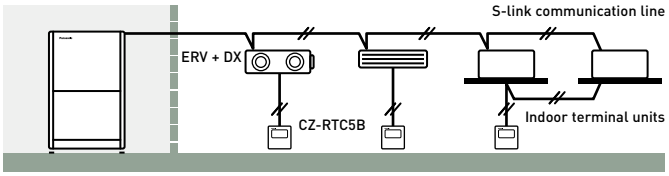
Accessories	
PAW-RE2C4-MOD-WH	Room controller for hotel rooms, white
PAW-RE2C4-MOD-BK	Room controller for hotel rooms, black
PAW-RE2D4-WH	Display control for hotel rooms, white
PAW-RE2D4-BK	Display control for hotel rooms, black

Technical focus

- Galvanized steel self-supporting panels, internally and externally insulated
- High efficiency static cross-flow heat recovery, made by membrane with high moisture permeability, good air tightness, excellent tear, and aging resistance, structure consisting of flat and corrugated plates. Total heat exchange with temperature efficiency up to 76% and enthalpy efficiency up to 67%, also at high level during summer season
- ISO16890 ePm2,5 95% (F9 EN 779) efficiency class filter with synthetic cleanable media and COARSE 50% (G3 EN 779) pre-filter ON fresh air, COARSE 50% filter on return air intake
- Removable side panel to access filters and heat recovery in the event of scheduled maintenance
- Low consumption, low noise, high efficiency direct driven fans
- Supply section complete with DX coil (R410A) fitted with solenoid control valve, freon filter, contact temperature sensors on liquid and gas line, NTC sensors upstream and downstream of air flow
- Built-in electric box equipped with PCB to control internal fan speed and to interconnect outdoor / indoor units
- Duct connection by circular plastic collars

Balanced ventilation

Interconnection to outdoor / indoor units



SELF-DIAGNOSING · AUTOMATIC FAN · HUMIDITY CONTROL DRY · AUTOMATIC RESTART · BUILT-IN DRAIN PUMP · OPTIONAL WI-FI · BMS CONNECTIVITY

INTERNET CONTROL: Optional.

Rating conditions: Cooling indoor 27 °C DB / 19 °C WB. Cooling outdoor 35 °C DB / 24 °C WB. Heating indoor 20 °C DB. Heating outdoor 7 °C DB / 6 °C WB. (DB: Dry Bulb; WB: Wet Bulb).
Specifications subject to change without notice. For detailed information about ErP / Energy Labelling, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

Air curtain with DX coil, connected to VRF systems

Comfort: Easy redirection of air flow by means of manual deflector.

Ease of use: Speed selector (high and low) on the unit itself.

Easy installation and maintenance: Easy installation / Compact dimensions improve installation and positioning / Easy cleaning of grid without opening of the unit.

Outdoor unit capacity			**4 HP**	**4 HP**	**5 HP**	**8 HP**
Air outlet height 2,7 m			**PAW-10EAIRC-LS**	**PAW-15EAIRC-LS**	**PAW-20EAIRC-LS**	**PAW-25EAIRC-LS**
Cooling capacity [1]	Max	kW	6,1	9,7	13,0	17,0
Heating capacity [2]	Max	kW	7,9	12,0	15,0	19,0
Air flow	High	m³/h	1800	2700	3600	4500
Heat Exchanger	Volume	L	1,67	2,85	3,94	5,03
Electric consumption fan	230 V / 50 Hz	kW	0,30	0,50	0,60	0,80
Current	230 V / 50 Hz	A	2,10	3,10	4,10	5,10
Sound pressure [3]	Max	dB(A)	65	66	67	69
Air outlet height 3,0 m			**PAW-10EAIRC-HS**	**PAW-15EAIRC-HS**	**PAW-20EAIRC-HS**	**PAW-25EAIRC-HS**
Cooling capacity [1]	Max	kW	9,1	13,0	19,5	23,7
Heating capacity [2]	Max	kW	11,8	15,8	23,6	27,6
Air flow	High	m³/h	2700	3600	5400	6300
Heat Exchanger	Volume	L	1,67	2,85	3,94	5,12
Electric consumption fan	230 V / 50 Hz	kW	0,75	1,00	1,50	1,75
Current	230 V / 50 Hz	A	4,10	5,50	8,20	9,60
Sound pressure [3]	Max	dB(A)	66	67	68	68
Common data						
Dimension [4]	H x W x D	mm	260 (+140) x 1000 x 460	260 (+140) x 1500 x 460	260 (+140) x 2000 x 460	260 (+140) x 2500 x 460
Net weight	Air outlet height 2,7 m	kg	50	65	80	95
	Air outlet height 3,0 m	kg	55	65	85	110
Fan type			EC	EC	EC	EC
Piping diameter	Liquid / Gas	Inch (mm)	3/8 (9,52) / 5/8 (15,88)	3/8 (9,52) / 3/4 (19,05)	3/8 (9,52) / 7/8 (22,22)	3/8 (9,52) / 7/8 (22,22)
Door width		m	1,0	1,5	2,0	2,5
Refrigerant			R32 / R410A	R32 / R410A	R32 / R410A	R32 / R410A

LS / VRF outdoor combination			
Operation until	**40 °C**	**35 °C**	**30 °C**
PAW-1EAIRC-LS	U-4	U-4	U-4
PAW-15EAIRC-LS	U-6	U-5	U-4
PAW-20EAIRC-LS	U-8	U-6	U-4
PAW-25EAIRC-LS	U-8	U-8	U-5

HS / VRF outdoor combination			
Operation until	**40 °C**	**35 °C**	**30 °C**
PAW-10EAIRC-HS	U-6	U-5	U-4
PAW-15EAIRC-HS	U-8	U-6	U-4
PAW-20EAIRC-HS	U-8	U-8	U-8
PAW-25EAIRC-HS	U-12	U-10	U-8

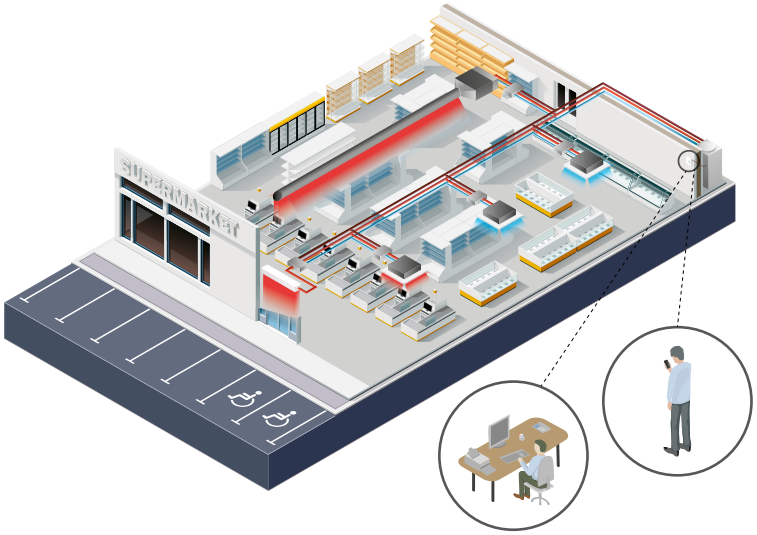
1) Cooling capacity DX coil, air temperature in / out +27 / +18 °C, R32 and R410. 2) Heating capacity condenser, air temperature in / out +20 / +33 °C, R32 and R410. In the case of lower outdoor temperatures, an outdoor model with higher capacity may be necessary. 3) Measured in distance up to 5,0 m, direction factor 2, absorbing surfaces 200 m², Min / Max air flow. 4) 140 mm is the height of an electrical box if it is installed on the top. * Also compatible with ECO G Series (GE3 and GF3) and Hybrid Serie.

Technical focus

- Compatible with R32 and R410A refrigerant
- Save up to 40% energy costs by use of the integrated EC fan technology (higher efficiency than conventional AC fan, soft start and longer motor duration)
- 4 length of air curtain LS and HS are available 1,0, 1,5, 2,0 and 2,5 m
- Installation height up to 3,0 m
- Outlet grilles can be adjusted in five positions, to suite different indoor and installation requirements
- Control with Panasonic remote control systems (optional)
- Direct integration to BMS via optional Panasonic interfaces
- Drip tray included in all DX air curtains
- Drain pump included

Internet control

An app added to your tablet or smartphone or via the Internet allows you to control and manage the system remotely. There is also the option to integrate into existing BMS systems by using other Panasonic interfaces.



GREEN TECH

BMS CONNECTIVITY

Rating Conditions: Cooling Outdoor +35 °C DB Indoor +27 °C DB / +19 °C WB, Discharge temperature 16 °C. All combinations under rated conditions: Heating Outdoor +7 °C DB/+6 °C WB Indoor +20 °C DB. In case of lower outdoor temperatures a higher capacity outdoor unit model may be necessary. Specifications subject to change without notice. For detailed information about ErP, please visit our websites www.aircon.panasonic.eu or www.ptc.panasonic.eu.

Ceiling mounted air-e nanoe X Generator

· nanoe™ X technology
(Generator Mark 1: 4,8 trillion hydroxyl radicals/sec)
· Silent operation. Whisper quiet at 25,5 dB(A)*
· Low power consumption 4 W
· Easy installation
· Compact and modern design

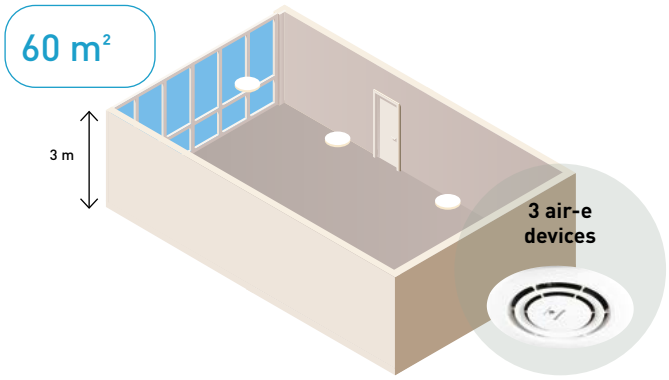
* 230 V.

Model			FV-15CSD1G		
Power supply	Voltage	V	220	230	240
	Frequency	Hz	50	50	50
Air flow		m³/h	15	16	17
		CFM	8,8	9,4	10,0
Consumption		W	4	4	4
Sound pressure		dB(A)	23,5	25,5	27,0
Net weight		kg		1,1	

* The value of air volume, power consumption and noise are specified at static pressure 0 Pa. The value of air volume is the mean value and a tolerance of +-10% is allowed. The value of noise level is a weighted average sound pressure level, the mean value is measured by Panasonic. A tolerance of +3 dB/-7 dB is allowed. The noise is measure at 1 m apart from the left, the front and below of the tested product. Conditions of generating nanoe™ X: room temperature: about 5 °C ~ 40 °C (dew point temperature more than 2 °C), relative humidity: about 30% ~ 85%. nanoe™ X is generated using the air in the room, and its amount is subject to the temperature and humidity in the air.

One device is suitable for around 20 m² (with a ceiling height 3 m)

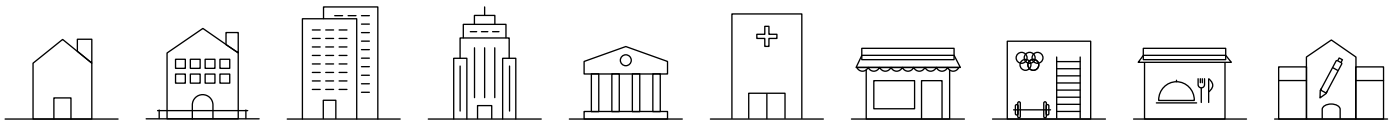
Ex. 3 air-e devices are required for the room size 60 m².



Concentration simulator is ready

See how nanoe™ X fills space.

The air-e is a stand alone device which is an easy and simple choice to improve indoor air quality. It can be easily installed to various commercial projects including refurbishments.



The tested effects of nanoe™ X

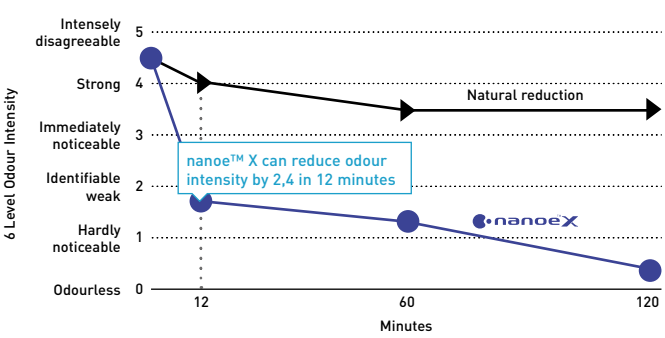
Bacteria and viruses.
SARS-CoV-2: 99,9% % inhibited [1].
Influenza virus H1N1 subtype: 99,9 % inhibited [2].

Odour.
nanoe X Generator can reduce cigarette smoke odour intensity by 2,4 levels in 12 minutes.

1) Novel coronavirus (SARS-CoV-2) > [Test organization] Texcell (France) [Test subject] Adhered novel coronavirus (SARS-CoV-2) [Test volume] 45 L enclosed box [Test result] Inhibited 99,9% in 2 hours [Test report] 1140-01 A1.
2) Adhered virus (Influenza virus H1N1 subtype) > [Test organization] Kitasato Research Center for Environmental Science [Test subject] Influenza virus (H1N1 subtype) [Test volume] 1000 L enclosed box [Test result] Inhibited 99,9% in 2 hours [Test report] 21_0084_1.
3) Deodorisation effect for adhering odour (cigarette smoke) > [Test organization] Panasonic Product Analysis Center [Test subject] Adhered cigarette smoke odour [Test volume] Approx. 24 m³ laboratory [Test result] Odour intensity reduced 2,4 levels in 0,2 hours [Test report] 4AA33-160615-N04.

Performance of nanoe™ X might differ in real life environment and is only expected in the same room as where the unit is placed. The nanoe™ X performance varies depending on the room size, environment and usage and it may take several hours to reach the full effect. nanoe™ X is not a medical device.

Deodorisation effect for adhering odour (cigarette smoke) [3].



For further details and validation data, please refer to the following website.

Fan coils units

A large range of fan coil units dedicated to energy savings, comfort, flexibility and quality.

MORE FAN COIL OPTIONS IN CHILLERS SECTION

Energy savings and comfort

Low consumption solutions.
· High efficiency fan motor
· High level of energy performance

Silence.
· Optimised fan speed staging
· Reinforced acoustic insulation
· Profiled air diffusers

Flexibility and quality

Many factory-mounted options.
· Control
· Valve
· Air diffusion
· Condensate drain pump ...

Products fully customisable to satisfy your requirements.
· Choice of service side for hydraulic and electrical connections
· Version with or without cabinet ...

Controllers with sophisticated designs, provide a user friendly interface while enabling an easy and low cost integration to building management systems.

Optional wired remote controller for AC fan, 2-pipe and 4-pipe application.

PAW-FC-RC1

Optional wired remote controller for AC fan 2-pipe application.

PAW-FC-903AC

PAW-FC-907AC

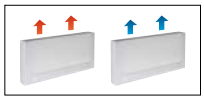
Optional wired remote controller for EC fan, 2-pipe and 4-pipe application.

PAW-FC-903EC

PAW-FC-907EC

Smart fan coils

Built-in advanced thermostat.



			PAW-AAIR-200-2	PAW-AAIR-700-2	PAW-AAIR-900-2	PAW-AAIR-1100-2
Total cooling capacity	Lo/Med/Hi	kW	0,3/0,5/0,6	0,6/0,9/1,5	0,8/1,6/2,1	0,9/1,8/2,5
Sensible capacity	Lo/Med/Hi	kW	0,2/0,4/0,6	0,5/0,9/1,3	0,7/1,3/1,9	0,9/1,6/2,3
Water flow	Lo/Med/Hi	kg/h	51,1/89,4/106,3	96,0/155,2/251,1	140,8/267,2/365,7	158,1/300,3/423,6
Water pressure drop	Lo/Med/Hi	kPa	3,3/5,7/6,1	1,1/2,1/4,2	1,5/5,8/10,3	1,3/5,0/10,6
Inlet water temperature		°C	10	10	10	10
Outlet water temperature		°C	15	15	15	15
Inlet air temperature		°C	27	27	27	27
Outlet air temperature	Lo/Med/Hi	°C	12,8/13,2/14,9	14,6/14,8/14,0	15,8/14,6/14,4	18,1/15,2/14,7
Relative humidity of inlet air		%	47	47	47	47
Total heating capacity	Lo/Med/Hi	kW	0,2/0,4/0,5	0,4/0,8/1,2	0,6/1,2/1,6	0,8/1,4/2,1
Water flow	Lo/Med/Hi	kg/h	38,4/70,5/92,8	72,7/139,2/201,6	114,0/204,2/284,5	138,3/243,2/356,7
Water pressure drop	Lo/Med/Hi	kPa	1,0/2,3/3,0	0,5/1,5/3,1	1,0/3,3/6,6	1,1/3,1/7,3
Inlet water temperature		°C	35	35	35	35
Outlet water temperature		°C	30	30	30	30
Inlet air temperature		°C	19	19	19	19
Outlet air temperature	Lo/Med/Hi	°C	33,5/33,3/30,9	30,1/31,4/31,8	30,1/31,1/31,2	26,6/29,5/30,5
Air flow	Lo/Med/Hi	m³/min	0,9/1,9/2,7	2,6/4,2/5,3	4,1/6,1/7,7	6,2/7,6/9,6
Maximum input power	Lo/Med/Hi	W	7,0/9,0/13,0	14,0/18,0/22,0	16,0/20,0/24,0	18,0/22,0/26,5
Sound pressure	Lo/Med/Hi	dB(A)	24/33/39	25/34/40	25/34/42	26/35/43
Dimension (H x W x D)		mm	579 x 735 x 129	579 x 935 x 129	579 x 1135 x 129	579 x 1335 x 129
Net weight		kg	17	20	23	26
3 Ways valve included			Yes	Yes	Yes	Yes
Touch screen thermostat			Yes	Yes	Yes	Yes

* Smart fan coils is produced by Innova.

Accessories	
PAW-AAIR-LEGS-1	Set of 2 legs to protect water pipes

Accessories	
PAW-AAIR-RHCABLE	Motor connection cable for units with right hand hydraulic connections

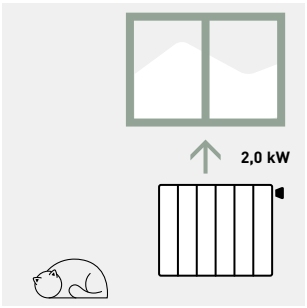
Stylish floor-standing fan coils with advanced controller

The slimline of Smart fan coils delivers high efficiency climate control.

With a depth of just under 130 mm they are at the cutting edge of the market. Blending easily into the home, Smart fan coil's elegant design and product refinements are clear to see in every detail.

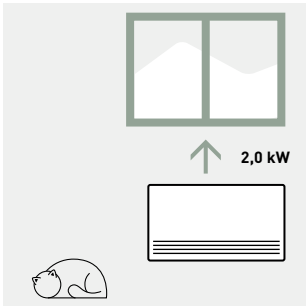
Exceptional ventilation efficiency means the motor uses considerably less energy (low wattage). The fan speed is continuously modulated by the temperature controller with proportional integral logic, with undoubted advantages for regulating the temperature and humidity in summer mode.

With standard cast radiators.



Water at 65 °C needed.

With Smart fan coil.



Water at 35 °C needed.

Technical focus

- 4 operation modes (auto, silent, night-time and maximum ventilation speed)
- Exclusive design
- Extremely compact (only 129 mm deep)
- Cooling and dehumidification functions possible (drain is needed)
- 3-way valve included (no overflow valve needed on the installation if more than 3 units installed)
- Touch screen thermostat

All temperature curves and capacity are available on www.panasonicproclub.com

PRO Club

Fan coil comfort AC fan

Fan coil floor and ceiling units with cooling and heating.
Cooling capacity: 0,6 to 6,9 kW.
Heating capacity: 0,6 to 7,4 kW.




Optional controller. WRC remote control.

Optional controller. SRC - mini BMS controller.

Optional controller. Electronic controller TControl POD glass.

Optional controller. Electronic controller TControl EASY 3S.

Optional controller. Wired remote controller with touch control.
PAW-FC-907AC

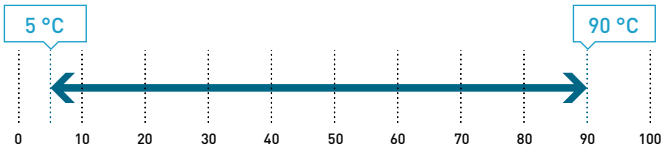
Optional controller. Wired remote controller.
PAW-FC-903AC

Optional controller. Advanced wired remote controller.
PAW-FC-RC1

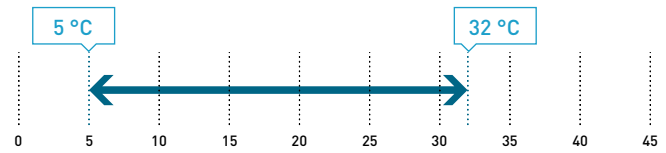
SEE PAGE 516 FOR MORE DETAILS ABOUT FAN COIL CONTROLLERS

Operating limits

Entering water temperature (without glycol).



Indoor air temperature.



The range at a glance

- Versions: 2-pipes, 2-pipes + electric heater and 4-pipes
- 7 sizes
- 5-speed AC fan - standard factory set speeds: S1,S3,S5
- Air flow from 94 to 1064 m³/h
- Configuration: universal installation units (vertical or horizontal) with or without cabinet
- Left or right water connections
- Many air inlet/outlet configurations
- G2 air filter (G3 as an option)

Advantages

- Silent units
- New casing design for an increased robustness
- Harmonious and aesthetic RAL 9003 painted cabinet
- Valves, condensate drain pan and drain pump factory mounted
- 100% factory tested

Accessories and options
2 way or 3 way valves
4-pipes kit (additional coil)
Circuit breakers
Drain pump
Electric heaters (from 500 W to 2500 W)
Feet with/without grid
Fuse holders
G3 filter
Horizontal or vertical drain guard (with valve)
Many air inlet/outlet configurations
Mechanical sensor for automatic change over
Modbus communication board for Plogic
MRC/WRC/BRC: remote controls for Plogic
Other speeds configuration (standard factory set speeds: S1,S3,S5)
SRC - mini BMS controller
Suspension kit
Plogic controller (other electromechanical or electronic control systems also available)
TControl EASY 3S and TControl POD glass controllers (other electromechanical or electronic control systems also available)

AC SELECT.

Smart and user-friendly the new air conditioning selection program: https://acselect.panasonic.eu/

Technical features

Fan coil comfort AC fan			P-FC10	P-FC20	P-FC30	P-FC40	P-FC50	P-FC60	P-FC70
			S1/S3/S5 [1]	S1/S3/S5 [1]	S1/S3/S5 [1]	S1/S3/S5 [1]	S1/S3/S5 [1]	S1/S3/S5 [1]	S1/S3/S5 [1]
2-pipes									
Total cooling capacity [2]		kW	0,66/1,00/1,45	0,61/0,96/1,38	0,95/1,88/2,37	1,14/2,28/3,02	1,71/3,16/4,64	2,57/4,33/5,53	3,24/5,84/6,91
Sensible capacity [2]		kW	0,48/0,77/1,05	0,43/0,70/1,02	0,78/1,44/1,80	0,83/1,66/2,23	1,24/2,23/3,27	1,81/3,14/4,25	2,26/4,11/4,85
Water flow [2]		l/h	114/172/250	105/165/238	164/324/408	196/393/520	295/544/799	443/746/953	558/1006/1190
Water pressure drop [2] [3]		kPa	9,17/19,5/39,1	2,65/4,62/7,43	5,8/17,6/26,3	5,0/15,6/25,6	7,5/22,8/47,1	12,6/33,9/54,4	4,4/13,9/19,4
Heating capacity [4]		kW	0,63/1,18/1,71	0,63/1,03/1,53	1,00/1,86/2,49	1,14/2,28/3,18	1,79/3,47/4,81	2,45/4,22/5,63	3,45/6,27/7,41
Water flow [4]		l/h	109/203/295	109/177/264	172/320/429	196/393/548	308/598/829	422/727/970	594/1080/1276
Water pressure drop [3] [4]		kPa	5,9/17,3/33,8	2,76/5,06/8,54	5,8/16,2/27,0	5,0/15,6/28,1	6,1/20,7/38,5	18,6/52,4/91,4	4,9/16,0/22,3
4-pipes									
Total cooling capacity [2]		kW	0,63/0,88/1,24	0,87/1,34/1,73	0,91/1,80/2,28	0,98/2,14/2,85	1,57/2,88/4,13	2,60/4,39/5,61	3,17/5,62/6,58
Sensible capacity [2]		kW	0,46/0,67/0,91	0,65/1,02/1,36	0,75/1,39/1,74	0,71/1,57/2,10	1,14/2,04/2,92	1,82/3,18/4,28	2,21/3,96/4,62
Water flow [2]		l/h	109/152/214	150/231/298	157/310/393	169/369/491	270/496/711	448/756/966	546/968/1133
Water pressure drop [2] [3]		kPa	7,6/13,9/26,3	2,33/4,44/6,64	2,8/8,6/13,1	5,8/20,5/33,6	3,9/11,6/22,8	10,2/27,7/44,5	5,3/16,2/22,1
Heating capacity [5]		kW	0,63/1,00/1,41	1,00/1,40/1,68	1,28/1,81/2,13	1,22/2,21/2,85	2,01/3,19/4,08	2,71/4,24/5,33	3,65/5,00/5,90
Water flow [5]		l/h	54/86/121	86,1/121/145	110/156/183	105/190/245	173/275/351	233/365/459	314/431/508
Water pressure drop [3] [5]		kPa	1,2/2,1/3,3	1,15/2,2/3,12	2,8/4,7/6,1	5,1/13,9/21,8	5,7/12,5/19,4	11,6/24,8/37	35,4/60,7/81,2
Sound levels									
Sound power	2-pipes	dB(A)	33/40/49	31/43/50	30/45/52	30/44/51	34/43/56	38/51/58	43/56/61
	4-pipes	dB(A)	33/40/49	31/43/50	30/45/52	30/44/51	34/46/56	38/51/58	43/56/61
Sound pressure [6]	2-pipes	dB(A)	24/31/40	22/34/41	21/36/43	21/35/42	25/37/47	29/42/49	34/47/52
	4-pipes	dB(A)	24/31/40	22/34/41	21/36/43	21/35/42	25/37/47	29/42/49	34/47/52
NR [6]	2-pipes		19/26/35	17/29/36	16/31/38	16/30/37	20/32/42	24/37/44	29/42/47
	4-pipes		19/26/35	17/29/36	16/31/38	16/30/37	20/32/42	24/37/44	29/42/47
Ventilation									
Number of fans			1	1	1	2	2	2	2
Air flow	2-pipes	m³/h	94/190/283	68/104/196	138/274/390	173/357/499	253/486/716	350/640/933	480/893/1064
	4-pipes	m³/h	95/168/253	89/161/241	132/263/369	148/335/467	242/466/671	334/614/885	470/859/1012
Filter			G2	G2	G2	G2	G2	G2	G2
Electrical data									
Power supply	Voltage	V	230	230	230	230	230	230	230
	Phase		Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Consumption	2-pipes	W	13/24/36	13/18/31	16/37/45	15/37/56	28/55/72	37/75/105	53/100/147
	4-pipes	W	13/24/36	11/18/28	16/37/44	15/37/55	28/54/70	37/74/104	53/99/145
Electric heater		W	500	500	500/1000	1250	1250/2500	1250/2500	1250/2500
Water connections									
Connection type			Gas female threaded	Gas female threaded	Gas female threaded	Gas female threaded	Gas female threaded	Gas female threaded	Gas female threaded
2 or 4-pipes	Cooling	Inch	½	½	½	½	½	½	¾
4-pipes	Heating	Inch	½	½	½	½	½	½	½
Dimension									
With cabinet - without feet	L x W x H	mm	766 x 225 x 477	766 x 225 x 477	951 x 225 x 477	1136 x 225 x 477	1321 x 225 x 477	1506 x 225 x 477	1319 x 225 x 575
Without cabinet	L x W x H	mm	570 x 220 x 430	570 x 220 x 430	753 x 220 x 430	938 x 220 x 430	1122 x 220 x 430	1307 x 220 x 430	1121 x 220 x 530
Weight									
With cabinet	2-pipes	kg	19	19	22	27	30	35	35
	4-pipes	kg	20	20	23	29	32	37	37
Without cabinet	2-pipes	kg	13	13	15	20	22	26	27
	4-pipes	kg	14	14	16	22	24	28	29

1) Fan standard factory set speeds. 2) According to Eurovent standard. Air: 27 °C DB/19 °C WB, chilled water: 7 °C/12 °C. 3) Pressure loss by corresponding nominal flow. 4) According to Eurovent standard. Air: 20 °C, hot water: 45 °C/40 °C. 5) According to Eurovent standard. Air: 20 °C, hot water: 65 °C/55 °C. 6) Informative data, considering an hypothetical sound attenuation of the room and installation of 9 dB(A).

ErP SUPER QUIET

ErP compliant following COMMISSION REGULATION (EU) 2016/2281.

Fan coil wall AC fan

Fan coil wall-mounted units with cooling and heating.
Cooling capacity: 1,0 to 4,0 kW.
Heating capacity: 1,4 to 4,5 kW.

Optional controller.
WRC remote control.

Optional controller.
SRC - mini BMS controller.

Optional controller.
Electronic controller TControl POD glass.

Optional controller.
Electronic controller TControl EASY 3S.

Optional controller.
Wired remote controller with touch control.
PAW-FC-907AC

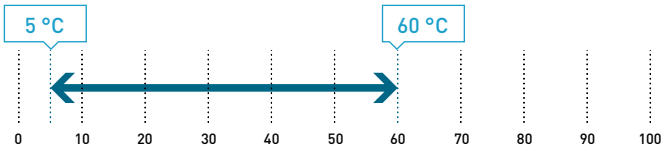
Optional controller.
Wired remote controller.
PAW-FC-903AC

Optional controller.
Advanced wired remote controller.
PAW-FC-RC1

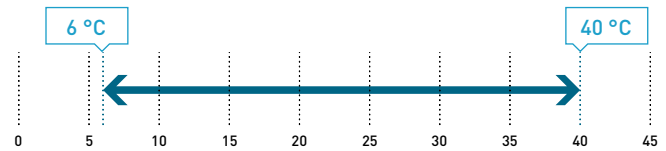
SEE PAGE 516 FOR MORE DETAILS ABOUT FAN COIL CONTROLLERS

Operating limits

Entering water temperature (without glycol).



Indoor air temperature.



The range at a glance

- Versions (2-pipes): infrared without valve (IR SV), infrared with valve (IR AV) and terminal block without valve (TB SV)
- 4 sizes
- 3-speed AC fan
- Air flow from 280 to 850 m³/h
- G1 cleanable air filter

Advantages

- Reversible
- Aesthetic design
- Light for easy installation
- Silent units
- Very easy servicing through a removable front panel
- Cleanable synthetic-type air filter

Accessories and options
2 way or 3 way valves
Modbus communication board for Plogic
SRC - mini BMS controller
Plogic controller (other electromechanical or electronic control systems also available)
TControl EASY 3S and TControl POD glass controllers (other electromechanical or electronic control systems also available)
WRC: wall-mounted remote control for Plogic

AC SELECT.

Smart and user-friendly the new air conditioning selection program: https://acselect.panasonic.eu/

Technical features

Fan coil wall AC fan			P-FW07	P-FW09	P-FW18	P-FW22
			S2/S3/S4 [1]	S2/S3/S4 [1]	S2/S3/S4 [1]	S2/S3/S4 [1]
2-pipes, without valve						
Total cooling capacity [2]		kW	1,00/1,34/1,69	1,58/1,79/2,50	2,78/3,05/3,60	2,93/3,29/4,00
Sensible capacity [2]		kW	0,72/0,97/1,20	1,21/1,37/1,87	2,12/2,39/2,74	2,28/2,62/3,11
Water flow [2]		l/h	172/231/291	270/308/431	479/525/620	505/565/687
Water pressure drop [2]		kPa	18,6/24,9/31,4	18,5/21,4/31,0	34,6/40,0/52,3	37,2/42,8/54,9
Heating capacity [3]		W	1,42/1,62/1,72	1,68/1,92/2,80	2,99/3,30/4,10	3,18/3,63/4,50
Water flow [3]		l/h	245/279/296	289/331/482	515/568/706	548/625/775
Water pressure drop [3]		kPa	17,6/23,4/26,5	21,4/23,5/28,6	39,9/46,3/64,7	41,7/55,0/85,8
Sound levels						
Sound power		dB(A)	45/49/51	40/43/52	47/50/54	50/55/60
Sound pressure [4]		dB(A)	30/33/35	32/36/40	39/41/43	39/43/48
NR [4]		dB(A)	32/36/38	34/39/44	40/43/46	43/46/50
Ventilation						
Number of fans			1	1	1	1
Air flow		m³/h	282/321/360	367/413/551	532/592/680	617/709/850
Filter			G1	G1	G1	G1
Electrical data						
Power supply	Voltage	V	230	230	230	230
	Phase		Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50	50	50	50
Consumption	Cooling	W	39/42/62	30/33/40	44/48/53	50/55/69
	Heating	W	39/42/62	27/30/50	42/45/60	46/51/66
Water connections						
Connection type			Gas female threaded	Gas female threaded	Gas female threaded	Gas female threaded
Connections		Inch	½	½	½	½
Dimension and weight						
Dimension	L x W x H	mm	845 x 180 x 275	845 x 180 x 275	940 x 200 x 298	940 x 200 x 298
Weight		kg	11	11	13	13

Fan coil wall AC fan			P-FW09	P-FW22
			S2/S3/S4 [1]	S2/S3/S4 [1]
2-pipes, with valve				
Total cooling capacity [2]		kW	1,11/1,25/1,40	2,32/2,68/3,10
Sensible capacity [2]		kW	0,91/1,08/1,25	1,68/1,98/2,28
Water flow [2]		l/h	191/215/241	400/460/532
Water pressure drop [2]		kPa	14,9/16,8/18,8	42,4/50,8/61,5
Heating capacity [3]		W	1,29/1,61/2,00	2,51/2,75/3,30
Water flow [3]		l/h	222/277/344	432/474/568
Water pressure drop [3]		kPa	16,1/21,3/28,2	45,8/48,6/54,1
Sound levels				
Sound power		dB(A)	44/50/54	53/57/60
Sound pressure [4]		dB(A)	32/36/40	39/43/48
NR [4]		dB(A)	27/31/37	34/37/41
Ventilation				
Number of fans			1	1
Air flow		m³/h	150/250/400	290/400/600
Filter			G1	G1
Electrical data				
Power supply	Voltage	V	230	230
	Phase		Single phase	Single phase
	Frequency	Hz	50	50
Consumption	Cooling	W	35/38/43	50/58/69
	Heating	W	30/33/43	50/58/69
Water connections				
Connection type			Gas female threaded	Gas female threaded
Connections		Inch	½	½
Dimension and weight				
Dimension	L x W x H	mm	845 x 180 x 275	940 x 200 x 298
Weight		kg	11	13

1) Fan standard factory set speeds. 2) According to Eurovent standard. Air: 27 °C DB/19 °C WB, chilled water: 7 °C/12 °C. 3) According to Eurovent standard. Air: 20 °C, hot water: 45 °C/40 °C. 4) Informative data, considering an hypothetical sound attenuation of the room and installation of 9 dB(A).

ErP SUPER QUIET ErP compliant following COMMISSION REGULATION (EU) 2016/2281.

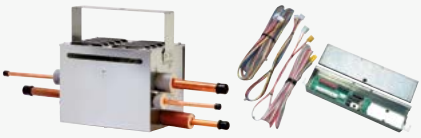
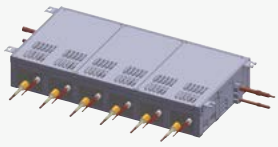
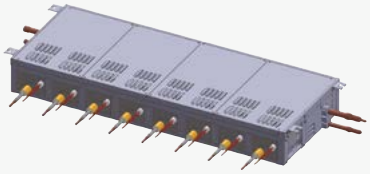
Accessories and control

Distribution joint kits

2-Pipe ME2 for outdoor units (up to 68,0 kW). ———— CZ-P680PH2BM	**2-Pipe ME2 for outdoor units (from 68,0 kW to 168,0 kW).** ———— CZ-P1350PH2BM	**2-Pipe ME2 and Mini ECOi for indoor units (up to 22,4 kW*).** ———— CZ-P224BK2BM
2-Pipe ME2 for indoor units (from 22,4 kW to 68,0 kW*). ———— CZ-P680BK2BM	**2-Pipe ME2 for indoor units (from 68,0 kW to 168,0 kW*).** ———— CZ-P1350BK2BM	**3-Pipe MF3 for outdoor units (up to 68,0 kW).** ———— CZ-P680PJ2BM
3-Pipe MF3 for outdoor units (from 68,0 kW to 135,0 kW). ———— CZ-P1350PJ2BM	**3-Pipe MF3 for indoor units (up to 22,4 kW).** ———— CZ-P224BH2BM	**3-Pipe MF3 for indoor units (from 22,4 kW to 68,0 kW).** ———— CZ-P680BH2BM
3-Pipe MF3 for indoor units (up to 68,0 kW). ———— CZ-P1350BH2BM	**2-Pipe ME2 header pipe.** ———— CZ-P4HP4C2BM	**3-Pipe MF3 header pipe.** ———— CZ-P4HP3C2BM

* In case the total capacity of indoor units connected after distribution exceeds the total capacity of the outdoor units, select the distribution piping size for the total capacity of the outdoor units.

Heat recovery box

 **3-Pipe control Solenoid valve kit (up to 5,6 kW).** CZ-P56HR3 + CZ-CAPE2. ———— KIT-P56HR3	 **Solenoid valve kit (up to 5,6 kW).** ———— CZ-P56HR3	 **3-Pipe control PCB.** ———— CZ-CAPE2
3-Pipe control Solenoid valve kit (from 5,6 to 16,0 kW). CZ-P160HR3 + CZ-CAPE2. ———— KIT-P160HR3	**Solenoid valve kit (from 5,6 kW to 16,0 kW).** ———— CZ-P160HR3	**3-Pipe control PCB for wall-mounted.** ———— CZ-CAPEK2
 **4 ports 3 pipe box (up to 5,6 kW per port).** ———— CZ-P456HR3 **4 ports 3 pipe box (up to 16,0 kW per port).** ———— CZ-P4160HR3	 **6 ports 3 pipe box (up to 5,6 kW per port).** ———— CZ-P656HR3	 **8 ports 3 pipe box (up to 5,6 kW per port).** ———— CZ-P856HR3

Panels

 **Standard panel for 4 way 90x90 cassette.** ———— CZ-KPU3W	 **Econavi panel for 4 way 90x90 cassette.** ———— CZ-KPU3AW	 **Panel for 4 way 60x60 cassette - MY3.** ———— CZ-KPY4

Panel for 2 way cassette (for S-22 to S-56 models).

CZ-02KPL2

Panel for 2 way cassette (for S-73 model).

CZ-03KPL2

Panel for 1 way cassette.

CZ-KPD2

Sensors

Panasonic R32 refrigerant leak detector for MU2, MY3, MM1 and MK2 models.

CZ-CGLSC1

Econavi energy saving sensor.

CZ-CENSC1

Remote temperature sensor.

CZ-CSRC3

Fresh air-intake kit.

CZ-FDU3+CZ-ATU2

NEW IAQ filter for adaptive ducted unit

BION air pollutant filter for MF3 15, 22, 28, 36, 45 and 56.

PAW-APF800F

BION Air pollutant filter for MF3 60 and 73.

PAW-APF1000F

BION Air pollutant filter for MF3 90, 106, 112, 140 and 160.

PAW-APF1400F

Plenums

Air inlet plenum for MF3 60, 73 and 90.

CZ-DUMPA90MF2

Air inlet plenum for MF3 106, 112, 140 and 160.

CZ-DUMPA160MF2

Air inlet plenum for MM1 22, 28, 36, 45 and 56.

CZ-DUMPA22MMR2

Air outlet plenum for MM1 22, 28 and 36.

CZ-DUMPA22MMS2

Air outlet plenum for MM1 45 and 56.

CZ-DUMPA45MMS3

Air outlet plenum for S-224ME1E5A.

CZ-TREMIESPW705

Air outlet plenum for S-280ME1E5.

CZ-TREMIESPW706

Valves

Wall-mounted external valve for model sizes 15 to 56.

CZ-P56SVK2

Wall-mounted external valve for model sizes 60 to 106.

CZ-P160SVK2

E2 type high static pressure hide-away rap valve kit for 100% Fresh air function.

CZ-P160RVK2

* Plenums installed with an R32 Mini ECOi system may only be used when no Panasonic R32 refrigerant leak detector is required. Please refer to technical data manual for refrigerant installation requirements.

VRF Smart Connectivity+

Remote controller Panasonic Net Con, RH, No PIR, R1/R2.

———

SER8150R0B1194

Remote controller Panasonic Net Con, RH, PIR, R1/R2.

———

SER8150R5B1194

Wireless ZigBee® Pro module / Green Com card.

———

VCM8000V5094P

Hotel room expansion module 14 indoor units.

———

HRCEP14R

Hotel room controller 28 indoor units.

———

HRCPBG28R

Hotel room controller w/Display 42 indoor units.

———

HRCPDG42R

Door/window wireless sensor.

———

SED-WDC-G-5045

Wall/ceiling motion/ temperature/humidity sensor.

———

SED-MTH-G-5045

CO_2 sensor.

———

SED-CO2-G-5045

Sensor with room temperature and humidity.

———

SED-TRH-G-5045

Water leakage sensor.

———

SED-WLS-G-5045

Cover frame. Silver.

———

FAS-00

Cover frame. White.

———

FAS-01

Cover frame. Glossy translucent white.

———

FAS-03

Cover frame. Light tan wood.

———

FAS-05

Cover frame. Dark brown wood.

———

FAS-06

Cover frame. Dark black wood.

———

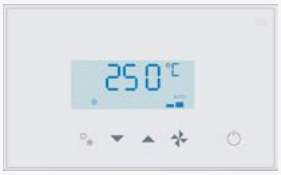
FAS-07

Cover frame. Brushed steel finish.

———

FAS-10

Controller and touch controllers for hotels with dry contacts



Modbus RS-485 touch room controller with I/O, white.

PAW-RE2C4-MOD-WH

Touch display control with 2 digital inputs, white.

PAW-RE2D4-WH

Modbus RS-485 touch room controller with I/O, black.

PAW-RE2C4-MOD-BK

Touch display control with 2 digital inputs, black.

PAW-RE2D4-BK

Hotel sensors for dry contacts

Wall silent motion sensor 24 V.

PAW-WMS-DC

Wall silent motion sensor 240 V AC.

PAW-WMS-AC

Ceiling silent motion sensor 24 V.

PAW-CMS-DC

Ceiling silent motion sensor 240 V AC.

PAW-CMS-AC

Power supply 24 V.

PAW-24DC

Door or window contact.

PAW-DWC

Centralised controls

System controller for 64 indoor units with weekly timer.

CZ-64ESMC3

Central ON / OFF controller, up to 16 groups, 64 indoor units.

CZ-ANC3

Intelligent controller (touch screen/web server) to control up to 256 indoors with included load distribution ratio (LDR).

CZ-256ESMC3

Centralised controls. BMS system. PC base

P-AIMS core software: Centralised software to control up to 1024 indoor units.

CZ-CSWKC2

P-AIMS communication adaptor.

CZ-CFUNC2

P-AIMS consumption calculation extension.

CZ-CSWAC2

P-AIMS layout display extension.

CZ-CSWGC2

P-AIMS BACnet extension.

CZ-CSWBC2

P-AIMS web application extension.

CZ-CSWWC2

Panasonic AC Smart Cloud

ALL REFERENCES RELATED TO AC SMART CLOUD IS IN THE DEDICATED PAGE

Panasonic AC Smart Cloud. Cloud internet control. Up to 128 groups. Controls 128 units.

CZ-CFUSCC1

NEW BMS interface with S-Link

A unified interface supporting Modbus, BACnet, and KNX protocols for up to 16 indoor units.

PAW-AC2-BMS-16

A unified interface supporting Modbus, BACnet, and KNX protocols for up to 64 indoor units.

PAW-AC2-BMS-64

A unified interface supporting Modbus, BACnet, and KNX protocols for up to 128 indoor units.

PAW-AC2-BMS-128

Accessories interfaces

Commercial Wi-Fi Adaptor.

CZ-CAPWFC1

KNX interface (Intesis).

PAW-RC2-KNX-1i

Modbus RTU interface (Intesis).

PAW-RC2-MBS-1

Modbus RTU interface to control 4 indoor/groups (Intesis).

PAW-RC2-MBS-4

BACnet IP and MSTP (Intesis).

PAW-RC2-BAC-1

KNX interface (Airzone).

PAW-AZRC-KNX-1

Modbus RTU interface (Airzone).

PAW-AZRC-MBS-1

BACnet IP and MSTP interface (Airzone).

PAW-AZRC-BAC-1

RAC interface adapter for integration into S-Link, plus external input and alarm/ status output.

CZ-CAPRA1

LonWorks® Interface controls up to 16 groups and 64 indoor units.

CZ-CLNC2

Centralised controls. Connection with general equipment

Adaptor for ON / OFF control of external devices.

————
CZ-CAPC3

Demand control for PACi and Mini ECOi outdoor units.

————
CZ-CAPDC3

Mini series parallel device controlling indoor units, maximum 1 group and 8 indoor unit.

————
CZ-CAPBC2

Communication Adaptor. Up to 128 groups. Controls 128 units.

————
CZ-CFUNC2

Individual controls

CONEX wired remote controller (non-wireless), white.

————
CZ-RTC6W

CONEX wired remote controller with Bluetooth®, white.

————
CZ-RTC6WBL

CONEX wired remote controller (non-wireless), black.

————
CZ-RTC6

CONEX wired remote controller with Bluetooth®, black.

————
CZ-RTC6BL

Design wired remote controller with Econavi function.

————
CZ-RTC5B

Infrared remote controller and receiver for 4 way 60x60 cassette - PY3 with panel.

————
CZ-RWS3 + CZ-RWRY3

Infrared remote controller and receiver for 4 way 90x90 cassette.

————
CZ-RWS3 + CZ-RWRU3W

Infrared remote controller and receiver for 2 way cassette.

————
CZ-RWS3 + CZ-RWRL3

Infrared remote controller and receiver for 1 way cassette.

————
CZ-RWS3 + CZ-RWRD3

Infrared remote controller and receiver for ceiling.

————
CZ-RWS3 + CZ-RWRT3

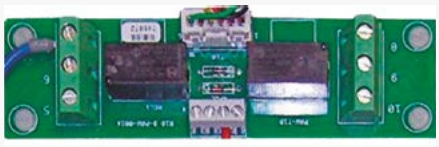
Infrared remote controller for wall-mounted and floor console.

————
CZ-RWS3

Infrared remote controller and receiver for all indoor units.

————
CZ-RWS3 + CZ-RWRC3

Accessories PCB



T10 interface PCB with digital and relay connections.

————

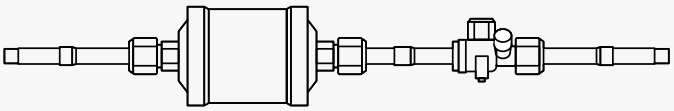
PAW-T10

PCB for fan speed control of external EC Fan.

————

PAW-ECF

R-22 Replacement Kit

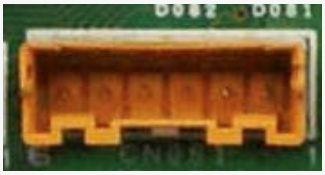


Replacement kit for R-22.

————

CZ-SLK2

Accessories cables



Cable for all the T10 functions.

————

CZ-T10

Cable to operate external EC fan.

————

PAW-FDC

Cable for all option monitoring signals.

————

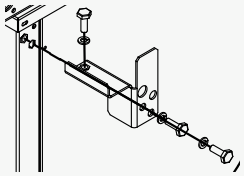
PAW-OCT

Cable with force thermo OFF/ leakage detection.

————

PAW-EXCT

Water heat exchanger accessories



Stacking kit for vertically stacking up to 3 WHE (4 pieces per Kit).

————

PAW-3WSK

Smart fan coil accessories

Set of 2 legs to protect water pipes.

———

PAW-AAIR-LEGS-1

Motor connection cable for units with right hand hydraulic connections.

———

PAW-AAIR-RHCABLE

Fan coil units controllers

Electro-mechanical controller (supplied loose).

———

TRM-FA

Electronic controller.

———

Plogic

Electronic controller.

———

TControl EASY 3S

Electronic controller.

———

TControl POD glass

Wired remote controller with touch control for 2-pipe and 4-pipe, EC fan coil (control + Modbus).

———

PAW-FC-907EC

Wired remote controller with touch control for 2-pipe, AC fan coil (control only).

———

PAW-FC-907AC

Wired remote controller for 2-pipe and 4-pipe, EC fan coil (control + Modbus).

———

PAW-FC-903EC

Wired remote controller for 2-pipe, AC fan coil (control only).

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PAW-FC-903AC

Advanced wired remote controller for fan coil.

———

PAW-FC-RC1

Smart controller. Mini building management system.

———

SRC

Plogic remote control.

———

WRC / MRC

Plogic remote control.

———

BRC

Plogic remote control.

———

IRC

Dimensions and tube sizes of branches and headers for 2-Pipe ECOi EX ME2 and Mini ECOi Series

Optional distribution joint kits

See the installation instructions packaged with the distribution joint kit for the installation procedure.

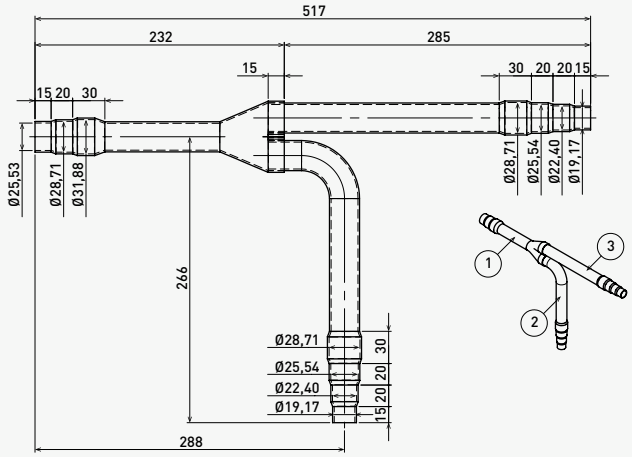
* In case the total capacity of indoor units connected after distribution exceeds the total capacity of the outdoor units, select the distribution piping size for the total capacity of the outdoor units.

Model name	Cooling capacity after distribution	Remarks
1. CZ-P680PH2BM	Up to 68,0 kW	For outdoor unit
2. CZ-P1350PH2BM	From 68,0 kW to 168,0 kW	For outdoor unit
3. CZ-P224BK2BM*	Up to 22,4 kW	For indoor unit
4. CZ-P680BK2BM*	From 22,4 kW to 68,0 kW	For indoor unit
5. CZ-P1350BK2BM*	From 68,0 kW to 168,0 kW	For indoor unit

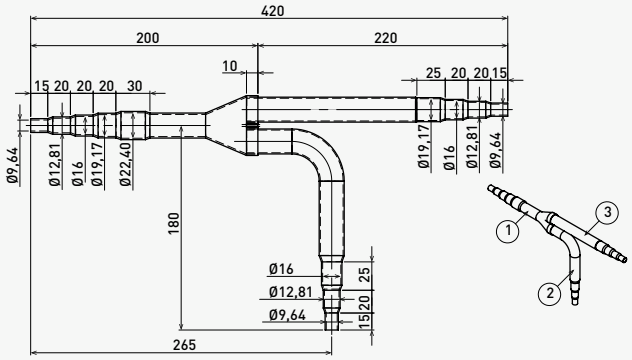
Tubing size (with thermal insulation)

1. CZ-P680PH2BM: For outdoor unit side (capacity after distribution joint up to 68,0 kW).

Gas piping



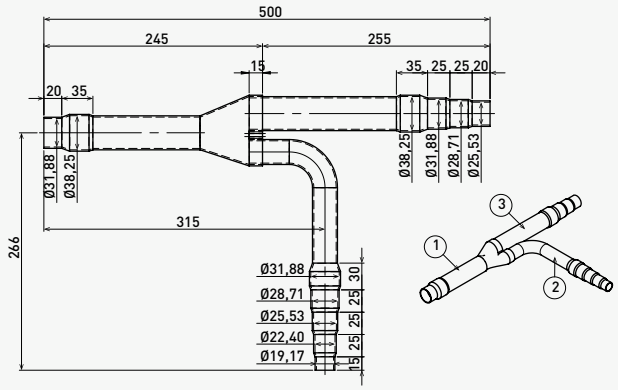
Liquid piping



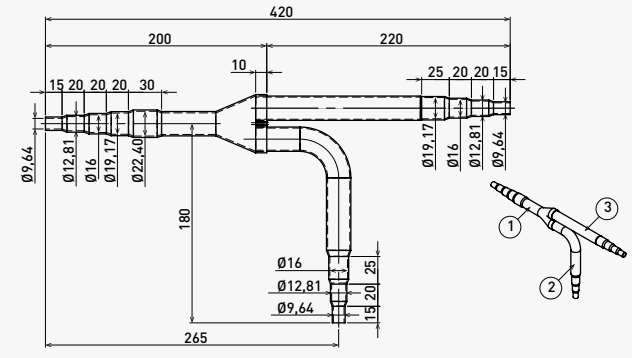
Unit: mm

2. CZ-P1350PH2BM: For outdoor unit side (capacity after distribution joint is from 68,0 kW to 168,0 kW).

Gas piping



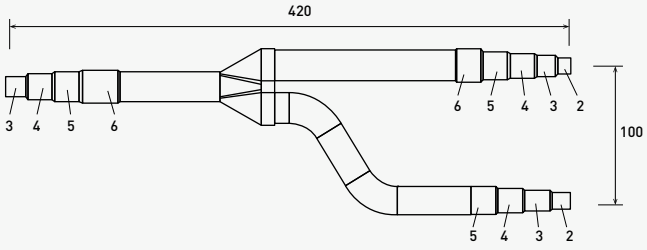
Liquid piping



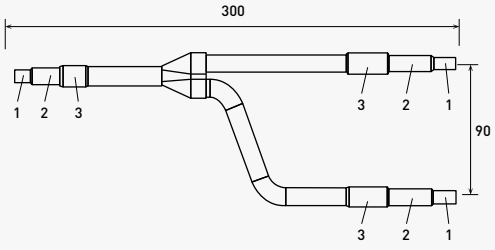
Unit: mm

3. CZ-P224BK2BM: For indoor unit side (capacity after distribution joint up to 22,4 kW).

Gas piping



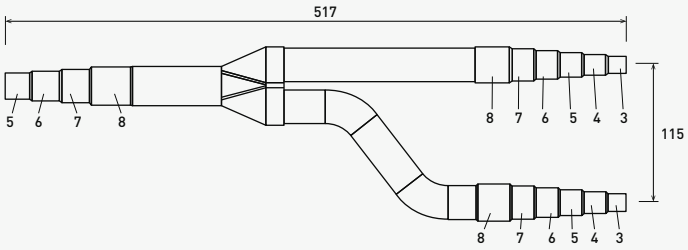
Liquid piping



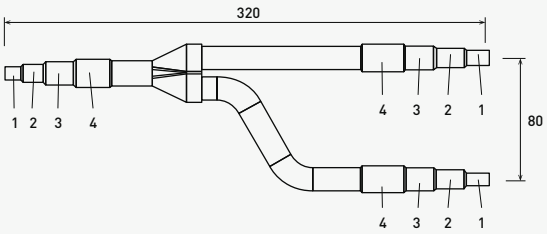
Unit: mm

4. CZ-P680BK2BM: For indoor unit side (capacity after distribution joint is from 22,4 kW to 68,0 kW).

Gas piping



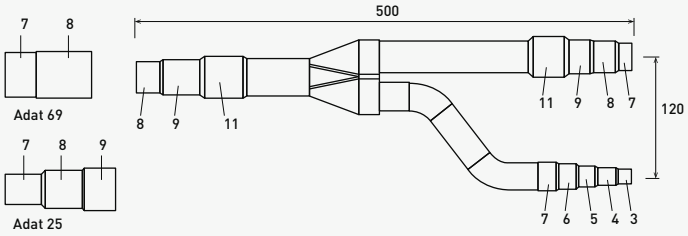
Liquid piping



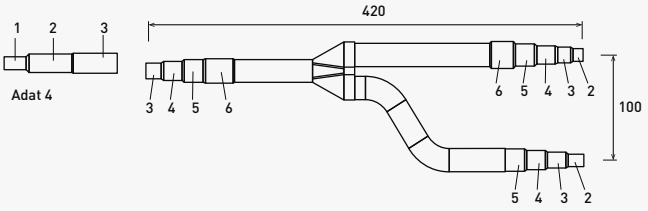
Unit: mm

5. CZ-P1350BK2BM: For indoor unit side (capacity after distribution joint is from 68,0 kW to 168,0 kW).

Gas piping



Liquid piping

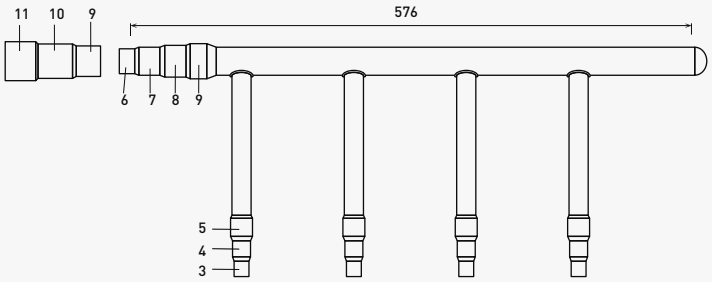


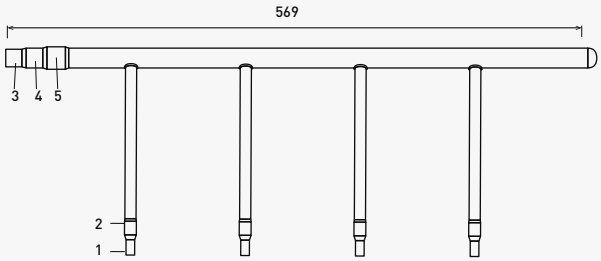
Unit: mm

Size of connection point on each part (shown are inside diameters of piping)														
Diameters		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Dimension	Inch	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2
	mm	6,35	9,52	12,70	15,88	19,05	22,40	25,40	28,57	31,75	34,92	38,10	41,28	44,45	50,80

Header pipe set

CZ-P4HP4C2BM



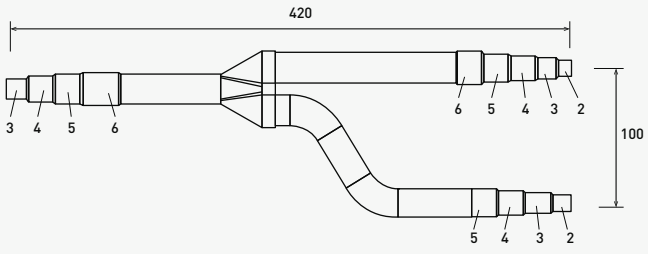


Size of connection point on each part (shown are inside diameters of piping)											
Diameters		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Dimension	Inch	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
	mm	6,35	9,52	12,70	15,88	19,05	22,40	25,40	28,57	31,75	34,92	38,10

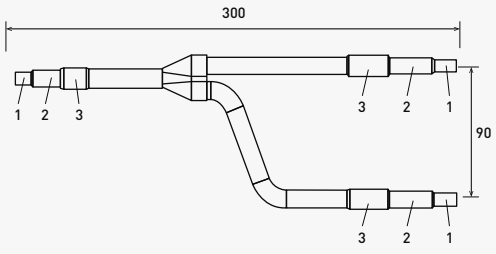
Distribution joint Kits for Mini ECOi LE/LZ Series

CZ-P224BK2BM: For indoor unit side (capacity after distribution joint up to 22,4 kW).

Gas piping



Liquid piping



Unit: mm

Size of connection point on each part (shown are inside diameters of piping)							
Diameters		**1**	**2**	**3**	**4**	**5**	**6**
Dimension	Inch	1/4	3/8	1/2	5/8	3/4	7/8
	mm	6,35	9,52	12,70	15,88	19,05	22,40

Dimensions and tube sizes of branches and headers for 3-Pipe ECOi EX MF3 Series

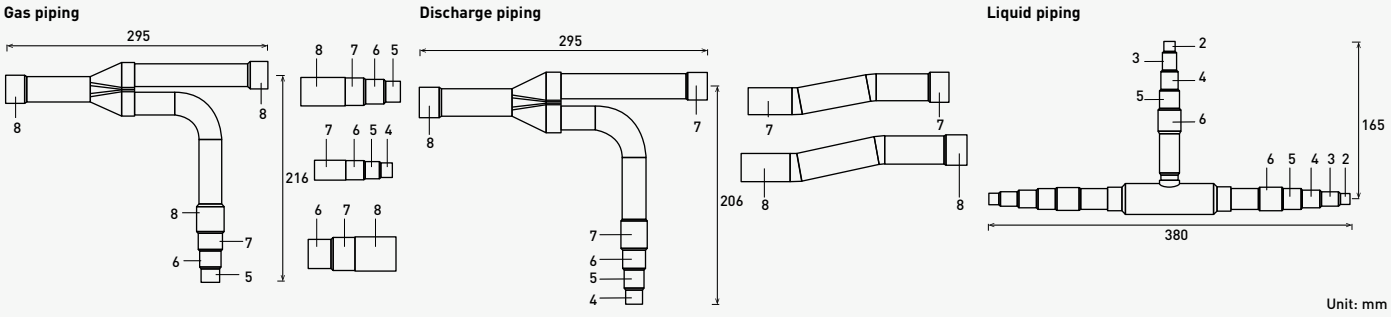
Optional distribution joint kits

See the installation instructions packaged with the distribution joint kit for the installation procedure.

Model name	Cooling capacity after distribution	Remarks
1. CZ-P680PJ2BM	Up to 68,0 kW	For outdoor unit
2. CZ-P1350PJ2BM	From 68,0 kW to 135,0 kW	For outdoor unit
3. CZ-P224BH2BM	Up to 22,4 kW	For indoor unit
4. CZ-P680BH2BM	From 22,4 kW to 68,0 kW	For indoor unit
5. CZ-P1350BH2BM	From 68,0 kW to 135,0 kW	For indoor unit

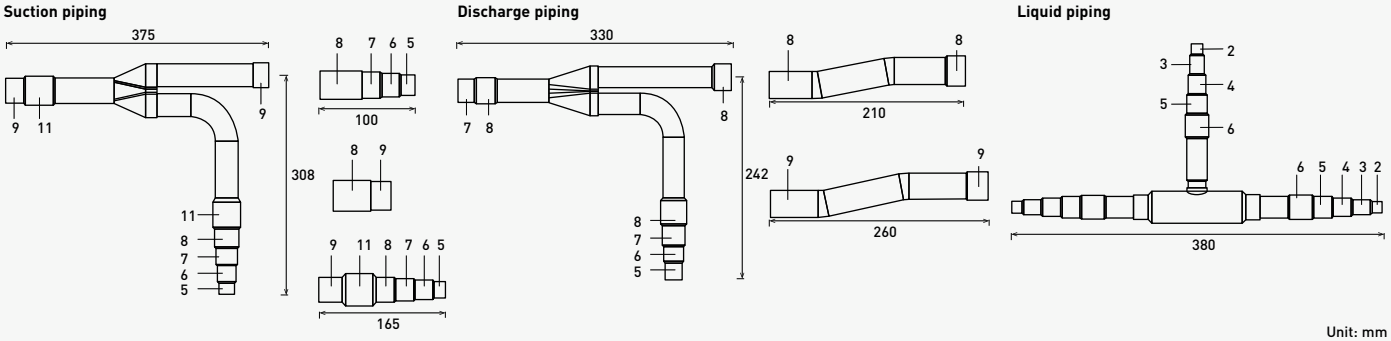
Piping size

1. CZ-P680PJ2BM: For outdoor unit side (capacity after distribution joint up to 68,0 kW).



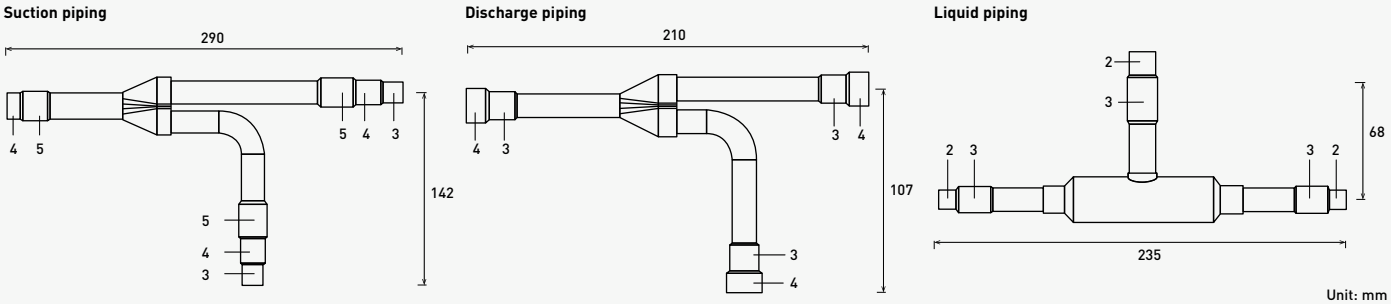
Unit: mm

2. CZ-P1350PJ2BM: For outdoor unit side (capacity after distribution joint is from 68,0 kW to 135,0 kW).



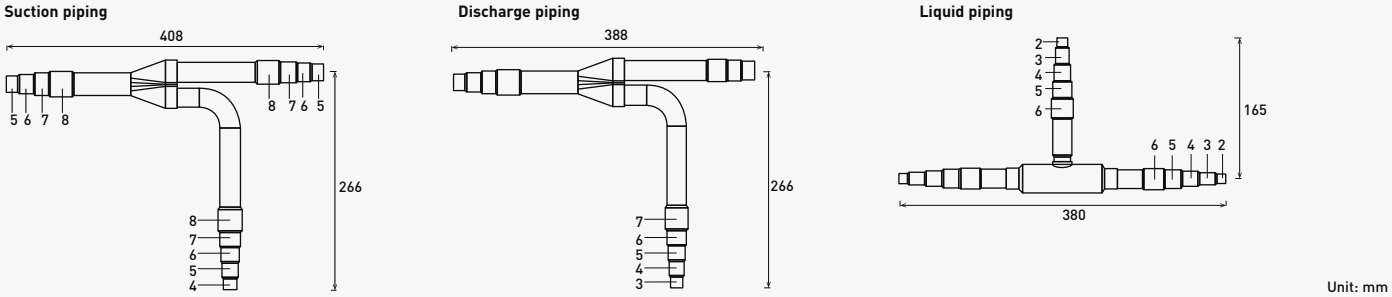
Unit: mm

3. CZ-P224BH2BM: For indoor unit side (capacity after distribution joint up to 22,4 kW).



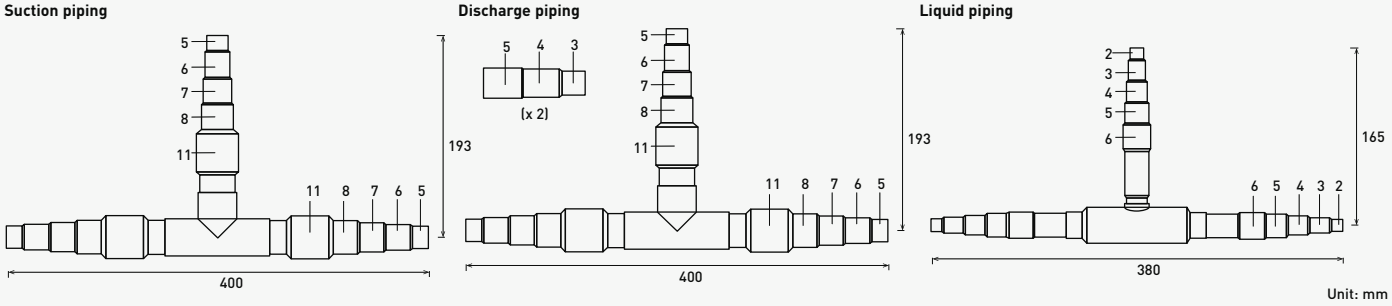
Unit: mm

4. CZ-P680BH2BM: For indoor unit side (capacity after distribution joint is from 22,4 kW to 68,0 kW).



Unit: mm

5. CZ-P1350BH2BM: For indoor unit side (capacity after distribution joint is from 68,0 kW to 135,0 kW).

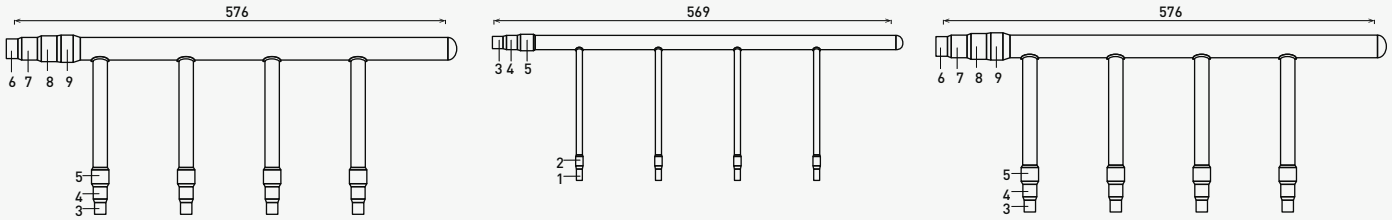


Unit: mm

Size of connection point on each part (shown are inside diameters of piping)														
Diameters		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
Dimension	Inch	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2
	mm	6,35	9,52	12,70	15,88	19,05	22,40	25,40	28,57	31,75	34,92	38,10	41,28	44,45	50,80

Header pipe set

CZ-P4HP3C2BM



Size of connection point on each part (shown are inside diameters of piping)												
Diameters		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Dimension	Inch	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
	mm	6,35	9,52	12,70	15,88	19,05	22,40	25,40	28,57	31,75	34,92	38,10

Eurovent certified technical data

Panasonic's PACi and VRF systems are now certified by Eurovent*. The Eurovent certification verifies the performance ratings of heating and cooling systems following European standards. Data provides products efficiency with full transparency, for the benefit of customers and professionals.

Eurovent VRF certified technical data: Mini ECOi LZ2 Series 4 to 10 HP · R32

HP			4 HP		5 HP		6 HP		8 HP	10 HP
Outdoor unit			U-4LZ2E5	U-4LZ2E8	U-5LZ2E5	U-5LZ2E8	U-6LZ2E5	U-6LZ2E8	U-8LZ2E8	U-10LZ2E8
Indoor units combination			MU2	MU2	MU2	MU2	MU2	MU2	MU2	MU2
Cooling	Pc out [1]	kW	12,1	12,1	14,0	14,0	15,5	15,5	22,4	28,0
	Pec out [2]	kW	3,0	3,0	3,7	3,7	4,4	4,4	6,8	9,7
	EERout		4,1	4,1	3,8	3,8	3,5	3,5	3,3	2,9
Seasonal Cooling	SEER		8,5	8,5	8,1	8,1	7,7	7,7	7,6	7,1
	$\eta_{s,c}$	%	337,0	337,0	322,0	322,0	305,0	305,0	299,0	280,0
Cooling PL Condition B	PcB	kW	8,9	8,9	10,3	10,3	11,4	11,4	16,5	20,6
	EERB		6,5	6,5	5,9	5,9	5,4	5,4	5,2	4,6
Cooling PL Condition C	PcC	kW	5,7	5,7	6,6	6,6	7,3	7,3	10,6	13,2
	EERC		11,3	11,3	10,8	10,8	10,2	10,2	9,6	8,7
Cooling PL Condition D	PcD	kW	5,4	5,4	5,6	5,6	5,8	5,8	9,0	9,5
	EERD		15,6	15,6	15,2	15,2	15,0	15,0	16,6	18,0
Seasonal Heating	Pdesignh	kW	10,0	10,0	11,2	11,2	11,6	11,6	17,5	19,6
	SCOP		5,1	5,1	4,6	4,6	4,6	4,6	4,6	4,6
	$\eta_{s,h}$	%	199,0	199,0	181,4	181,4	180,6	180,6	180,6	181,0
Heating PL Condition A	PhA	kW	8,8	8,8	9,9	9,9	10,3	10,3	15,4	17,3
	COPA		3,1	3,1	2,9	2,9	2,9	2,9	2,9	2,8
Heating PL Condition B	PhB	kW	5,4	5,4	6,0	6,0	6,2	6,2	9,4	10,5
	COPB		4,8	4,8	4,1	4,1	4,1	4,1	4,2	4,2
Heating PL Condition C	PhC	kW	3,5	3,5	3,9	3,9	4,0	4,0	6,2	6,7
	COPC		7,2	7,2	7,2	7,2	7,1	7,1	6,9	7,1
Heating PL Condition D	PhD	kW	4,0	4,0	4,0	4,0	4,0	4,0	6,7	6,9
	COPD		9,1	9,1	9,3	9,3	9,3	9,3	8,7	9,2
T bivalent	Tbiv	°C	-10	-10	-7	-7	-7	-7	-7	-7
	PhTbiv	kW	10	10	10	10	10	10	15	17
	COPTbiv		2,5	2,5	2,9	2,9	2,9	2,9	2,9	2,8
Psbc		W	14	14	14	14	14	14	18	18
Psbh		W	18	18	18	18	18	18	26	26
Poffc		W	14	14	14	14	14	14	18	18
Poffh		W	18	18	18	18	18	18	26	26
Ptoc		W	14	14	14	14	14	14	18	18
Ptoh		W	18	18	18	18	18	18	26	26
Pckc		W	14	14	14	14	14	14	18	18
Pckh		W	18	18	18	18	18	18	26	26
Sound power level		dB(A)	69	69	70	70	72	72	72	74
Sound power level in heating		dB(A)	72	72	74	74	75	75	74	75

Eurovent VRF certified technical data: Mini ECOi LE Series 4 to 10 HP · R410A

HP			4 HP				5 HP				6 HP				8 HP		10 HP	
Outdoor unit			U-4LE2E5		U-4LE2E8		U-5LE2E5		U-5LE2E8		U-6LE2E5		U-6LE2E8		U-8LE1E8		U-10LE1E8	
Indoor units combination			MF2	MU2	MF2	MU2	MF2	MU2	MF2	MU2	MF2	MU2	MF2	MU2	MF2	MU2	MF2	MU2
Cooling	Pc out [1]	kW	12,1	12,1	12,1	12,1	14,0	14,0	14,0	14,0	15,5	15,5	15,5	15,5	22,4	22,4	28,0	28,0
	Pec out [2]	kW	2,9	2,9	2,9	2,9	3,7	3,7	3,7	3,7	4,6	4,6	4,6	4,6	7,2	7,2	10,8	10,8
	EERout		4,2	4,2	4,2	4,2	3,8	3,8	3,8	3,8	3,4	3,4	3,4	3,4	3,1	3,1	2,6	2,6
Seasonal Cooling	SEER		7,8	7,8	7,8	7,8	7,5	7,5	7,5	7,5	7,2	7,2	7,2	7,2	6,3	6,3	6,4	6,4
	$\eta_{s,c}$	%	311,0	311,0	311,0	311,0	296,2	296,2	296,2	296,2	286,8	286,8	286,8	286,8	247,9	247,9	251,8	251,8
Cooling PL Condition B	PcB	kW	8,9	8,9	8,9	8,9	10,3	10,3	10,3	10,3	11,4	11,4	11,4	11,4	16,5	16,5	20,6	20,6
	EERB		6,7	6,7	6,7	6,7	5,9	5,9	5,9	5,9	5,4	5,4	5,4	5,4	4,8	4,8	4,4	4,4
Cooling PL Condition C	PcC	kW	5,7	5,7	5,7	5,7	6,6	6,6	6,6	6,6	7,3	7,3	7,3	7,3	10,6	10,6	13,2	13,2
	EERC		12,1	12,1	12,1	12,1	11,0	11,0	11,0	11,0	10,2	10,2	10,2	10,2	7,8	7,8	8,2	8,2
Cooling PL Condition D	PcD	kW	2,7	2,7	2,7	2,7	2,9	2,9	2,9	2,9	3,4	3,4	3,4	3,4	8,0	8,0	9,0	9,0
	EERD		9,6	9,6	9,6	9,6	10,3	10,3	10,3	10,3	11,7	11,7	11,7	11,7	12,8	12,8	15,4	15,4
Seasonal Heating	Pdesignh	kW	10,0	10,0	10,0	10,0	12,5	12,5	12,5	12,5	13,0	13,0	13,0	13,0	17,5	17,5	19,6	19,6
	SCOP		4,9	4,9	4,9	4,9	4,4	4,4	4,4	4,4	4,2	4,2	4,2	4,2	4,2	4,2	4,3	4,3
	$\eta_{s,h}$	%	191,8	191,8	191,8	191,8	172,9	172,9	172,9	172,9	166,7	166,7	166,7	166,7	166,4	166,4	169,5	169,5
Heating PL Condition A	PhA	kW	8,8	8,8	8,8	8,8	11,0	11,0	11,0	11,0	11,5	11,5	11,5	11,5	15,4	15,4	17,3	17,3
	COPA		3,5	3,5	3,5	3,5	2,8	2,8	2,8	2,8	2,6	2,6	2,6	2,6	2,7	2,7	2,6	2,6
Heating PL Condition B	PhB	kW	5,3	5,3	5,3	5,3	6,7	6,7	6,7	6,7	7,0	7,0	7,0	7,0	9,4	9,4	10,5	10,5
	COPB		4,1	4,1	4,1	4,1	3,7	3,7	3,7	3,7	3,6	3,6	3,6	3,6	3,8	3,8	3,9	3,9
Heating PL Condition C	PhC	kW	3,4	3,4	3,4	3,4	4,3	4,3	4,3	4,3	4,5	4,5	4,5	4,5	6,0	6,0	6,7	6,7
	COPC		7,7	7,7	7,7	7,7	7,5	7,5	7,5	7,5	7,4	7,4	7,4	7,4	6,6	6,6	6,8	6,8
Heating PL Condition D	PhD	kW	4,4	4,4	4,4	4,4	4,4	4,4	4,4	4,4	4,4	4,4	4,4	4,4	6,4	6,4	6,6	6,6
	COPD		9,8	9,8	9,8	9,8	9,8	9,8	9,8	9,8	9,8	9,8	9,8	9,8	8,1	8,1	8,9	8,9
T bivalent	Tbiv	°C	-10	-10	-10	-10	-9	-9	-9	-9	-7	-7	-7	-7	-7	-7	-7	-7
	PhTbiv	kW	10,0	10,0	10,0	10,0	12,0	12,0	12,0	12,0	11,5	11,5	11,5	11,5	15,4	15,4	17,3	17,3
	COPTbiv		2,9	2,9	2,9	2,9	2,6	2,6	2,6	2,6	2,6	2,6	2,6	2,6	2,7	2,7	2,6	2,6
Psbc		W	9	9	9	9	9	9	9	9	9	9	9	9	18	18	18	18
Psbh		W	33	33	33	33	33	33	33	33	33	33	33	33	48	48	48	48
Poffc		W	9	9	9	9	9	9	9	9	9	9	9	9	18	18	18	18
Poffh		W	33	33	33	33	33	33	33	33	33	33	33	33	48	48	48	48
Ptoc		W	33	33	33	33	33	33	33	33	33	33	33	33	48	48	48	48
Ptoh		W	33	33	33	33	33	33	33	33	33	33	33	33	48	48	48	48
Pckc		W	33	33	33	33	33	33	33	33	33	33	33	33	48	48	48	48
Pckh		W	33	33	33	33	33	33	33	33	33	33	33	33	48	48	48	48
PSB		W	33	33	33	33	33	33	33	33	33	33	33	33	48	48	48	48
Sound power level		dB(A)	69	69	69	69	71	71	71	71	73	73	73	73	79	79	83	83
Sound power level in heating		dB(A)	72	72	72	72	75	75	75	75	75	75	75	75	83	83	84	84

Eurovent VRF certified technical data: 2-Pipe ECOi EX ME2 Series 8 to 20 HP · R410A

HP			8 HP		10 HP		12 HP		14 HP		16 HP		18 HP		20 HP	
Outdoor unit			**U-8ME2E8**		**U-10ME2E8**		**U-12ME2E8**		**U-14ME2E8**		**U-16ME2E8**		**U-18ME2E8**		**U-20ME2E8**	
Indoor units combination			**MF2**	**MU2**	**MF2**	**MU2**	**MF2**	**MU2**	**MF2**	**MU2**	**MF2**	**MU2**	**MF2**	**MU2**	**MF2**	**MU2**
Cooling	Pc out [1]	kW	19,7	19,7	24,6	24,6	33,5	33,5	40,0	40,0	45,0	45,0	50,0	50,0	56,0	56,0
	Pec out [2]	kW	5,8	5,8	8,8	8,8	11,6	11,6	13,3	13,3	18,8	18,8	17,9	17,9	23,3	23,3
	EERout		3,4	3,4	2,8	2,8	2,9	2,9	3,0	3,0	2,4	2,4	2,8	2,8	2,4	2,4
Seasonal cooling	SEER		7,4	7,4	7,0	7,0	6,7	6,7	7,2	7,2	6,4	6,4	7,6	7,6	7,0	7,0
	$\eta_{s,c}$	%	294,3	294,3	275,4	275,4	266,6	266,6	286,0	286,0	254,3	254,3	299,2	299,2	278,2	277,0
Cooling PL Condition B	PcB	kW	14,5	14,5	18,1	18,1	24,6	24,6	29,4	29,4	33,1	33,1	36,8	36,8	41,2	41,2
	EERB		5,7	5,7	4,8	4,8	4,6	4,6	4,9	4,9	4,2	4,2	5,0	5,0	4,6	4,6
Cooling PL Condition C	PcC	kW	9,3	9,3	11,6	11,6	15,8	15,8	18,9	18,9	21,3	21,3	23,6	23,6	26,5	26,5
	EERC		11,8	11,8	9,6	9,6	8,1	8,1	9,4	9,4	8,2	8,2	9,8	9,8	9,0	9,0
Cooling PL Condition D	PcD	kW	8,2	8,2	9,3	9,3	8,2	8,2	8,4	8,4	9,4	9,4	10,5	10,5	11,7	11,7
	EERD		13,7	13,7	18,9	18,9	18,4	18,4	22,6	22,6	22,1	22,1	25,2	25,2	24,6	24,6
Seasonal heating	Pdesignh	kW	17,5	17,5	22,0	22,0	26,2	26,2	31,5	31,5	35,0	35,0	39,2	39,2	44,1	44,1
	SCOP		4,8	4,8	4,3	4,3	4,7	4,7	4,3	4,3	4,1	4,1	4,3	4,3	4,1	4,1
	$\eta_{s,h}$	%	188,4	188,4	167,6	167,6	185,8	185,8	168,2	168,2	159,0	159,0	168,7	168,7	160,4	161,0
Heating PL Condition A	PhA	kW	15,4	15,4	19,4	19,4	23,1	23,1	27,8	27,8	30,9	30,9	34,6	34,6	39,0	39,0
	COPA		2,8	2,8	2,6	2,6	2,8	2,8	2,5	2,5	2,3	2,3	2,6	2,6	2,4	2,4
Heating PL Condition B	PhB	kW	9,4	9,4	11,8	11,8	14,1	14,1	16,9	16,9	18,8	18,8	21,1	21,1	23,7	23,7
	COPB		4,5	4,5	3,6	3,6	4,2	4,2	3,7	3,7	3,6	3,6	3,7	3,7	3,5	3,5
Heating PL Condition C	PhC	kW	6,0	6,0	7,6	7,6	9,0	9,0	10,9	10,9	12,1	12,1	13,5	13,5	15,2	15,2
	COPC		7,2	7,2	7,7	7,7	7,7	7,7	7,4	7,4	6,6	6,6	7,1	7,1	6,9	6,9
Heating PL Condition D	PhD	kW	7,1	7,1	7,0	7,0	7,2	7,2	6,7	6,7	6,6	6,6	7,4	7,4	7,4	7,4
	COPD		8,9	8,9	9,6	9,6	9,3	9,3	10,2	10,2	10,0	10,0	10,3	10,3	10,3	10,3
T bivalent	Tbiv	°C	-9	-9	-7	-7	-9	-9	-7	-7	-7	-7	-7	-7	-7	-7
	PhTbiv	kW	16,8	16,8	19,4	19,4	25,1	25,1	27,8	27,8	30,9	30,9	34,6	34,6	39,0	39,0
	COPTbiv		2,6	2,6	2,6	2,6	2,6	2,6	2,5	2,5	2,3	2,3	2,6	2,6	2,4	2,4
Psbc		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
Psbh		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
Poffc		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
Poffh		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
Ptoc		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
Ptoh		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
Pckc		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
Pckh		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
PSB		W	48	48	48	48	48	48	88	88	88	88	88	88	88	88
Sound power level		dB(A)	80	80	81	81	85	85	86	86	87	87	86	86	86	86
Sound power level in heating		dB(A)	81	81	84	84	85	85	85	85	89	89	89	89	89	89

Eurovent VRF certified technical data: 3-Pipe ECOi EX MF3 Series 8 to 16 HP · R410A

HP			8 HP		10 HP		12 HP		14 HP		16 HP	
Outdoor unit			**U-8MF3E8**		**U-10MF3E8**		**U-12MF3E8**		**U-14MF3E8**		**U-16MF3E8**	
Indoor units combination			**MF2**	**MU2**	**MF2**	**MU2**	**MF2**	**MU2**	**MF2**	**MU2**	**MF2**	**MU2**
Cooling	Pc out [1]	kW	22,4	22,4	28,0	28,0	33,5	33,5	40,0	40,0	45,0	45,0
	Pec out [2]	kW	7,2	7,2	10,8	10,8	12,9	12,9	15,4	15,4	19,6	19,6
	EERout		3,1	3,1	2,6	2,6	2,6	2,6	2,6	2,6	2,3	2,3
Seasonal Cooling	SEER		7,0	7,0	7,0	7,0	6,4	6,4	6,7	6,7	6,0	6,0
	$\eta_{s,c}$	%	277,0	277,7	278,9	278,9	252,7	252,7	264,4	264,4	237,7	237,7
Cooling PL Condition B	PcB	kW	16,5	16,5	20,6	20,6	24,6	24,6	29,4	29,4	33,1	33,1
	EERB		4,9	4,9	4,6	4,6	4,3	4,3	4,4	4,4	3,9	3,9
Cooling PL Condition C	PcC	kW	10,6	10,6	13,2	13,2	15,8	15,8	18,9	18,9	21,3	21,3
	EERC		9,1	9,1	9,3	9,3	7,7	7,7	8,3	8,3	7,4	7,4
Cooling PL Condition D	PcD	kW	7,2	7,2	8,5	8,5	7,1	7,1	8,5	8,5	9,4	9,4
	EERD		16,5	16,5	19,7	19,7	15,7	15,7	19,7	19,7	17,4	17,4
Seasonal Heating	Pdesignh	kW	17,5	17,5	22,0	22,0	26,2	26,2	31,5	31,5	35,0	35,0
	SCOP		4,8	4,8	4,2	4,2	4,3	4,3	4,1	4,1	3,8	3,8
	$\eta_{s,h}$	%	189,0	190,9	166,8	166,8	167,8	167,8	162,1	162,1	149,3	149,3
Heating PL Condition A	PhA	kW	15,4	15,4	19,4	19,4	23,1	23,1	27,8	27,8	30,9	30,9
	COPA		2,9	2,9	2,5	2,5	2,7	2,7	2,4	2,4	2,2	2,2
Heating PL Condition B	PhB	kW	9,4	9,4	11,8	11,8	14,1	14,1	16,9	16,9	18,8	18,8
	COPB		4,6	4,6	3,7	3,7	3,7	3,7	3,6	3,6	3,3	3,3
Heating PL Condition C	PhC	kW	6,0	6,0	7,6	7,6	9,0	9,0	10,9	10,9	12,1	12,1
	COPC		7,1	7,1	7,4	7,4	6,9	6,9	7,1	7,1	6,5	6,5
Heating PL Condition D	PhD	kW	6,7	6,7	6,9	6,9	6,5	6,5	6,6	6,6	6,6	6,6
	COPD		8,7	8,7	9,4	9,4	9,0	9,0	9,6	9,6	9,6	9,6
T bivalent	Tbiv	°C	-9	-9	-7	-7	-9	-9	-7	-7	-7	-7
	PhTbiv	kW	16,8	16,8	19,4	19,4	25,1	25,1	27,8	27,8	30,9	30,9
	COPTbiv		2,6	2,6	2,5	2,5	2,3	2,3	2,4	2,4	2,2	2,2
Psbc		W	17	17	17	17	17	17	25	25	25	25
Psbh		W	50	50	50	50	50	50	91	91	91	91
Poffc		W	17	17	17	17	17	17	25	25	25	25
Poffh		W	50	50	50	50	50	50	91	91	91	91
Ptoc		W	17	17	17	17	17	17	25	25	25	25
Ptoh		W	50	50	50	50	50	50	91	91	91	91
Pckc		W	50	50	50	50	50	50	91	91	91	91
Pckh		W	50	50	50	50	50	50	91	91	91	91
PSB		W	50	50	50	50	50	50	91	91	91	91
Sound power level		dB(A)	79	79	80	80	84	84	86	86	86	86
Sound power level in heating		dB(A)	77	77	82	82	86	86	86	86	88	88

1) Pc out= Capacity. 2) Pec out= Input power. * Please refer an official website (https://www.eurovent-certification.com/en) for each test condition.

Control and connectivity

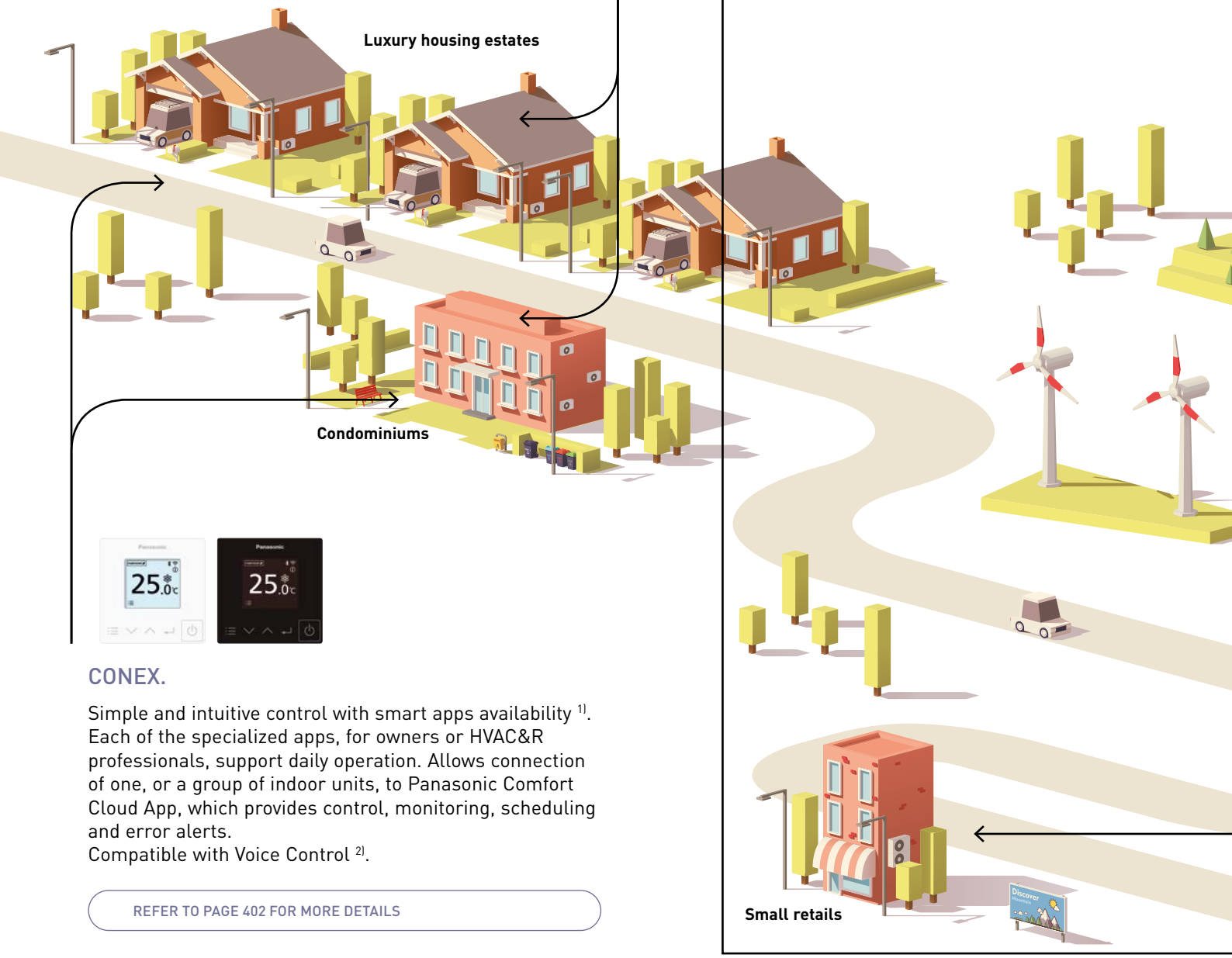
Panasonic has developed a wide range of control systems to offer the best options for commercial and residential needs, from th´e individual remote controllers, to the newest technology capable of controlling your building anywhere in the world. The simple to use cloud software can even be used from a portable device.

Control and connectivity map for Panasonic business areas

A wide range of control and connectivity solutions to suit a variety of applications. Integration capability, scalable solutions and smart connectivity offer a unique portfolio to meet every customer's needs.

Integration with Home Automation or KNX.

Simple and flexible solution to integrate Panasonic heating and cooling systems into smart home energy solutions.



CONEX.

Simple and intuitive control with smart apps availability [1].
Each of the specialized apps, for owners or HVAC&R professionals, support daily operation. Allows connection of one, or a group of indoor units, to Panasonic Comfort Cloud App, which provides control, monitoring, scheduling and error alerts.
Compatible with Voice Control [2].

REFER TO PAGE 402 FOR MORE DETAILS

1) App connectivity available with CZ-RTC6WBL, CZ-RTC6BL, CZ-RTC6WBLW and CZ-RTC6BLW.
2) Alexa, Google Home.... Giving indication of compatible options.
3) Panasonic AC Smart Cloud connection required to access Panasonic AC Service Cloud.
4) 2 DI on standard version and 4 DI/DO available on Modbus version.
5) 128 indoor units as standard, additional communication adaptor required for 256 units.

Panasonic AC Smart / Service Cloud.

Smart multi-site solution provides users with complete scalable control for all business installations, 24/7, from any connected location.
Panasonic AC Smart Cloud for business owners and Panasonic AC Service Cloud [3] for HVAC service/maintenance companies.

REFER TO PAGE 394 FOR MORE DETAILS

VRF Smart Connectivity+.

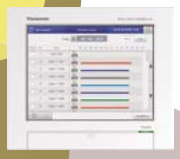
Control the air quality of guest rooms utilising CO_2 and humidity sensors. Easy BMS integration for entire building management.

REFER TO PAGE 388 FOR MORE DETAILS

Controller for hotel application.

Intuitive controller allowing up to 4 digital inputs and outputs [4]. Perform the most common operations in hotel rooms, such as key cards and window contacts.

REFER TO PAGE 414 FOR MORE DETAILS



Intelligent controller.

Centralized controller with large LCD touch screen display. Maximum 256 [5] indoor units connectable, ideal for larger buildings.

REFER TO PAGE 410 FOR MORE DETAILS

Integration with BACnet or Modbus.

Easy and reliable solution to integrate Panasonic heating and cooling systems into the building management systems in your business.

VRF Smart Connectivity+

Through thorough energy management, Panasonic's VRF Smart Connectivity+ is a state-of-the-art solution providing energy saving and comfort as well as simple installation, operation and running.

VRF Smart Connectivity+ solution offers efficient energy management, high IAQ (indoor air quality), and air conditioning control.

Panasonic Schneider Electric

Dramatic reduction of OpEx with outstanding IAQ.

3 built-in sensors: Temperature, RH and occupancy.
ZigBee wireless sensors: CO_2 / temperature / RH%, window / door, ceiling / wall / water leakage.
Relay Pack, Hotel room controller.

Ultimate customisation.

Customisable colour background.
Custom display/icons, messages.
Programmable logic (also stand alone).
Various controls and various external connection devices.

User-/owner-friendly.

Colour touch screen.
Simple and easy to use.
22 languages.
Easy-to-understand error description.

Easy design and Plug & Play to reduce CapEx.

Simple Plug & Play VRF connection to Building Energy Management System (BEMS).
Stand alone or BEMS connected.
Easy installation of ZigBee sensors.

Energy management system for rooms.

Each room is monitored by precision sensors, making it possible to provide high comfort levels without wasting energy.

VRF Smart Connectivity+: SER8150.

Management system for the entire building.

A Building Energy Management System (BEMS) can also be connected with Plug & Play centralised control of the entire building's energy consumption.

1 Air quality control

Optimum IAQ is realized using the CO_2 and humidity sensors. The interior environment remains comfortable, while heating and cooling costs are minimized.
The CO_2 sensor can control ventilation systems, which contribute to improving the room's air quality.

2 Easy installation and integration

A single device is all that's required for occupancy and optimum automatic indoor air quality (IAQ) control. Simple operation with an interface that it is not an owned device contributes to increased energy efficiency and productivity for reduced capital expenditure (CapEx) and operating expense (OpEx).

3 Other equipment control

One room controller manages various devices including lighting and the blinds.
Control ventilation systems and other external connection devices with this BEMS.

Door/window wireless sensor.
Door and window contact detection sensor to monitor opening and closing.

Wall/ceiling motion/ temperature/humidity sensor.
Wall and ceiling sensor to detect the presence or absence of occupants.

CO_2 /temperature/humidity sensor.
Monitor indoor air quality, review data on interfacing devices, and control fresh air inside customisable zones.

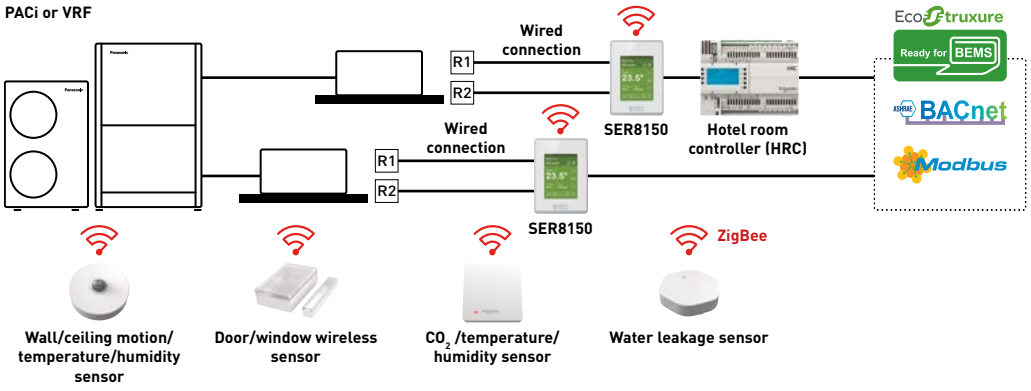
Water leakage sensor.
Two sensing pads under the body activate when water is present between the two pads. Detecting the water, the sensor reports the event to the controller (and BEMS).

Hotel room controller (HRC).
The Hotel room controller controls connected guest room devices and aggregates data, making it visible to guest room and property management systems.

VRF Smart Connectivity+

Energy management system for rooms.

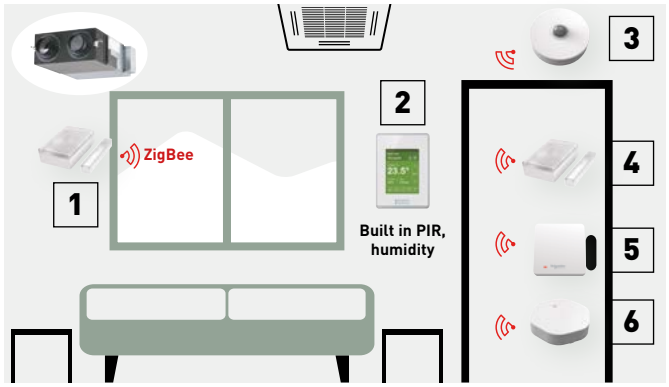
By installing a wall/ceiling motion temperature sensor, window/door sensor, and CO_2 sensor in the room, ideal, waste-free air conditioning is achieved.



Sensing and control technology

Using sensors from Schneider Electric, high-quality occupancy and automatic IAQ control are realised. The sensors detect the presence or absence of occupants, and the opening and closing of doors and windows to achieve the most efficient energy management and exceptional air-conditioned comfort.
Flexible installation is possible to match different applications and building features such as walls, ceilings and proximity to doors and windows. No wiring means extra installation versatility.

Batteries last for up to five years (10-year battery for CO_2 sensor) and are easy to install and replace.



1 | Window sensor (option).
2 | Room controller.
3 | Ceiling motion sensor (option).
4 | Door sensor (option).
5 | CO_2 sensor (option).
6 | Water leakage sensor (option).

Pana Net Con, RH, No PIR, SE Brand, R1R2.
SER8150R0B1194

Pana Net Con, RH, PIR, SE Brand, R1R2.
SER8150R5B1194

Wireless ZigBee® Pro communication card.
VCM8000V5094P

Hotel room expansion module 14 indoor units.
HRCEP14R

Hotel room controller 28 indoor units.
HRCPBG28R

Hotel room controller w/display 42 indoor units.
HRCPDG42R

* Those accessories require system integrator support on site.

Sensor with room CO_2, temperature and humidity.
SED-CO2-G-5045

Sensor with room temperature and humidity.
SED-TRH-G-5045

Door/window sensor.
SED-WDC-G-5045

Wall/ceiling motion/ temperature/humidity sensor.
SED-MTH-G-5045

Water leakage sensor.
SED-WLS-G-5045

Cover frame. Silver.
FAS-00

Cover frame. White.
FAS-01

Cover frame. Glossy translucent white.
FAS-03

Cover frame. Light tan wood.
FAS-05

Cover frame. Dark brown wood.
FAS-06

Cover frame. Dark black wood.
FAS-07

Cover frame. Brushed steel finish.
FAS-10

Up to 5 year battery life (batteries included). Battery life of CO_2 sensor up to 10 years. Battery level is a data point.

VRF Smart Connectivity+

Smart management solutions.

1 Hotels

Room key card or key cardless solutions for hotels.
The SER8150 and ZigBee sensor automatic detection function offer optimal air conditioning regardless of whether there is a hotel room key or not. Sensors detect the presence or absence of occupants and the opening and closing of doors and windows for the optimum air-conditioned environment guests expect. Automatic control ensures the most efficient operation when guests are away or when windows are open. This contributes to an appreciable reduction in operating costs.

2 Small and medium offices

CO_2 sensors (option) and humidity sensors.
CO_2 sensors take measurements in units of ppm, and humidity sensors enable fine air quality control. This creates the most comfortable space for occupants while contributing to improved employee satisfaction.

3 Super markets

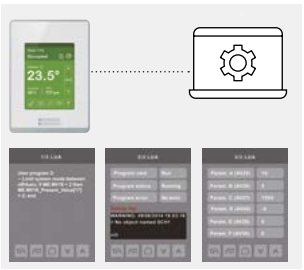
Humidity sensors.
Humidity sensors enable automatic dehumidification for the optimum IAQ regardless of climatic conditions. This creates an even more comfortable environment for customers and employees.

Innovative and unrivalled advantages

Colour and design to match office interiors.
Colour combinations and design can be set to match different facilities.

Easy-to-understand error description.
Error description during an emergency is easy to understand, enabling staff to respond quickly.

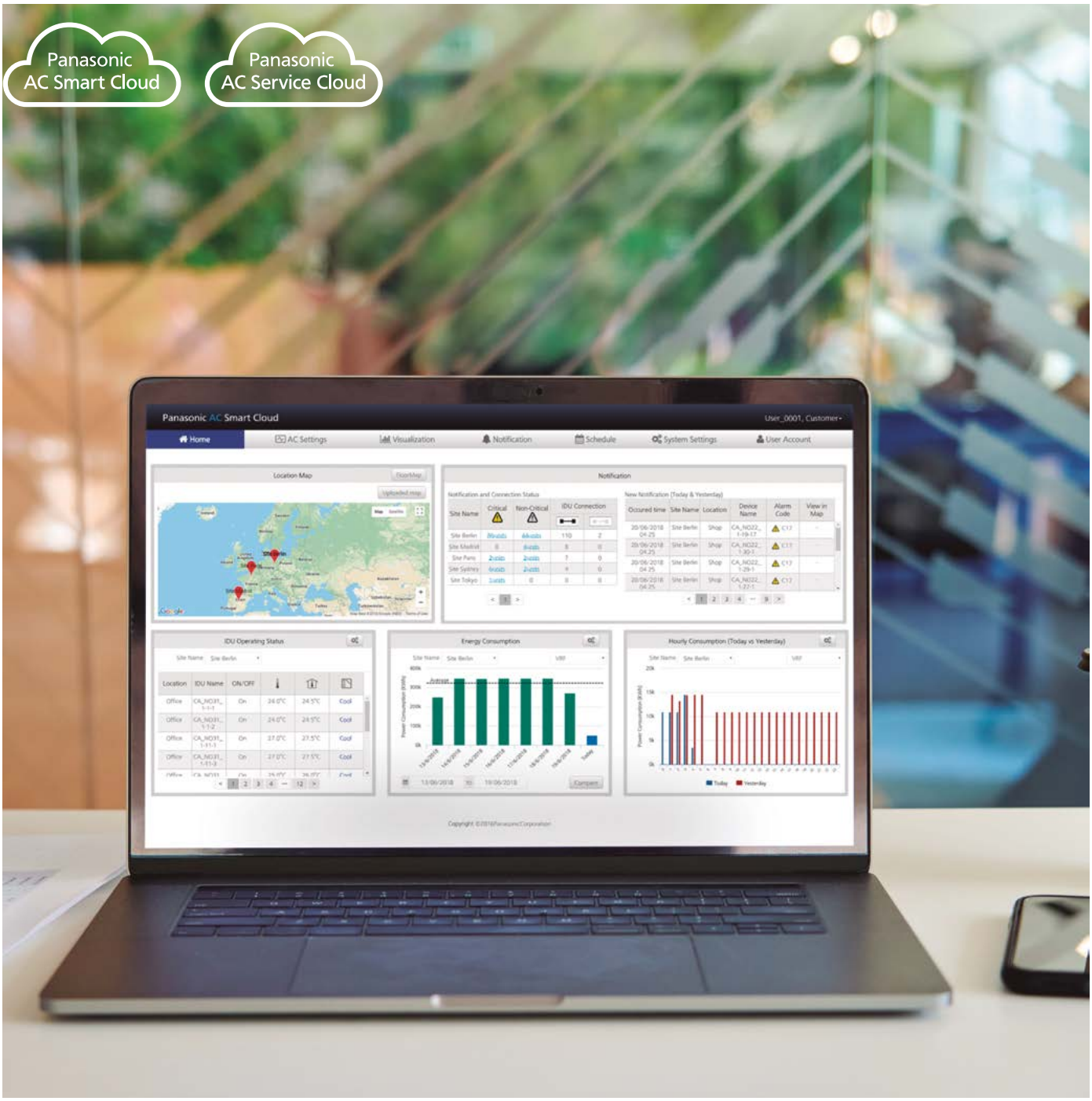
Customisation in 22 languages possible.
The display can be customised to match the native languages of guests to enable smooth, stress-free communication for hospitality at its finest.



Programmable logic.
Full customisation and updating of remote controller logic to match conditions.

Smart multi-site control solution

Modern and scalable energy management for your Heating & Cooling Solutions.
Smart multi-site control solution. One screen with endless possibilities.
The smart multi-site control solution from Panasonic allows you to have complete control of all your installations. With a simple click, all your units from several locations receive status updates in real-time, preventing breakdowns and optimising costs.



Installation.
Easy installation and configuration.

Connectivity.
A standard LAN connection with internet access (fibre or mobile).

Reliability.
24/7/365 days connection.

Use.
Real-time control from anywhere.

Roles and permission.
Easily configure different access roles for each user.

Security.
Highly secure communication and complaint with GDPR.

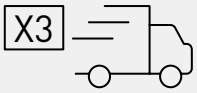
What Panasonic provides you?

Energy savings.

AC can be between 40-60% of the total electricity bill.
Even small setting changes can provide a huge impact in energy savings for your buildings. Panasonic AC Smart Cloud provides you energy consumption data of your site(s) and energy saving functions such as control setting limitation, auto off, scheduling, temperature range limits, etc.

Healthy comfort.

How to secure a comfortable environment by avoiding incorrect AC operation?
Incorrect temperature settings can create discomfort for users as well as and unhealthy environment for employees, visitors or customers. Analyse the set point and room temp history, and fix the right mode and temperature for each room.

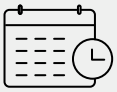


Service speed.

On average, 2-3 AC technician' visits are required on site when an error/issue appears in an AC system.
Avoid wasted site visits, analysing the behavior of the AC system remotely without the need of a technician visit on site.

Downtime.

System "downtime" can impact the customers buying experience / productivity.
Keep your business running, reducing the risk of system downtime. Detect potential failures in advance or fixing them swiftly should issues occur.



Maintenance.

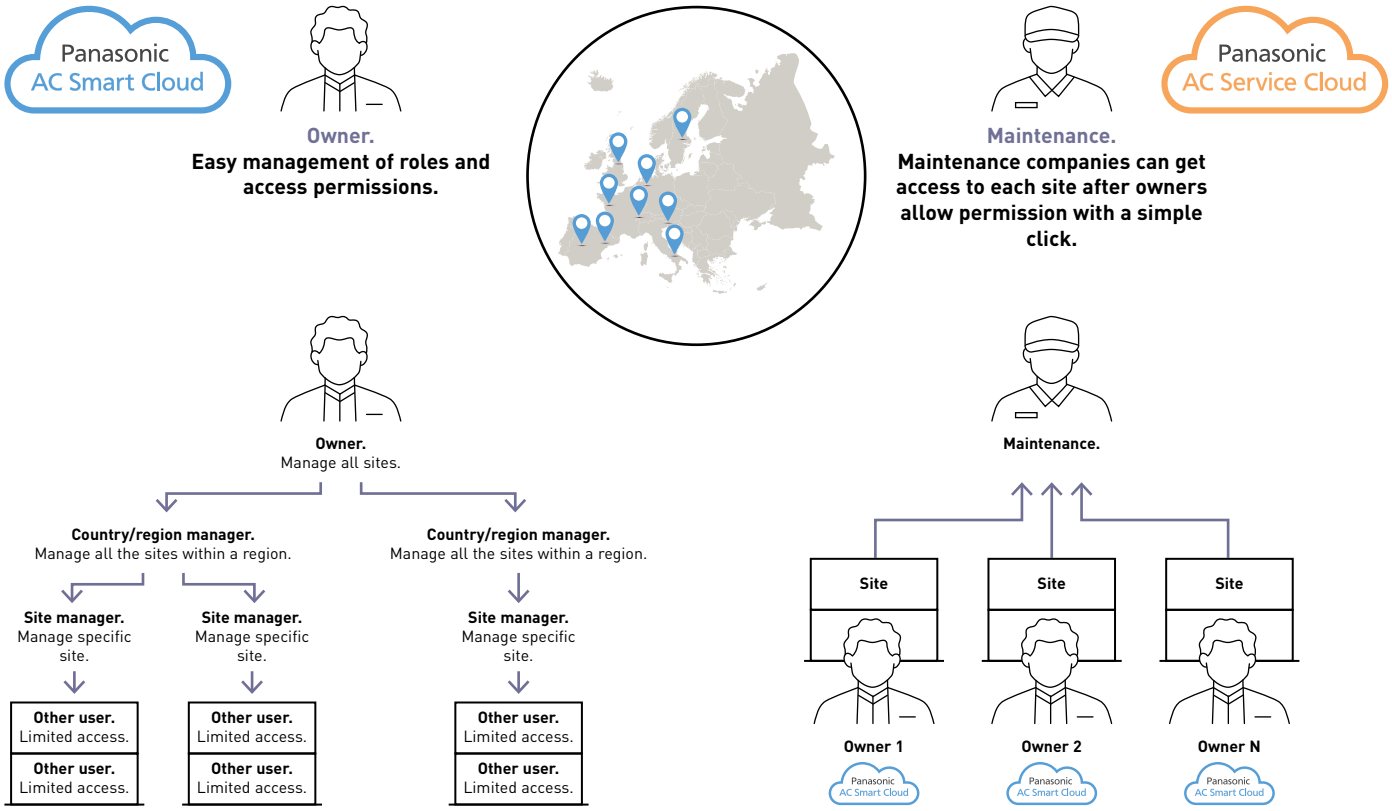
A proper maintenance schedule prevents future malfunctions and reduces energy consumption.
Remotely check all the advanced parameters of the system and plan the maintenance properly. Assign the right engineer for the required task.

Life of system.

Replacing HVAC is a huge impact on investment.
Making good use of the system, taking earlier action when abnormal signal occurs and keeping regular maintenance will expand the life your system, but will also keep the expected performance operation.

Full multi-site and user control

Panasonic Smart and Service Cloud is based on location. Each location can allow access for multiple users whether in the same building or via remote access. The scalability allows addition of multiple sites and customise the access of your team and the access of your trusted service partner.



Panasonic AC Smart Cloud

Centralise control of your business premises, from wherever you are, 24/7/365.

The AC Smart Cloud system from Panasonic allows you to have complete control of all your installations from your tablet or from your computer. In a simple click, receive status updates, from all of your installations wherever the location, reducing potential breakdowns and optimising costs.

1 Comfort

Keep the comfort of workers, visitors, and customers to increase satisfaction and productivity.

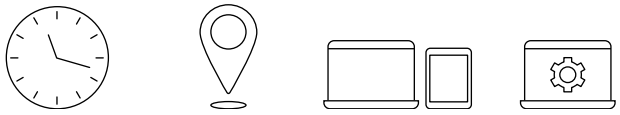
2 Return on investment

Optimising the operation of your heating and cooling system and the possibility to monitor remotely can expand the life of your assets.

3 Lower running cost

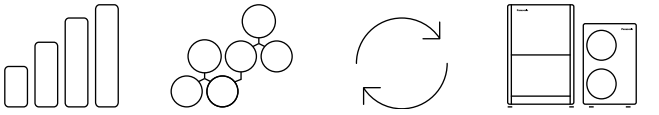
Controlling settings in real-time and monitoring energy consumption contributes to reducing your energy bill.

Flexible solution for your business



Anytime | Anywhere | Multiplatform | Internet browser

Scalable solution for your business



Small to large | 1 to multi-sites | Upgrade features [1] | RAC[2]/PACi/ECOi/ECO G

1) Customized to meet user demand / Continuous upgrades: new functions and product introductions / IT smart management. 2) CZ-CAPRA1 is required.

Key functions and uniqueness

Multi-site monitoring.
· It doesn't matter how many sites you have. It is easy to manage, operate, compare sites, locations and rooms.

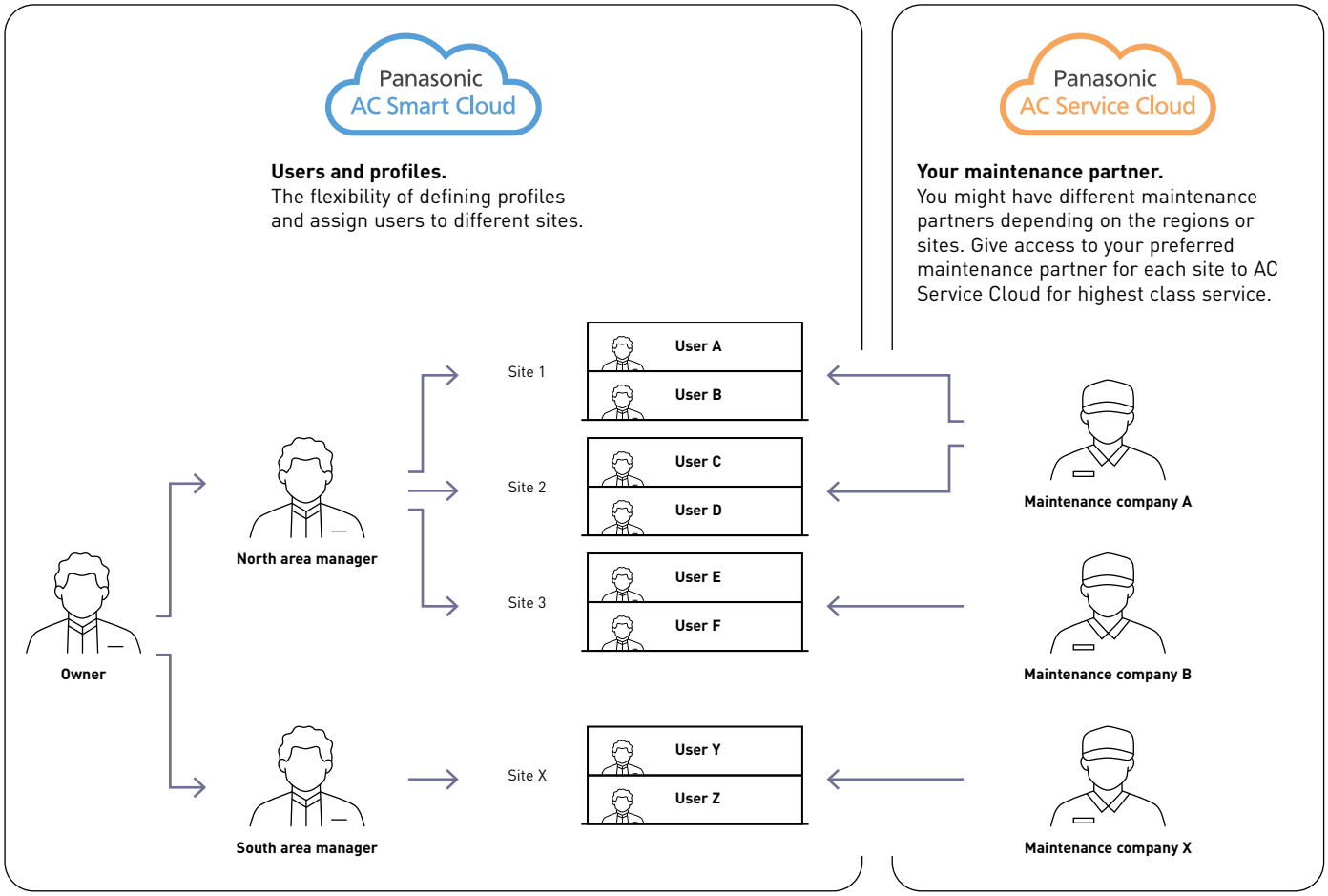
Powerful statistics for energy savings.
· Power consumption, capacity and efficiency level can be compared with different parameters (yearly / monthly / weekly / daily basis)

Schedule setting.
· Set yearly / weekly / holidays timers as you please

Maintenance notification.
Receive an error notification by email with floor layout:
· Maintenance notification of ECOi / ECO G outdoor units
· Remote service checker function

Controller multi-site.

Including all advantages for single site, the scalability of AC Smart Cloud offers you an excellent toll for multi-site management.



List of features

Panasonic AC Smart Cloud	Functionalities
Home screen	Overview of: operating status, location map, weather information, notification, energy consumption, efficiency, eco-friendly building list
AC settings	Indoor unit monitoring and remote control, outdoor unit details, cloud adapter details, floor map view, maintenance notification (installer)
Visualization	Statistical data regarding energy consumption, capacity and efficiency ranking; per indoor unit, unit group or refrigerant circuit
Notification	Warnings and alarms, maintenance intervals
Schedule	Schedule settings and results
Energy saving	Temperature range limits, unattended auto shutoff, temperature auto return, energy saving timer, demand/peak shaving
Demand control	Indoor unit and outdoor unit demand settings
Event control	Control inputs: alarms, digital inputs, indoor units. Control outputs: digital outputs, indoor units
System settings	CO_2 factor, distribution groups, area allocation, cut-off requests, site management, group display, site location, software version
User account	New user registration, updating users, user lists, user roles
Floor map Editor	Floor map import and unit assignment
Help	Installer information, alarm mail setting, user data, account management, company / customer information, terms of use, privacy notice, cookie policy, user manual, FAQ. For installers: user manual, technical data, installation instructions
Additional functions for installers	Cloud adapter installation process, remote service checker data recording and download, remote cloud adapter firmware update

Panasonic AC Service Cloud

Panasonic AC Service Cloud provides maintenance companies a unique tool to deliver advanced service and maintenance features, decreasing response times, reduce sites visits and better allocate resources.

1 Response time and zero down time

Providing technical information about abnormalities and checker functions enables the AC installer and maintainer to remotely identify and fix issues more quickly, even before they occurs.

2 Reduce unnecessary trips

It reduces the cost of unnecessary trips, reducing the CO_2 emissions associated with transport.

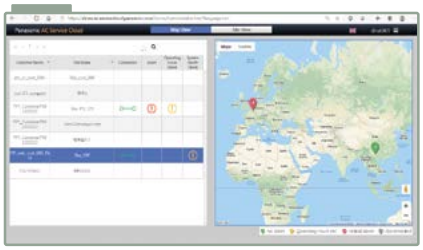
3 Maintenance planning

With a simple click, easily identify the nature of potential issues, enabling issue classification, prioritisation of resources and better planned site visits, assigning the right engineer for the job.

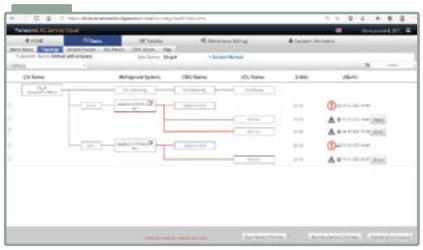
4 All at a glance with scalability

Remotely view all sites requiring maintenance of Panasonic HVAC. Increase the number of sites maintained, taking advantage of future updates and features of the Panasonic AC Service Cloud.

Key functions



All sites at a glance.



Topology.

Floor map view.

Alarm status.

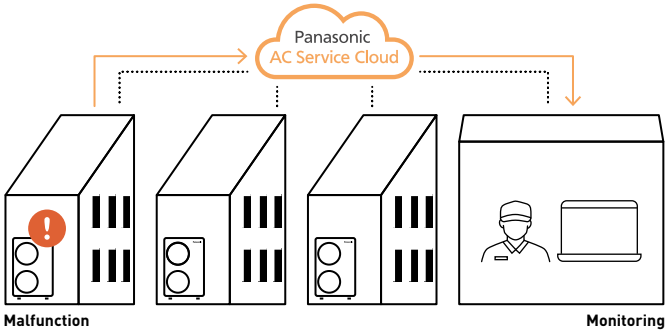
Owners can manage different maintenance companies for each site, enabling or disabling access with just one click. Maintenance companies can have access to all sites where different owners allow permissions.

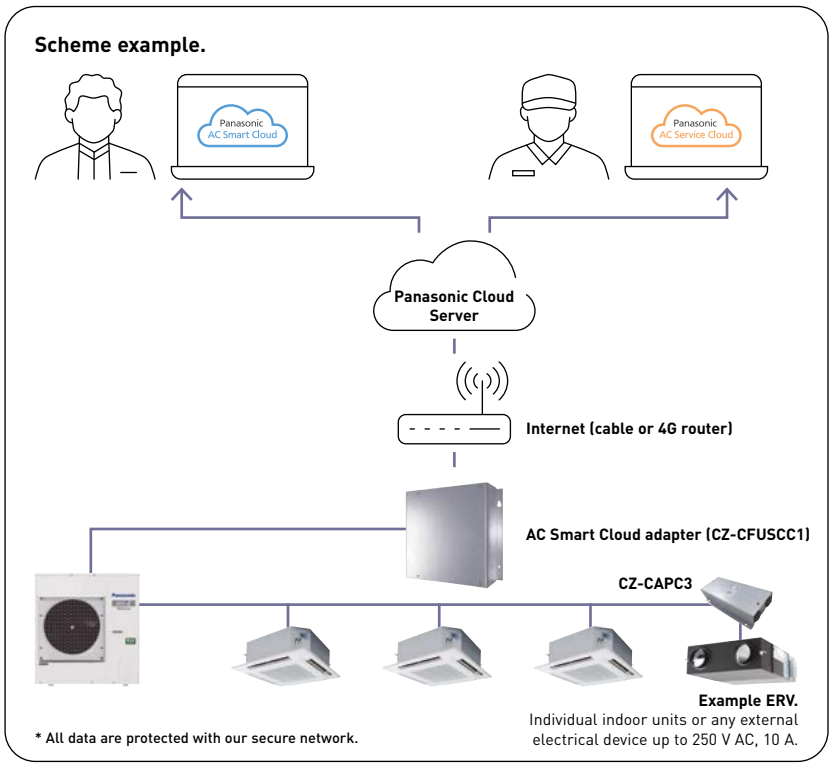
System health check function

Self diagnosis function is available in the AC Service Cloud. It automatically predicts potential malfunctions and helps to speed up your service process.

· Consecutive automatic monitoring at 15 minute intervals
· Key notifications in the event potential malfunction is detected
· 2D graph display to help with detailed analysis
· Threshold values can be easily adjusted

* For compatible models, please contact an authorized Panasonic dealer.





Technical requirements:
· CZ-CFUSCC1 – AC Smart Cloud adaptor
· Internet connection via: LAN with access to internet

Optional hardware:
· CZ-CAPRA1 – integration of RAC systems
· Pulse meters (supplied by others): up to 3 pulse meters (gas or power meters) can be connected to the cloud adapter, extendable by additional communication adapters (CZ-CFUSCC2)
· CZ-CAPC3 - ON / OFF monitor and control

Systems supported by AC Smart Cloud adapter:
· ECOi
· ECO G
· PACi / PACi NX
· RAC (CZ-CAPRA1 interface is required)
· ERV (CZ-CAPC3 interface is required)

List of features

Panasonic AC Service Cloud	Functionalities
Home screen	Map view and site view with site names, connection status and alarm status
Status	Alarm status, site topology, remote service checker, indoor unit monitoring and remote control, outdoor unit details, floor map view with service manual download
Statistics	Refrigerant circuit view (current data and recorded data), data table view, 2D graph view
Maintenance settings	Notifications and alarms, maintenance intervals setting (operating hours)
Customer list	List of connected customers, requests to access customer sites
Cloud adapter	Cloud adapter installation wizard, remote firmware update
Floor map editor	Floor map import and unit assignment
Help	Alarm mail setting, user data, account management, company / customer information, terms of use, privacy notice, cookie policy, user manual, user manual, technical data, installation instructions, FAQ
System health check function*	Self diagnosis function is available in the Panasonic AC Service Cloud. It automatically predicts potential malfunctions and helps to speed up your service process

* Optional.

1 Panasonic AC Smart Cloud packages

Get the cloud base kit (CZ-CFUSCC1 + start up) and register to one of the subscription periods with or without data connectivity.

The selection of the right Panasonic AC Smart Cloud package depends on the size of the installation.

	Product	Reference	Items included in a kit	Description
Up to 32 indoor units	Cloud base kit	KIT-ACSCBASE32	CZ-CFUSCC1	Cloud adapter for PACi, ECOi and ECO G [1]
			SR-ACSCSTART32	AC Smart Cloud start up to 32 indoor units
	AC Smart Cloud access fee	SR-ACSC1Y32		AC Smart Cloud access fee for 1 year
	AC Smart Cloud access fee with data connectivity	SR-ACSC1Y32CNT		AC Smart Cloud access fee for 1 year with data connectivity
Up to 64 indoor units	Cloud base kit	KIT-ACSCBASE64	CZ-CFUSCC1	Cloud adapter for PACi, ECOi and ECO G [1]
			SR-ACSCSTART64	AC Smart Cloud start up to 64 indoor units
	AC Smart Cloud access fee	SR-ACSC1Y64		AC Smart Cloud access fee for 1 year
	AC Smart Cloud access fee with data connectivity	SR-ACSC1Y64CNT		AC Smart Cloud access fee for 1 year with data connectivity
Up to 128 indoor units	Cloud base kit	KIT-ACSCBASE128	CZ-CFUSCC1	Cloud adapter for PACi, ECOi and ECO G [1]
			SR-ACSCSTART128	AC Smart Cloud start up to 128 indoor units
	AC Smart Cloud access fee	SR-ACSC1Y128		AC Smart Cloud access fee for 1 year
	AC Smart Cloud access fee with data connectivity	SR-ACSC1Y128CNT		AC Smart Cloud access fee for 1 year with data connectivity
Up to 512 indoor units	Cloud base kit	KIT-ACSCBASE512	4x CZ-CFUSCC1	Cloud adapter for PACi, ECOi and ECO G [1]
			SR-ACSCSTART512	AC Smart Cloud start up to 512 indoor units
	AC Smart Cloud access fee	SR-ACSC1Y512		AC Smart Cloud access fee for 1 year
	AC Smart Cloud access fee with data connectivity	SR-ACSC1Y512CNT		AC Smart Cloud access fee for 1 year with data connectivity

1) The adapter has to be sold always together with start up. * One cloud adapter is required per 128 indoor units. ** Model references up to 192/256/320 indoor units are also available.

2 Panasonic AC Service Cloud

	Product	Reference	Description
Service function	Panasonic AC Service Cloud	SR-ACSC1Y32M	AC Service Cloud access for 1 year up to 32 indoor units
	System Health Check [2]	SR-ACSC1Y32SHC	System Health Check access for 1 year up to 32 indoor units

2) AC Service Cloud is required to use this function.

3 Optional services

Product	Reference	Items included in a kit	Description
Floor map [3]	SR-ACSC1FLRUP		Upload 1 floor map or maximum 32 units
Floor map [3]	SR-ACSC1FLRCP		Create 1 floor map or maximum 32 units
Indoor assign [3]	SR-ACSC32ASSIGN		Assign indoors up to 32 units
4G connectivity kit [4]	KIT-ACSC4GCNT	PAW-ACSCRTR4G	AC Smart Cloud 4G connection kit including 4G router and SIM card
		PAW-ACSCSIM	
4G Router	PAW-ACSCRTR4G		4G Router for Panasonic AC Smart Cloud
SIM card	PAW-ACSCSIM		SIM card without data amount

3) Floor map and indoor assignments can be done by customer without additional charge. 4) Data amount of SIM card is not included.

Selection steps

What service do you need? There are 2 options as follows.

AC Smart Cloud only.

Please follow step: 1

AC Smart Cloud + AC Service Cloud.

Please follow step: 1 2

* AC Smart Cloud is always required to use Panasonic AC Service Cloud.

1 Setup for AC Smart Cloud.

Panasonic AC Smart Cloud

Cloud adapter.
(CZ-CFUSCC1)

\+

Start up.
Depending on the size of the installation.
SR-ACSCSTART

Annual access fee

1 | **Determine your number of indoor units.**

2 | **Select the appropriate cloud base kit.**

3 | **Select your annual access fee options with and without data connectivity.**

* One cloud adapter (CZ-CFUSCC1) is required per site.

2 Setup AC Service Cloud

Panasonic AC Service Cloud

The service cloud subscription (SR-ACSC1Y32M) is for up to 32 indoor units as standard.
For larger systems exceeding this indoor unit quantity, multiple packages are required.
For example, please order 2 units of SR-ACSC1Y32M if the number of indoor units is from 33 to 64.
If system health check function is required in AC Service Cloud, choose SR-ACSC1Y32SHC.

3 Choose optional services to suit your needs.

- Floor map upload
- Floor map creation
- Indoor assign
- Power meter
- 4G connectivity

Commercial Wi-Fi Adaptor

Panasonic CZ-CAPWFC1 interface adaptor, allows connection of one or a group of indoor units to Panasonic Comfort Cloud App, which provides control, monitoring, scheduling, and error alerts. Control PACi, ECOi, and ECO G indoor units with your smartphone whenever and wherever you are, by using Panasonic Comfort Cloud App and Commercial Wi-Fi Adaptor.

1 From 1 to 200 units

User can control up to 10 different sites, with up to 20 units / groups per site.
Additionally, one adaptor can be connected to 1 indoor or to a group of up to 8 indoors.

2 Voice control compatible

Registering the unit to Panasonic Comfort Cloud App makes it compatible with the most popular voice assistants.

3 Multi user

The Panasonic Comfort Cloud App allows multi-user access control, whilst allowing user restriction to specific units.

4 Easy scheduling

Complex weekly scheduling made simple. Not only for one unit, but across multiple sites, and from a smartphone.

5 Energy monitor

See the estimated power consumption and compare with other periods, to see how energy consumption can be further reduced. Check list of units that provides consumption*.

* Function available depending on the model.

6 Error codes

Error code notification through the App, provides early notification and allows for faster repair.

Advanced smartphone control

This scalable solution is ideal for one system, one site or multiple locations. Coupling the adapter with the already feature rich systems, makes it an ideal solution for residential and commercial applications.

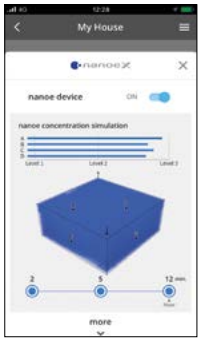
Home screen

Basic settings

Statistics

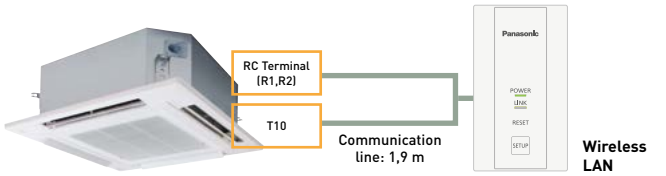
Weekly timer

nanoe™ X simulation



Connection Diagram

Commercial Wi-Fi Adaptor wiring length is 1,9 m and connects to indoor unit via T10 connector and R1/R2 terminal connectors.



Download free app:
Panasonic Comfort Cloud App.

Other hardware requirements: Router and Internet (purchase and subscribe separately).

Panasonic Cloud Server is designed, operated and managed by Panasonic.

Panasonic

App Store

Google Play

Input Voltage	12 V DC (supplied from T10 connector)
Power Consumption	Maximum 2,4 W
Size (H x W x D)	120 x 70 x 25 mm
Weight	190 g (including communications lines)
Interface	1 x Wireless LAN
Wireless LAN Standard	IEEE 802,11 b/g/n
Frequency Range	2,4 GHz band
Operating range	0 ~ 55 °C, 20 ~ 80 RH%
Connectable indoor unit	1 unit
Length of communication line	1,9 m (included)

CONEX. Devices and apps

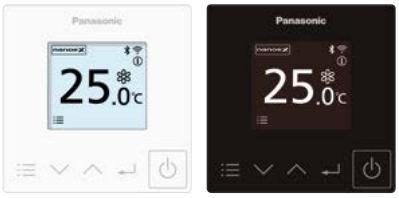
CONEX provides comfort and control for varying user needs. Accessible, flexible, and scalable with different controllers and apps. Perfectly meeting requirements of modern controls for end user, installer, and service.

Intuitive operation with simple and modern design panel. Sophisticated design with white or black flat panel and compact body. From residential to commercial, the wired remote controller series perfectly matches with all kinds of modern building. It enables user to recognize each function with a simple glance.

REFER TO PAGE 420 FOR MORE DETAILS

1 Intuitive control with stylish design

· Simple operation at a glance
· Clean face with full flat and LCD display
· Compact body, only 86x86 mm



2 Control comfort with your smartphone

· Flexible control options with IoT integration
· Panasonic H&C Control App for daily remote control operation
· Panasonic Comfort Cloud App for remote operation 24/7/365

3 Easy maintenance with service support app

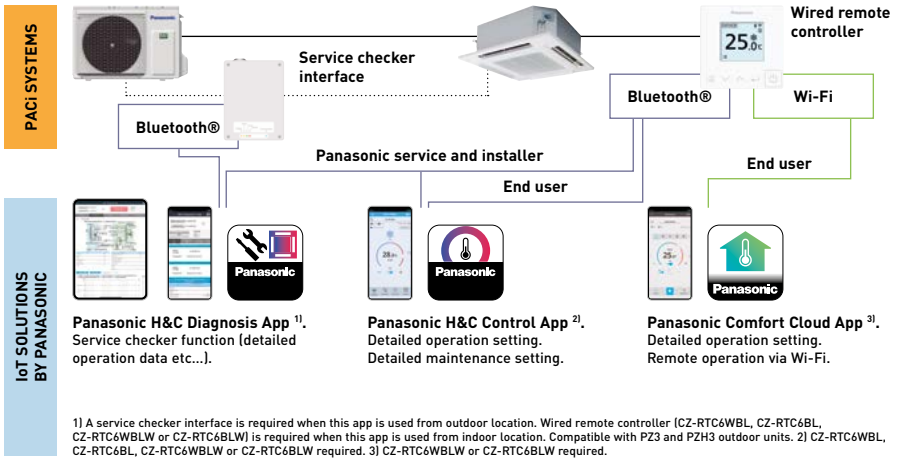
· Quick and easy app set-up for system setting
· Panasonic H&C Diagnosis App enables the user to obtain detailed system operation data*

* The use of apps depends on the remote controller model.

CONEX with IoT integration

CONEX

The wired remote controller series is fully integrated with IoT solutions developed by Panasonic.
Detailed operation, maintenance setting and service operation are all possible with smartphone or tablet.



1) A service checker interface is required when this app is used from outdoor location. Wired remote controller (CZ-RTC6WBL, CZ-RTC6BL, CZ-RTC6WBLW or CZ-RTC6BLW) is required when this app is used from indoor location. Compatible with PZ3 and PZH3 outdoor units. 2) CZ-RTC6WBL, CZ-RTC6BL, CZ-RTC6WBLW or CZ-RTC6BLW required. 3) CZ-RTC6WBLW or CZ-RTC6BLW required.

Service checker interface.

The service checker interface provides easy access to service parameters and service checker data via Bluetooth®.
· A Service checker interface for PACi NX Series*
· Bluetooth® connection
· Panasonic H&C Diagnosis App

* Available as a spare part, compatible with PACi NX Series.

Input voltage	220-240 V ~ 50-60 Hz (supplied from outdoor unit)
Power consumption	Maximum 2,4 W (including outdoor units)
Size (H x W x D)	175 x 125 x 50 mm
Weight	—
Interface	Bluetooth® 4.2 or later
Frequency range	2,4 GHz band*
Operating range - Temperature / Humidity	0 ~ 40 °C / 20 ~ 80% (no condensation)

* Frequency band in which the radio equipment operates; 2402 - 2480 MHz.
* Maximum radio-frequency power transmitted in the frequency bands in which the radio equipment operates; +0 dBm.

CONEX. Devices and apps

Flexible control options with IoT integration. 3 different apps for individual usage.

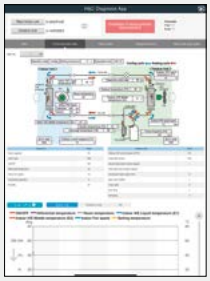
Panasonic H&C Diagnosis App for service and installer

Tool for diagnosis and troubleshooting.

Available functions:
· AC control
  - System view
  - Refrigerant circuit view
· Real-time data
  - Indoor unit
  - Outdoor unit
· Refrigerant cycle diagram and graph
· Data recording
· History data
· Error code tables

Main

Operation data



History data

Equipment control

Panasonic H&C Control App for end user, service and installer

Detailed operation setting. Detailed maintenance setting.

Available functions:
· ON / OFF, mode, temperature, air flow volume, air flow direction
· Weekly timer
· All energy saving functions
· Alarm display and history
· Filter sign
· Test run
· Sensor value monitor
· Simple setting mode
· Detailed setting mode
· Key lock
· Ventilation fan control
· Display contrast adjustment
· Rotation, redundancy
· Quiet mode
· nanoe™ X
· Power consumption
· Unit naming

Home screen

Basic settings

Statistics

Weekly timer

Advanced settings

Panasonic Comfort Cloud App for end user

Remote operation via Wi-Fi.

Available functions:
· ON / OFF
· Mode
· Temperature
· Air flow volume
· Air flow direction
· Weekly timer
· Temperature setting range limitation
· Energy monitoring
· Alarm display
· nanoe™ X

Home screen

Basic settings

Statistics

Weekly timer

nanoe™ X simulation

Connectivity matrix.

White model	CZ-RTC6W	CZ-RTC6WBL	CZ-RTC6WBLW
Black model	**CZ-RTC6**	**CZ-RTC6BL**	**CZ-RTC6BLW**
Wired connection compatible with	PACi, PACi NX, ECOi, GHP	PACi, PACi NX, ECOi, GHP	PACi NX only
Wireless functions	No wireless capability	Bluetooth®	Bluetooth® + Wi-Fi
App compatibility			
Panasonic Comfort Cloud App	—	—	✔
Panasonic H&C Control App	—	✔ PACi, PACi NX, ECOi, GHP	✔ PACi NX only
Panasonic H&C Diagnosis App [1]	—	✔ PACi NX only [2]	✔ PACi NX only [2]
Outdoor unit settings (remote controller connected to indoor unit)	✔ PACi NX only [2]	✔ PACi NX only [2]	✔ PACi NX only [2]

1) Compatible with U-71/100/125/140PZH3E5/8 and U-100/125/140PZ3E5/8. 2) When connected to PACi NX indoor and outdoor unit combination.

Function comparison

This shows the functions provided:
a) by the remote controllers
b) by the apps

		Remote controller functionalities		Panasonic H&C Control App	Panasonic Comfort Cloud App	
						
		CZ-RTC5B	CZ-RTC6W / CZ-RTC6	CZ-RTC6WBL(W) / CZ-RTC6BL(W) + app	CZ-CAPWFC1 + app	CZ-RTC6WBLW / CZ-RTC6BLW + app
Basic operation	ON / OFF, mode, temperature, air flow volume, air flow direction	✔	✔	✔	✔	✔
Timer functions	Time display	✔	—	✔	✔	✔
	Easy ON / OFF timer	✔	—	✔	—	—
	Weekly program timer	✔	—	✔	✔	✔
Energy saving	Outing function	✔	✔	✔	—	—
	Temperature auto return	✔	—	✔	—	—
	Temperature setting range limitation	✔	—	✔	✔	✔
	OFF reminder	✔	—	✔	—	—
	Energy saving mode	✔	—	✔	—	—
	Schedule demand control	✔	—	✔	—	—
	Energy monitoring	✔	—	✔	✔	✔
	Econavi	✔	✔	✔	✔	✔
Maintenance	System failure information (alarm history)	✔	✔	✔	—	—
	Alarm display	✔	✔	✔	✔	✔
	Service contact registration	✔	—	✔	—	—
	Filter sign	✔	✔	✔	—	—
	Test run	✔	✔	✔	—	—
	Sensor value monitor	✔	✔	✔	—	—
	Simple setting mode	✔	✔	✔	—	—
	Detailed setting mode	✔	✔	✔	—	—
Others	Key lock	✔	✔	✔	—	—
	Ventilation fan control	✔	—	✔	—	—
	Display contrast adjustment	✔	✔	✔	—	—
	Rotation	✔	—	✔	—	—
	Quiet operation mode	✔	—	✔	—	—
	nanoe™ X	✔	✔	✔	✔	✔

Remote controller with Econavi

Easy to use, attractive, clear design, with demand control functions and energy consumption display! This useful feature makes this remote controller unique!

1 Design

The CZ-RTC5B wired remote controller is ideal for integration into the most demanding interior architectures.
The touch panel features a very sleek and easy to use display, which with its compact display is only 120 x 120 x 16 mm.

2 Key functions

- Easy setup of the timer and settings of the indoor unit
- Energy consumption display (for all R32 PACi line-up)
- Limitation of the energy consumption (Demand control) by timer.

3 Display of information

The information is mainly based on pictograms to ensure easy understanding. The minimal amount of text is available in 6 languages (English / German / French / Spanish / Italian / Polish).
The screen is back lit to enable reading even during the night.

4 Easy access to the menus

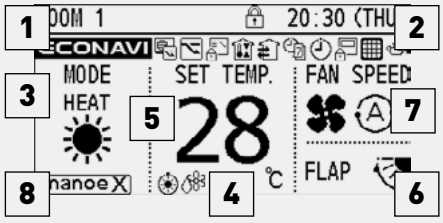
With the pictograms, the navigation, the selection and the settings are simple and easy to follow.

Basic function (operation display and indication).

REFER TO PAGE 420 FOR MORE DETAILS

All functions are easily available on the remote controller.

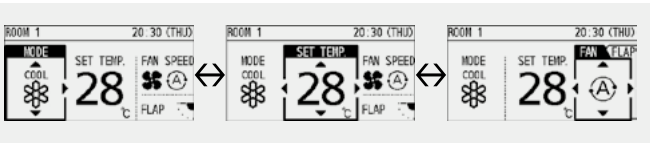
- ON / OFF timer
- Weekly timer
- Quiet operation
- Remote controller sensor
- Operation prohibit
- Filter sign
- Energy saving
- Centralized control indication
- Mode change prohibit
- Automatic temperature return
- Temperature range limitation
- OFF remind
- Schedule demand control
- Ventilation
- Out Function



1 | Name of the room (maximum 16 characters)
2 | Time and Day of the week
3 | Mode: Hot / Cool / Dry / Fan Auto
4 | Status: Heating stand-by / Defrost operation / Stand-by (GHP system)
5 | Set temperature
6 | Flap setting
7 | Fan speed: L-H / Auto
8 | nanoe™ X setting

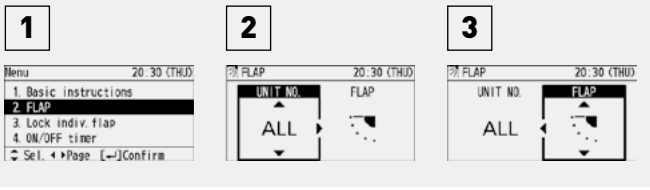
Easy operation and quick access to all menus

1 | Set temperature will be selected, when any arrow button is touched
2 | Select the item (Mode or Fan speed) by left/right ◂▸ key
3 | Change the setting by up/down ▴▾ key



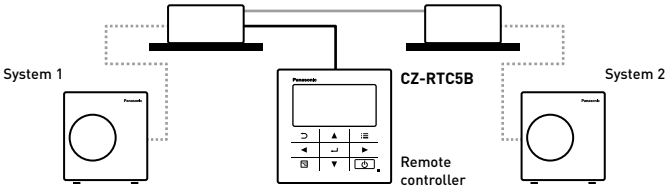
Example of easy access to the functions: air direction setting

1 | Select “Air direction” and press “Enter” key
2 | Select the unit number by up/down ▴▾ key
3 | Select the flap position by up/down ▴▾ key
4 | Press “Return” key to go back the Menu display



Backup control by using CZ-RTC5B

Group wiring of 2 systems of PACi can do auto individual control: Rotation operation, backup operation and support operation.



Functions available on the CZ-RTC5B

Control item	Controllability	Indoor units	
		PACi	VRF
Basic operation	Operation, Mode, Temperature setting, Air flow volume, Air flow direction	✔	✔
Timer function	Time display	✔	✔
	Easy ON / OFF timer	✔	✔
	Weekly program timer	✔	✔
Energy saving	Outing function	✔	✔
	Temperature auto return	✔	✔
	Temperature setting range limitation	✔	✔
	OFF remind	✔	✔
	Energy saving mode	✔	✔
	Schedule demand control	✔ [1]	✔
	Energy monitoring - R32	✔	—

Control item	Controllability	Indoor units	
		PACi	VRF
Maintenance	System failure information	✔	✔
	Service contact registration	✔	✔
	Filter sign (rest time display) and reset	✔	✔
	Auto-address, Test run	✔	✔
	Sensor value monitor	✔	✔
	Simple / Detail setting mode	✔	✔
Others	Key lock	✔	✔
	Ventilation fan control	✔	✔
	Display contrast adjustment	✔	✔
	Remote controller sensor	✔	✔
	Quiet operation mode	✔ [1]	—
	Prohibit setting control from central controller	✔	✔

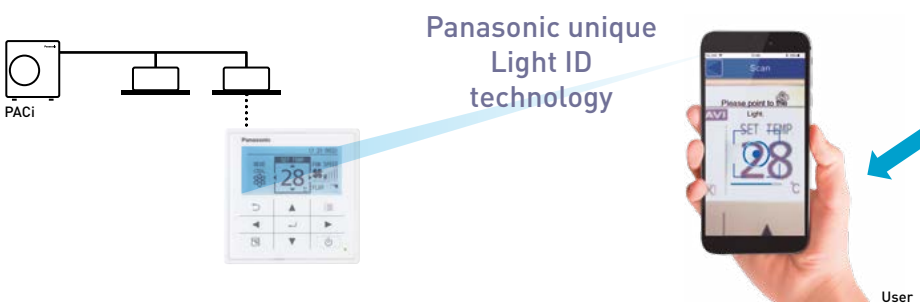
1) Not available with PACi Standard R410A line up.
* All specifications subject to change without notice.

Datanavi

Datanavi, a simple way to connect.
Simple and easy support tool with your smartphone.

Overview of datanavi system.

Just holding up your smartphone to the LED display on a remote controller (CZ-RTC5B) to receive useful AC system information super fast by Panasonic Light ID Technology. Datanavi also connects to Panasonic Cloud Server for the quick view of manuals, saving data received by Light ID.



Fast and intuitive

Easy access to manual database

Accurate service data on your smartphone

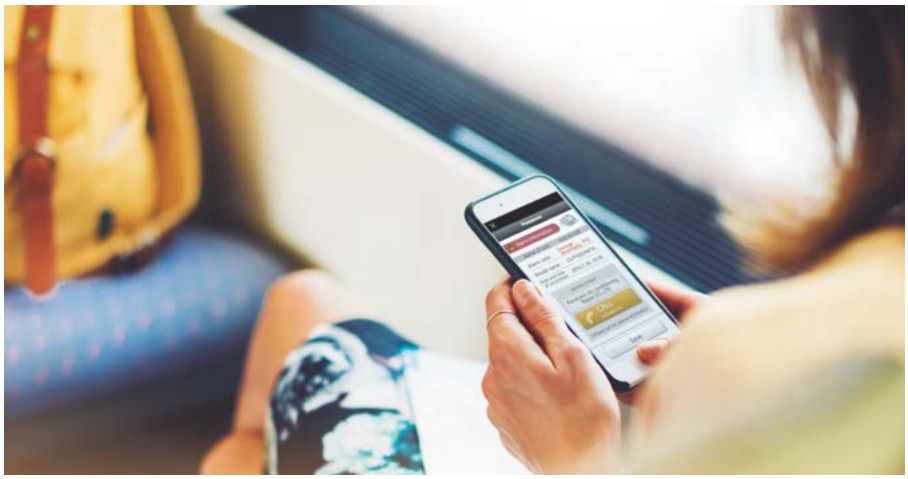
Key functions.

- Scan and Save AC system info
- Easy access to manual database
- Commissioning, F-Gas check data history

What is the Light ID technology developed by Panasonic?
Visible light transmission technology, which enables to transmit information by high-speed and invisible flashing of an LED light source.

User / administrator (person in charge of AC) functions

- **Fast and intuitive.** Regular operation data, energy consumption data display
- **Easy access to data base.** Getting manuals related on demand
- **No idea what to do when an error happens?** You can share error information and contact service easily



Installer / service company functions

- **Getting technical data depends on your need**
  Service manual. Q and A list. Test run information
- **Acurate error information**

Regular operation

Energy management

Malfunction notice

Operating manual

Test run info

Service data

* User interface image may be updated without notification.

- Simple F-gas regulation check list
- Repair speed check list

Download free apps, try datanavi!

Intelligent controller

This controller is the smart solution for your advanced requirement in buildings.

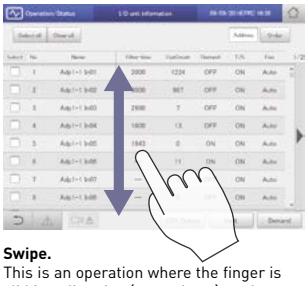
Intuitive operation.

REFER TO PAGE 424 FOR MORE DETAILS

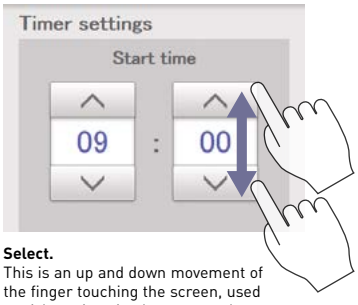
The screens used for operations all follow a common pattern, with the screens being easy to read and easy to use.
· Enlarged screen (10,4 inch) with colour LCD
· Smartphone-like gestures (flick, swipe, touch)

Large screen display. Enlarged by 60%.

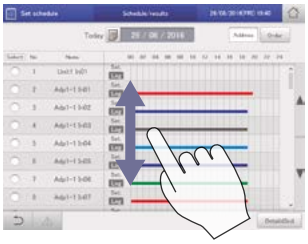
Easy swipe or flick operation.



Swipe.
This is an operation where the finger is slid in a direction (up or down) on the touch panel. This is used to scroll slowly.



Select.
This is an up and down movement of the finger touching the screen, used to pick settings in elements such as spin boxes.

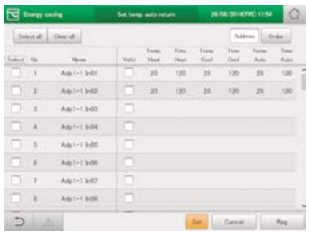


Pull out.
This is an operation where the finger on the touch panel is flicked in a direction (up or down). This is used to scroll quickly.

Enhanced functions for energy saving as standards

· Set temperature auto return settings, Auto shut OFF, set temperature range limit settings
· Demand control function

Screen of set temperature auto return setting.



Auto shut OFF.

Screen of outdoor demand control.

· Outdoor demand input and timer settings possible
· Indoor can be set at ±1 °C/ ±2 °C or thermostat OFF
· Indoor units controlled in sequence at 10-minute intervals

Energy visualization

· Energy saving plans are supported with graph display function
· Displays electricity and gas usage distribution

Screen of graph display.

Useful parameters are shown for your better energy saving.
Ex.) Bar graph:

Indoor unit:	Total operating time, thermostat ON operation time (Min.) Amount used (electricity, gas) Electricity or gas charges
Outdoor unit:	Outdoor unit operation cycles (# cycles) Engine time in operation (Hrs.) Cumulative Inverter power output Cumulative PV power output

Pulse value selection per different data intervals 1 hour/1 day/ 1 month compared with last year.

Main function

Gesture function (flick, swipe, touch)	✔
Graph display (trends, comparisons)	✔
Web functions (maximum 64 users)	✔
Recipient setting for warning email	✔ (Maximum 8)
Automatic return to setting temperature	✔
Limitation of setting temperature range	✔
Left-on prevention	✔
Quiet operation of outdoor unit	✔
Occupant sensor linkage	✔
Demand function	✔
Charge calculation	✔
Log display	✔ Warning 10000 items. Status change 50000 items
Linked control (event definition 50 events, input: 32, output: 32)	✔
Under maintenance (under inspection registration)	✔

Econavi Sensor

The Econavi sensor detects presence in the room, and quietly adapts the PACi or VRF air conditioning system in order to improve comfort and energy savings.

· Detects human activity and adjusts temperature by 2 degrees (up or down) to optimise comfort and efficiency
· If there is no activity detected for a set time period, the Econavi will stop the unit or move to a temperature previously set
· The Econavi device is installed independently of the indoor unit, and is located in the area best suited for detection

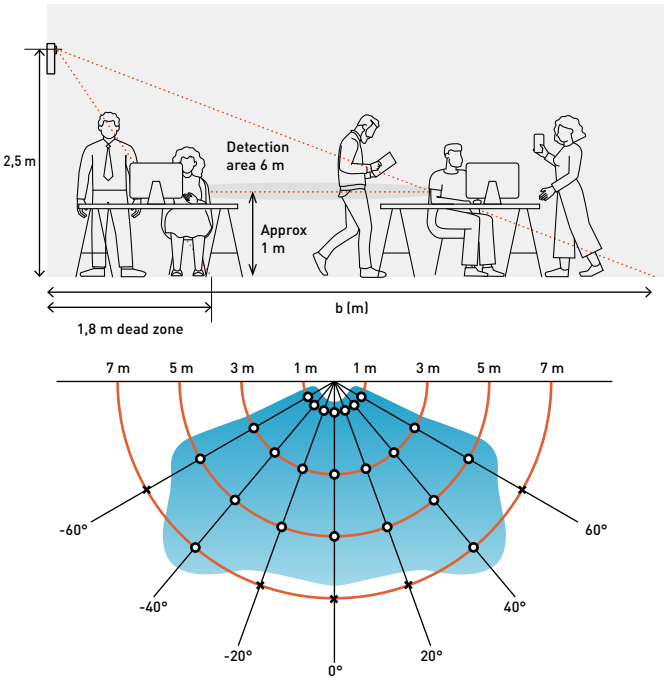
Applications

Saving energy for offices: If the air conditioning is left on after the last employee leaves the office, Econavi will automatically react, reducing or stopping the system.
Increased comfort in hotel rooms: When presence is detected in the room, the temperature is automatically adjusted to achieve best comfort.

Key points

· Compatible with cassette, wall-mounted, hide-away and Ceiling units
· Improves efficiency
· Better comfort
· Can be installed in the best location within the room for detection purposes

Sensor location image.



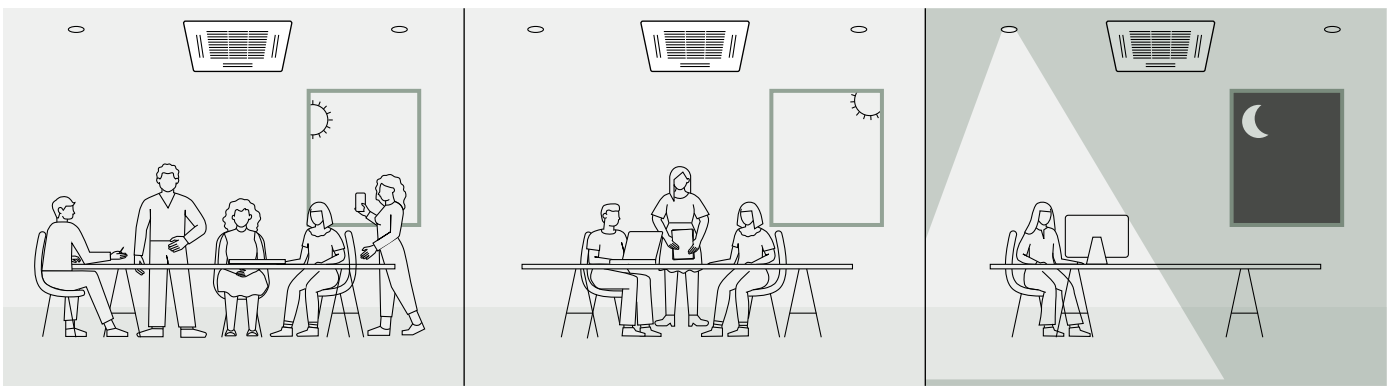
Human detection area (2,5 m height angle 30°)

Providing outstanding energy saving performance, Panasonic's Inverter system can be connected to Econavi to detect when energy is being wasted. Econavi senses the presence or absence of people and the level of activity in each area of an office. When unnecessary heating or cooling is detected, indoor units are individually controlled to match office conditions for energy saving operation.

Detection of the level of activity enables precise power saving.
Presence or absence of people at their desks and the level of activity in the office are detected in real time. Set temperature is automatically adjusted to optimise the lower power consumption.

Remote Econavi sensor allows optimum energy operation.
Pillars, walls, cabinets and other fittings obstruct the sensor, reducing the area of detection and lowering the energy saving effect. Taking into consideration blind spots, Panasonic enables the optimum layout for sensors in any office.

Econavi sensor: CZ-CENSC1



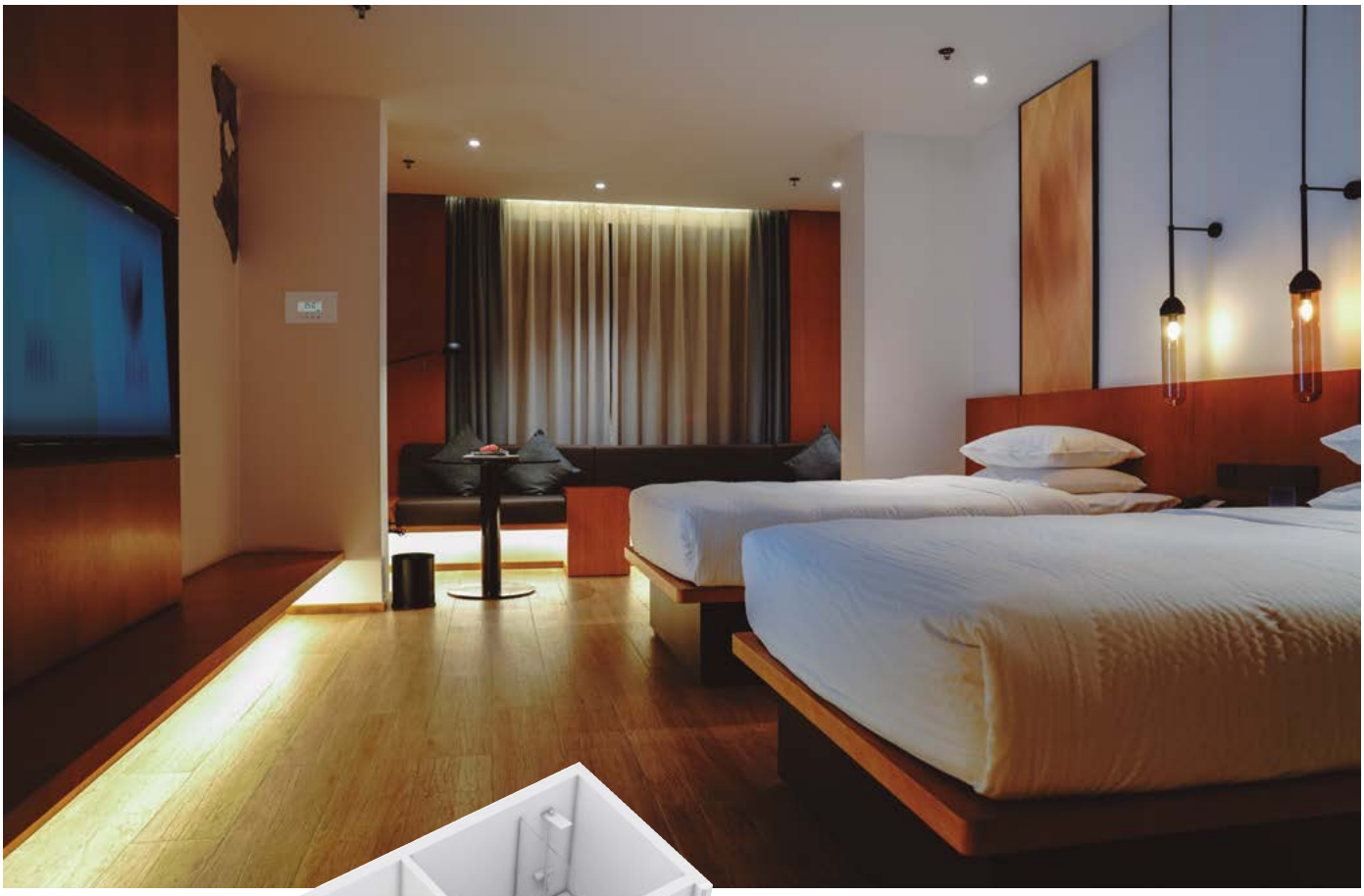
In the morning.
Thorough cooling when there is a high level of activity

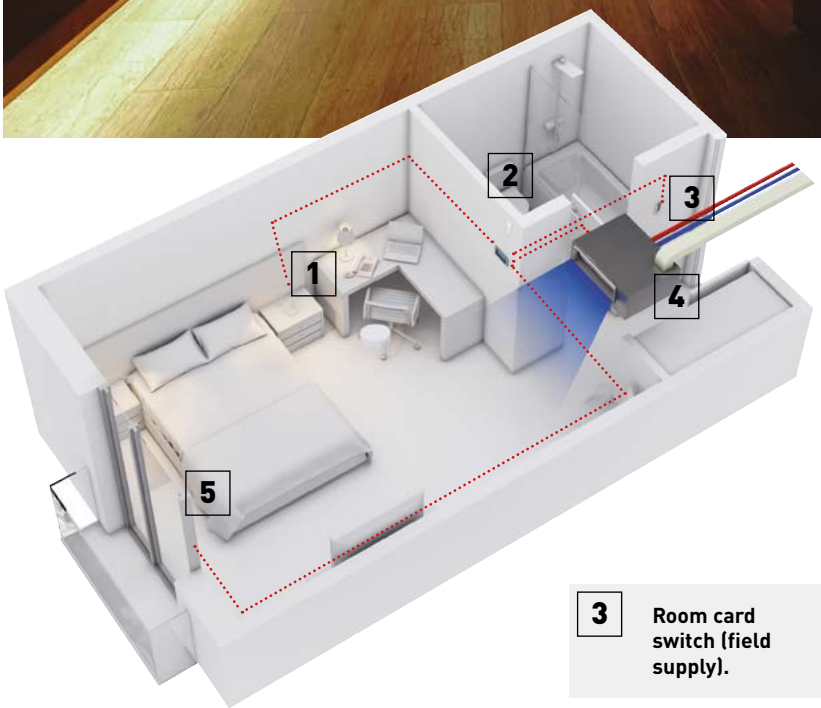
In the afternoon.
Reduced cooling when there are fewer people

At night.
Automatic Thermo OFF depending on conditions at the end of the day

Controller for hotel application

Innovative line up of room controllers specially designed for hotel applications. With a modern cosmetic that match room interiors and simple operation for hotel guests.





3 **Room card switch (field supply).**

Controller to integrate all room hotel needs in one device.
Card switch. Heating and cooling control. Light control. Window control. Possible to connect to Modbus.

1

Lighting control.

2

Wall silent motion sensor PAW-WMS-AC (-DC).

4

Indoor unit. Variable static pressure hide-away.

5

Door or window contact PAW-DWC.

Ceiling silent motion sensor PAW-CMS-AC (-DC).

· Easy to install
· Cost effective installation as all electrical cables are centralized on the remote: The lighting, card contact, motion detector, window contact and the air conditioning are controlled
· Architect inspired attractive design with 2 colors: black or white
· Stand alone and Modbus
· Bespoke finish by special order

Energy saving functions included on the device.
Turns OFF air conditioning and lighting when room is unoccupied. Disables air conditioning when window is open. Configurable maximum/minimum setpoint temperature.

Easy remote controller.
The hotel guest will have access to limited functions to control the air conditioning: ON / OFF, Temperature and Fan speed.

Easy set up.
Stand alone model with easy configuration menu to access all parameters. A pre-define scenario can be uploaded on the remote controller connected to a computer to make installation on site Plug & Play (only on the Modbus models).

REFER TO PAGE 421 FOR MORE DETAILS

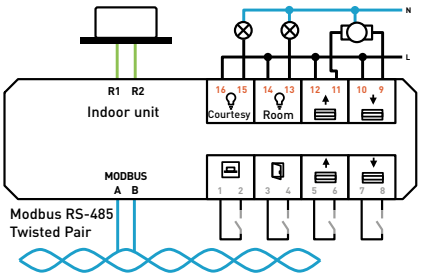
NFC fast set up.
With the touch display control and touch room controller setting are quicker than ever. Just touching smartphone with NFC capability the settings will be saved. This function is also possible even when the control is not wired. Giving flexibility to save the setting even before installation.

Type	Model	Colors	Digital inputs	Digital output	BMS	Inst. set up	T. sensor
Touch display controller	PAW-RE2D4-WH	White	2			NFC	Built-in
	PAW-RE2D4-BK	Black	2			NFC	Built-in
Touch room controller	PAW-RE2C4-MOD-WH	White	4	4	Modbus	NFC	Built-in
	PAW-RE2C4-MOD-BK	Black	4	4	Modbus	NFC	Built-in

Room controller: 4 digital inputs and 4 digital output

Room controller offers flexibility and easy installation thanks to 4 preconfigured options. This is available in Modbus type.
Modbus references: PAW-RE2C4-MOD-WH, PAW-RE2C4-MOD-BK.

Wiring configuration example for option 2 in Modbus type.

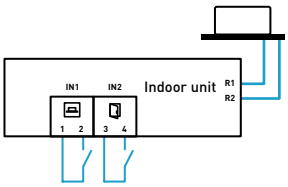


Configurations	4 options available I/O configurations: Inputs				Available I/O Configurations: Outputs			
	Digital 1-2	Digital 3-4	Digital 5-6	Analog 7-8	Relay 15-16	Relay 13-14	Relay 11-12	Relay 9-10
Option 1	Card	Window	Lighting	Temperature	Courtesy	Lighting	Not used	Valve actuator
Option 2	Card	Window	Blinds up	Blinds down	Courtesy	Lighting	Blinds up	Blinds down
Option 3	Motion sensor	Window	Door contact	Temperature	Courtesy	Lighting	Not used	Valve actuator
Option 4	Lighting	Window	Blinds up	Blinds down	Not used	Lighting	Blinds up	Blinds down

Display: 2 digital inputs

Display control allows to handle 2 inputs to perform most common operation in room hotels.
References: PAW-RE2D4-WH, PAW-RE2D4-BK.

Wiring example for display controller.



Configurations	3 options available: Inputs	
	IN1 (1-2)	IN2 (3-4)
Option 1	Card	Window
Option 2	Motion sensor	Window
Option 3	Motion sensor	Door contact

Hotel room controller	
PAW-RE2C4-MOD-WH	Modbus RS-485 touch room controller with I/O, white
PAW-RE2C4-MOD-BK	Modbus RS-485 touch room controller with I/O, black
PAW-RE2D4-WH	Touch display control with 2 digital inputs, white
PAW-RE2D4-BK	Touch display control with 2 digital inputs, black

Accessories sensors	
PAW-WMS-DC	Wall silent motion sensor 24 V
PAW-WMS-AC	Wall silent motion sensor 240 V AC
PAW-CMS-DC	Ceiling silent motion sensor 24 V
PAW-CMS-AC	Ceiling silent motion sensor 240 V AC
PAW-24DC	Power supply 24 V
PAW-DWC	Door or window contact

A united BMS interface with S-Link

Introducing a unified BMS interface, compatible with Modbus, BACnet, and KNX protocols. PAW-AC2-BMS-16, 64, 128.
BMS interface with Panasonic communication bus helps you to get significant savings.
Easy to use and reliable interfaces for a straightforward integration.

New
2024

1 Direct connection to S-Link communication bus

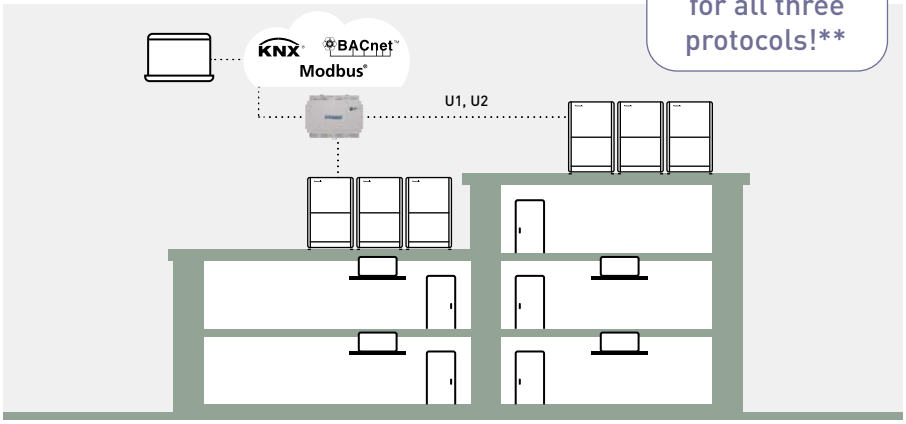
The interface can provide faster, cheaper, easier solution in your projects!

- No need for additional gateway (CZ-CFUNC2)
- Significant 50% cost saving for BMS interface*
- Avoid mistakes and reduce configuration time.

* In the case of PAW-AC2-BMS-16 by Panasonic calculation.
** One BMS protocol is available per one interface.

System example with the unified BMS interface.

One interface for all three protocols!**



U1U2 link is connected directly to IntesisBox. Support from 16 to 128 per each interface.

2 Easy configuration

- A single device supporting all Modbus, BACnet, and KNX protocols
- Dedicated configuration support tool (MAPs for Panasonic)
- Firmware updates with improvements and features
- Scan: Automatic identification of the units present in the VRF system

Screen examples of MAPs for Panasonic.

3 Upgraded specifications

- Electricity consumption calculation using three inputs from pulse meters or Modbus meters
- BACnet: Version 14 and BTL Certified
- Modbus and BACnet 128 units now supports IP and RTU/MSTP

Home automation compatibility for Smart Home systems for PAW-AC2-BMS-**

Drivers available for:

- AMX
- Control4
- eedomus
- Elan
- Fibaro
- iRidium
- Eedom
- RTI
- Savant
- Creston
- Kuju
- Vera

PAW-AC2-BMS-16	A unified interface supporting Modbus, BACnet, and KNX protocols for up to 16 indoor units
PAW-AC2-BMS-64	A unified interface supporting Modbus, BACnet, and KNX protocols for up to 64 indoor units
PAW-AC2-BMS-128	A unified interface supporting Modbus, BACnet, and KNX protocols for up to 128 indoor units

Version	Connectable indoor units	Connectable outdoor units	Number of S-Link communication bus port
16	1-16	1-16	1
64	1-64	1-30	1
128	128 (1-64 / S-Link communication bus port)	60 (1-30 / S-Link communication bus port)	2

Control and connectivity

A wide variety of control options to meet the requirements of different applications.

Centralized control systems

Centralised control.

P-AIMS core software.
Up to 1024 indoor units.
CZ-CSWKC2

Intelligent controller.

Intelligent controller.
Up to 256 indoor units touch screen with web server.
CZ-256ESMC3

Panasonic AC Smart Cloud.

Cloud internet control.
Up to 128 groups. Controls 128 units.
CZ-CFUSCC1

Connection with general equipment.

ON / OFF control for external devices such as ERV.
Controls 1 unit.
CZ-CAPC3

Demand control for PACi and Mini ECOi outdoor units.
Up to 4 outdoor units.
CZ-CAPDC3

Mini Seri-Para I/O Unit 0 - 10 V.
Controls 1 indoor unit or a group of 8 indoor units.
CZ-CAPBC2

Communication Adaptor.
Up to 128 groups. Controls 128 units.
CZ-CFUNC2

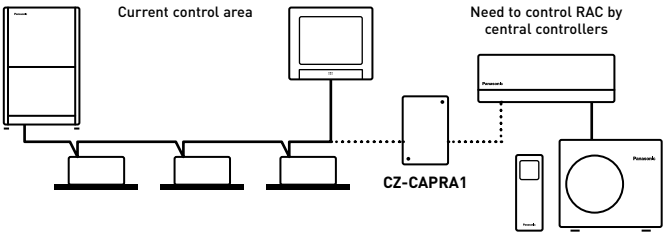
Domestic integration to S-Link - CZ-CAPRA1

Can connect RAC range to S-Link. Full control is now possible.

Integrates any unit in big system control.

· YKEA server room integration [1)]
· Small offices with domestic indoors
· Tender for refurbishment (old system Domestic and VRF in one installation)

1) When duty rotation using the remote controller is set up, CZ-CAPRA1 cannot be connected.



Current system for PACi / VRF. Central controller can connect to S-Link line to control units directly.

RAC units cannot connect directly to S-Link to be managed by Central Controllers.

It's necessary to have interface between S-Link and RAC protocol to cover basic operating items.

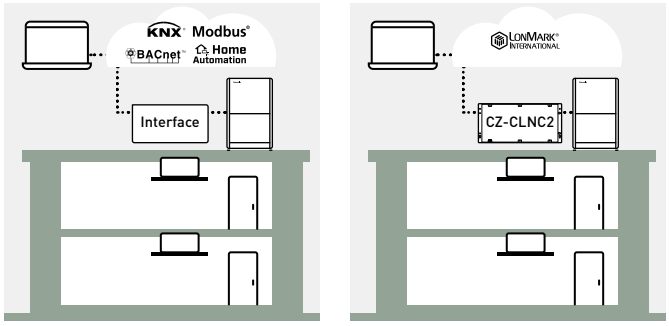
Basic operation items: ON / OFF, Mode select, Temperature setting, Fan speed, Flap setting, Remote control prohibit.
External input: ON / OFF control signal, Abnormal stop signal.
External output for Relay [1)]**:** Operation status (ON / OFF), Alarm status output.

1) Because current CN-CNT connector can not provide the power for external output relay, additional 12 V DC power supply for external relay is necessary.

Easy connection to KNX, Modbus, Lonworks, BACnet and Propietary Home Automation Systems

Easy and reliable solution to integrate your Panasonic heating and cooling systems into any B.M.S or E.M.S. Fully bi-directional communications with all necessary parameters.

For more information, contact Panasonic.



			Econavi control	Built-in thermostat	Indoor units which can be controlled	Use limitations	Function ON / OFF	Mode setting	Fan speed setting	Temperature setting	Air flow direction	Permit/Prohibit switching	Weekly program	BMS protocol
Individual controllers														
Design wired remote controller		CZ-RTC5B	✔	✔	1 group, 8 units	· Up to 2 controllers can be connected per group	✔	✔	✔	✔	✔	—	✔	—
CONEX Wired remote controller		CZ-RTC6W CZ-RTC6 Non-wireless	✔	✔	1 group, 8 units	· Up to 2 controllers can be connected per group	✔	✔	✔	✔	✔	—	—	—
		CZ-RTC6WBL CZ-RTC6BL With Bluetooth®	✔	✔	1 group, 8 units	· Up to 1 controller can be connected per group	✔	✔	✔	✔	✔	—	✔	—
		CZ-RTC6WBLW CZ-RTC6BLW With Wi-Fi and Bluetooth®	✔	✔	1 group, 8 units	· Up to 1 controller can be connected per group	✔	✔	✔	✔	✔	—	✔	—
Touch room controller for hotel with Dry Contact and Modbus		PAW-RE2C4-MOD-WH PAW-RE2C4-MOD-BK WH: White, BK: Black. Bespoke finish available on request.	—	✔	1 indoor unit	—	✔	✔	✔	✔	—	✔	—	Modbus + 4 digital I/O signals
Touch display control for hotel with Dry Contacts		PAW-RE2D4-WH PAW-RE2D4-BK WH: White, BK: Black. Bespoke finish available on request.	—	✔	1 indoor unit	—	✔	✔	✔	✔	—	✔	—	Stand Alone + 2 digital inputs
Infrared remote controller		CZ-RWS3 + CZ-RWRU3W CZ-RWS3 + CZ-RWRY3 CZ-RWS3 CZ-RWS3 + CZ-RWRL3 CZ-RWS3 + CZ-RWRD3 CZ-RWS3 + CZ-RWRT3 CZ-RWS3 + CZ-RWRC3	✔	—	1 group, 8 units	· Up to 2 controllers can be connected per group	✔	✔	✔	✔	✔ [1]	—	—	—
Centralized controllers														
System controller with weekly timer		CZ-64ESMC3	✔	—	64 groups, maximum 64 units	· Up to 10 controllers, can be connected to one system · Main unit/sub unit (1 main unit + 1 sub unit) connection is possible · Use without remote controller is possible	✔	✔	✔	✔	✔ [1]	✔	✔	—
Central ON / OFF controller		CZ-ANC3	—	—	16 groups, maximum 64 units	· Up to 8 controllers (4 main units + 4 sub units) can be connected to one system · Use without remote controller is impossible	✔	—	—	—	—	✔	—	—
Intelligent controller (touch screen/ web server)		CZ-256ESMC3	✔	—	Main unit: 128. Up to 256 units can be expanded	· Communication adaptor CZ-CFUNC2 is necessary for connection with more than 128 units	✔	✔	✔	✔	✔ [1]	✔	✔	—

1. Setting is not possible when a remote controller unit is present (use the remote controller for setting). * All specifications subject to change without notice.

Individual controllers wired

CONEX wired remote controller

CZ-RTC6W // CZ-RTC6 // CZ-RTC6WBL // CZ-RTC6BL // CZ-RTC6WBLW // CZ-RTC6BLW [1]
· 3 line-up: - CZ-RTC6W // CZ-RTC6: Non-wireless
- CZ-RTC6WBL // CZ-RTC6BL: Bluetooth®
- CZ-RTC6WBLW // CZ-RTC6BLW: Wi-Fi and Bluetooth®
· Colours: 6W: White. 6: Black
· Intuitive control with stylish design profile
· Clean face with full flat and LCD display
· Dimension (H x W x D): 86 x 86 x 25 mm

Panasonic H&C Control App [2].
· Daily remote control operation via Bluetooth®
· Quick and easy App set-up for system setting

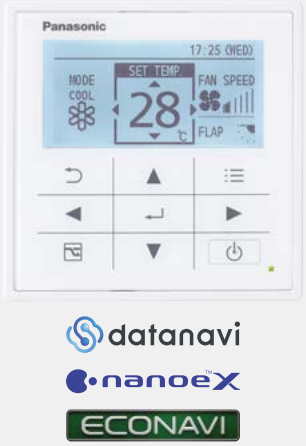
Panasonic H&C Diagnosis App [3].
· Easy access to service parameters and service checker data via Bluetooth®

Panasonic Comfort Cloud App
· Especially designed for end users
· Remote operation via Wi-Fi

Basic operation.
· Mode setting: Heat / Cool / Dry / Fan / Auto
· Temperature setting
· Fan speed: 5 levels
· Air flow direction
· nanoe™ X and Econavi setting
· Weekly program [4]

1) Compatible with PACi NX Series.
2) CZ-RTC6WBL, CZ-RTC6BL, CZ-RTC6WBLW or CZ-RTC6BLW required.
3) A service checker interface is required. Compatible with PACi NX Series.
4) Can be set from Panasonic H&C Control App.

Design wired remote controller



datanavi
nanoe™X
ECONAVI

CZ-RTC5B
· Power consumption monitor (only for PACi)
· Flat face design and touch sensor switch for stylish design and operating usability
· Functions such as for energy saving and monitoring and for service use are available on the full dot LCD (3,5" display)
· Improved illumination
· White LED backlit
· Blink when alarm occurs

Datanavi.
· Scan and save AC system info
· Easy access to manual database
· Commissioning, F-Gas check data history

* Panasonic App is required on your smartphone.

Basic Operation.
· Operation
· Mode
· Temperature setting
· Air flow volume
· Air flow direction

Timer function.
· Outing function
· Weekly program timer
· Easy ON / OFF timer
· Time display

Energy saving.
· Outing function
· Temperature setting range limitation
· Temperature auto return
· OFF remind
· Schedule demand control
· Energy saving mode
· Energy monitoring

Others.
· Key lock
· Ventilation fan control
· Display contrast adjustment
· Remote controller sensor
· Quiet operation mode
· Prohibit setting control from central controller
· Rotation / backup control

* Power consumption monitoring is available for all PACi systems except R410A PACi Standard.
* Rotation and backup control with CZ-RTC5B is available for all PACi systems.

Room controller for hotel rooms

PAW-RE2C4-MOD-WH // PAW-RE2C4-MOD-BK
· Easy to install
· Cost effective installation as all electrical cables are centralised on this remote
· Architect inspired attractive design
· Direct connection to the Indoor unit with all primary functions of indoor unit available
· 2 options available: Stand alone and Modbus communication
· Colours: WH: White. BK: Black
· Room controller: 4 digital inputs and 4 digital outputs

From this remote controller.
The lighting, card contact, motion detector, window contact and the air conditioning are controlled.

Energy saving functions included on the device.
· Turns OFF air conditioning and lighting when room is unoccupied
· Disables air conditioning when window is open
· Maximum/minimum setpoint temperature configurable

Fast and simple set up.
Set up is simple and easy for room controllers. It is extremely easy and quick with touch models, which can be set up by using smartphone with NFC technology, even when control is not yet installed / powered.

Display control for hotel rooms

PAW-RE2D4-WH // PAW-RE2D4-BK
· Easy to install
· Cost effective installation as all electrical cables are centralised on this remote
· Architect inspired attractive design
· Direct connection to the Indoor unit with all primary functions of indoor unit available
· Stand alone communication
· Colours: WH: White. BK: Black
· Basic hotel function: 2 digital inputs

From this remote controller.
The card contact, motion detector, window contact and the air conditioning are controlled.

Energy saving functions included on the device.
· Disables air conditioning when window is open
· Maximum/minimum setpoint temperature configurable

Fast and simple set up.
Set up with smartphone with NFC technology, even when control is not yet installed/powered.

Individual wireless controllers

Infrared remote controller

CZ-RWS3 + CZ-RWRU3W // CZ-RWS3 + CZ-RWRY3 // CZ-RWS3 // CZ-RWS3 + CZ-RWRL3 // CZ-RWS3 + CZ-RWRD3 // CZ-RWS3 + CZ-RWRT3 // CZ-RWS3 + CZ-RWRC3

- Easy installation for the 4 Way Cassette type by simply replacing the corner part
- 24 hour timer function
- Remote controller by main remote controller and sub controller is possible (maximum 2 remote controllers (main remote controller and sub controller) can be installed for one indoor unit)
- When CZ-RWS3 is used, infrared control becomes possible for all indoor units (1: when a separate receiver is set up in a different room, control from that room also becomes possible. 2: automatic operation by means of the emergency operation button is possible even when the remote controller has been lost or the batteries have been exhausted)
- Operation of separate energy recovery ventilators (when commercial ventilation fans or heat-exchange ventilation fans have been installed, they can be operated with this remote controller (interlocked operation with the indoor unit or independent ventilation ON / OFF)

nanoeX

ECONAVI

Infrared remote controller and receiver for 4 way 90x90 cassette.
CZ-RWS3 + CZ-RWRU3W

Infrared remote controller and receiver for 4 Way 60x60 cassette PY3 (with a panel).
CZ-RWS3 + CZ-RWRY3

Infrared remote controller for wall-mounted, 4 way 60x60 with panel and floor console.
CZ-RWS3

Infrared remote controller and receiver for 2 way cassette.
CZ-RWS3 + CZ-RWRL3

Infrared remote controller and receiver for 1 way cassette.
CZ-RWS3 + CZ-RWRD3

Infrared remote controller and receiver for ceiling.
CZ-RWS3 + CZ-RWRT3

Infrared remote controller and receiver for all indoor units.
CZ-RWS3 + CZ-RWRC3

Remote sensor

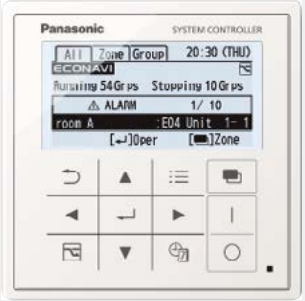
CZ-CSRC3

- This remote sensor can be connected to any PACi or VRF unit. Use it to detect the room temperature when no remote controller sensor or body sensor is used (connection to a system without a remote controller is possible)
- For joint use with a remote controller switch, use the remote controller switch as main remote controller
- Batch group control for up to 8 indoor units
- Appearance design based on simplified remote controller chassis
- Dimensions (H x W x D): 120 x 70 x 17 mm
- Weight: 70 g
- Temperature/Humidity range: 0 °C to 40 °C / 20% to 80% (no condensation) (indoor use only)
- Power supply: 16 V DC (supplied from indoor unit)
- Maximum number of connectable indoor units: Up to 8 units

Control contents		Part name, model No.	Quantity
Standard control	· Control of the various operations of the indoor unit by wired or infrared remote controller · Cooling or heating mode of the outdoor unit is decided by the first priority of the remote controller · Switching between remote controller sensor and body sensor is possible	High spec wired remote controller: CZ-RTC5B CONEX wired remote controller: CZ-RTC6W // CZ-RTC6 // CZ-RTC6WBL // CZ-RTC6BL // CZ-RTC6WBLW // CZ-RTC6BLW Infrared remote controller: CZ-RWS3 + CZ-RWRU3W // CZ-RWS3 + CZ-RWRY3 // CZ-RWS3 // CZ-RWS3 + CZ-RWRL3 // CZ-RWS3 + CZ-RWRD3 // CZ-RWS3 + CZ-RWRT3 // CZ-RWS3 + CZ-RWRC3	1 unit each
(1) Group control	· Up to 8 units can be connected to 1 remote controller · Operation of all indoor units in the same mode	High spec wired remote controller: CZ-RTC5B CONEX wired remote controller: CZ-RTC6W // CZ-RTC6 // CZ-RTC6WBL // CZ-RTC6BL // CZ-RTC6WBLW // CZ-RTC6BLW Infrared remote controller: CZ-RWS3 + CZ-RWRU3W // CZ-RWS3 + CZ-RWRY3 // CZ-RWS3 // CZ-RWS3 + CZ-RWRL3 // CZ-RWS3 + CZ-RWRD3 // CZ-RWS3 + CZ-RWRT3 // CZ-RWS3 + CZ-RWRC3	8 units
(2) Main/ sub. remote controller	· Maximum 2 remote controllers per indoor unit · The button pressed last has priority · Timer setting is possible even with the sub remote controller	Main or sub.: High spec wired remote controller: CZ-RTC5B CONEX wired remote controller: CZ-RTC6W // CZ-RTC6 // CZ-RTC6WBL // CZ-RTC6BL // CZ-RTC6WBLW // CZ-RTC6BLW Infrared remote controller: CZ-RWS3 + CZ-RWRU3W // CZ-RWS3 + CZ-RWRY3 // CZ-RWS3 // CZ-RWS3 + CZ-RWRL3 // CZ-RWS3 + CZ-RWRD3 // CZ-RWS3 + CZ-RWRT3 // CZ-RWS3 + CZ-RWRC3	As required

Centralised controllers

System controller with schedule timer



ECONAVI

Sample display image / Operation status display

Operation Status ALL

Operation Status ZONE

Operation Status GROUP

CZ-64ESMC3
Operation with various functions from central station.
Panasonic unveils state-of-the-art digital controller.
Panasonic's innovative and easy to use interface that offers full functionality with an integrated schedule timer and system controller, making managing heating and cooling systems easier than ever before. The CZ-64ESMC3 includes Panasonic's popular schedule timer, which gives users full flexibility over when they want their property heated or cooled. Users can adjust the system for holidays, pausing operations for long periods of time so that energy isn't wasted heating or cooling an empty home or office. The controller also allows six operations per day to be programmed.

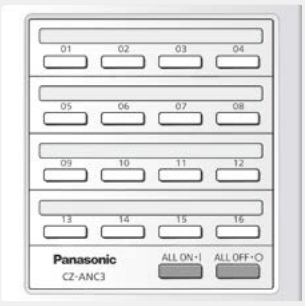
Mix of current 2 controllers: System controller + schedule timer.
System controller will be designed by taking priority on these 2 operations with following technical key points:
· Same operation feeling as wired remote controller by touch-key panel
· High visibility and usability by full-dot LCD
· Based on high wired remote controller
· Maximum 64 group of indoor units, individual control for 64 units
· 4 zone control; 1 zone = maximum 16 groups
· Several energy saving function (based on CZ-RTC5B)
· 6 timer program per day for 1 week (7 days) operation (total 6 x 7= 42 programs)
· Basic setting items (Temperature, Mode, Fan speed, Flap position) can be set by same manner as CZ-RTC5B

Function list:
Central control functions:
· Central control / individual setting
  - Start-stop prohibition for remote controller
  - Start-stop / Mode change / Temperature setting prohibition for remote controller
  - Mode change / Temperature setting prohibition for remote controller
  - Mode change prohibition for remote controller
  - Select items for prohibition
· Filter information
  - Filter sign
  - Filter sign reset
· Ventilation setting

Timer functions and external I/O:
· Weekly timer
  - Timer setting enable / disable
  - Copy of timer setting
· Maintenance
  - External signal (Start / Stop) (Demand control)
  - Centralized control master-slave setting
  - Alarm history
· Initial setting
  - Clock

Energy saving, maintenance and operating functions:
· Energy saving control
  - Econavi ON / OFF
· Filter information
  - Filter sign and hour counter display
· Maintenance
  - Service contact
· Initial setting
  - Clock display setting
  - Name Setting
  - Operation lock setting
  - Operation sound setting
  - LCD contrast setting
  - LCD backlight setting
  - Select displayed language (EN/FR/IT/ES/DE)
  - Administrator password
· Setting information list

ON / OFF controller



CZ-ANC3
Only ON / OFF operation from central station.
· 16 groups of indoor units can be controlled
· Collective control and individual group (unit) control can also be performed
· Up to 8 ON / OFF controller (4 main, 4 sub) can be installed in one link system
· The operation status can be determined immediately
· Dimensions (H x W x D): 121 x 122 x 14 + 52 mm (embedding dimension)

Power supply: 220 to 240 V AC.
I/O part: Remote input (effective voltage: within 24 V DC): All ON / OFF.
Remote output (allowable voltage: within 30 V DC): ON, Alarm.

Note: As operation mode and temperature settings are not possible with the ON / OFF controller, it must be used together with a remote controller, a system controller etc.

Centralised controllers

Intelligent controller (touch screen panel)

CZ-256ESMC3
Simplified load distribution ratio (LDR) for each tenant.
· Dimensions (H x W x D): 240 x 280 x 20 (+60) mm
· Power supply: Single phase 100-240 V ~ 50/60 Hz
· Maximum number of connectable indoor units: 256 units (maximum per link: 64 units)
· Maximum number of connectable outdoor units: 120 units (maximum per link: 30 units)
· Central control device: Up to 10 units
· Enlarged display screen: 10,4 inch touch-panel colour LCD. Pursuing visibility, ease of use. Retrieve data from USB memory: Place the USB port inside the panel (USB memory available in stores)
· Communication adaptor: CZ-CFUNC2*

* CZ-CFUNC2 is required to connect more than 128 indoor units.

Functions:
· Graph display (trends, comparisons)
· Econavi ON / OFF
· Outdoor unit quiet operation ON / OFF
· Energy saving functions: Set temperature auto return settings, Auto shut OFF, Set temperature range limit settings, Energy saving for PAC current value,etc.
· Event control (such as equipment linkage)
· Performs closing at end of any period

Operation and status.
You can check to operational status (ON / OFF, operating mode, alarms, etc.) of all indoor units and outdoor units in real time.
You can also select indoor units to change their settings.

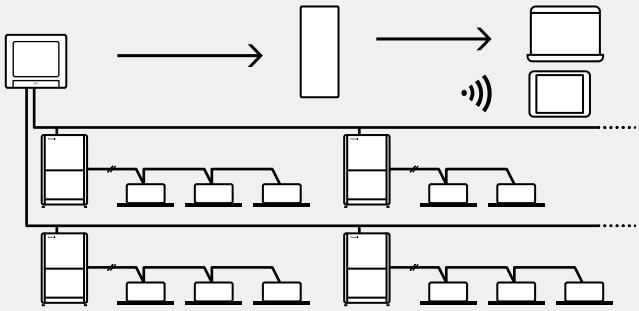
Operation scheduling.
You can register daily operation schedules (ON / OFF time, operating modes, set temperatures, etc.) for individual indoor units or groups of indoor units.
Operations can be schedule for up to 2 years in advance.

Load distribution calculation for each tenant.
· Air-conditioner load distribution ratio is calculated for each unit (tenant) with used energy consumption data (m^3, kWh)
· Calculated data is stored as a CSV type file
· Data from the last 365 days is stored

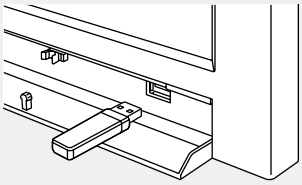
Web application. Web access and control from remote station.
· Accessing from remote PC
· You can monitor/operate system by using web browser

Remote controller.
The LAN terminal on this unit enables you connect it to a network. Connecting to Internet will enable you to operate the unit and check the status using a PC from a remote location*.

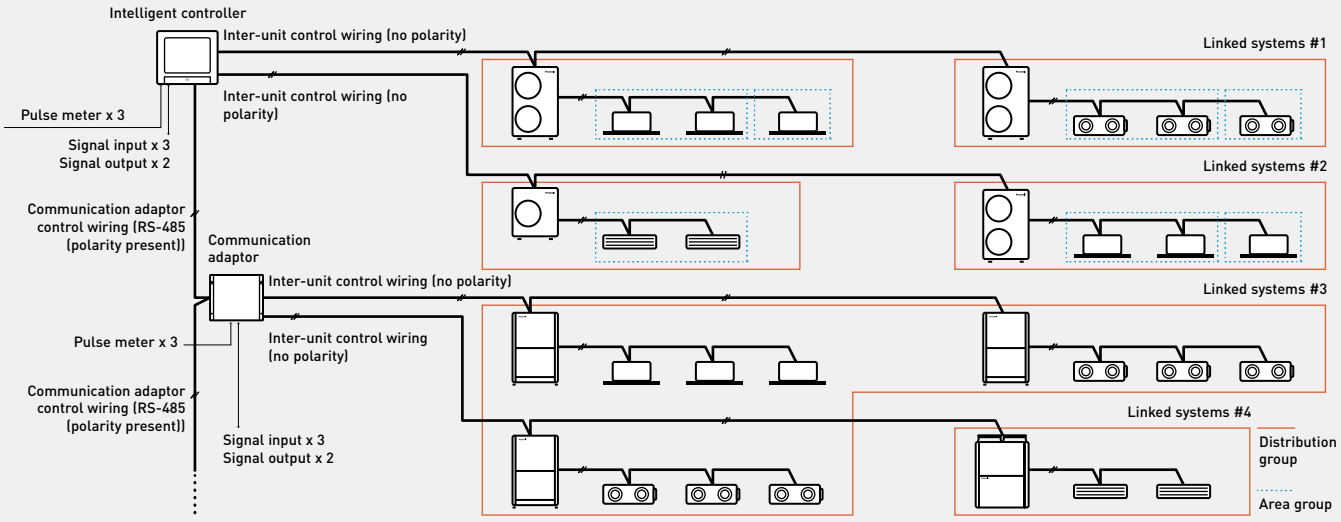
* Remote access rights and additional IT infrastructure / programming may be required.



Backup tool to save your commissioning time.
Various data such as distribution, setting, log history etc. can be saved by CSV file.
Setting data of CSV file is available to edit and import to the controller again.
You can save time for commissioning and change setting flexibly and easily by your PC.
· Customize data
· Data recovery
Data can be imported again by general USB.



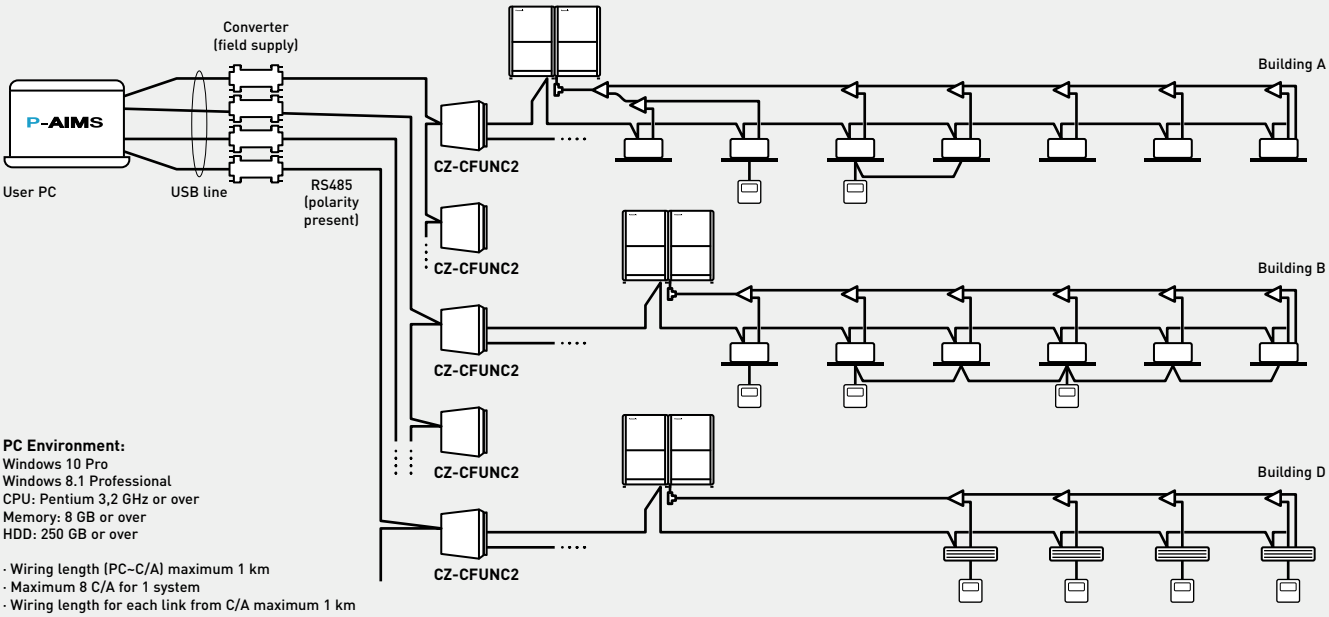
System configuration example.



P-AIMS core software

CZ-CSWKC2 / P-AIMS core software.
Centralised software to control up to 1024 indoor units.

Functions of basic software.
· Standard remote controller for all indoor units.
· Many timer schedule programs can be set on the calender.
· Detailed information display for alarms.
· CSV file output with alarm history, operating status.
· Automatic data backup to HDD.
P-AIMS is suitable for large shopping centers and universities with many areas/ buildings. 1 "P-AIMS" PC can have 4 independent systems at once.
Each system can have maximum 8 C/A units, and control maximum 512 units. In total, 1024 indoor units can be controlled by 1 "P-AIMS" PC.



PC Environment:
Windows 10 Pro
Windows 8.1 Professional
CPU: Pentium 3,2 GHz or over
Memory: 8 GB or over
HDD: 250 GB or over

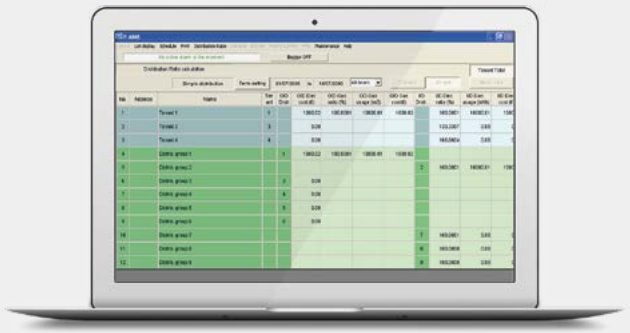
· Wiring length (PC–C/A) maximum 1 km
· Maximum 8 C/A for 1 system
· Wiring length for each link from C/A maximum 1 km

P-AIMS optional software CZ-CSWAC2 / P-AIMS consumption calculation extension.
· Air-conditioner load distribution ratio is calculated for each unit (tenant) with used energy consumption data (m³, kWh)
· Calculated data is stored as a CSV type file
· Data from the last 365 days is stored

P-AIMS optional software CZ-CSWWC2 / P-AIMS web application extension.
· Accessing P-AIMS software from remote PC
· You can monitor/operate ECOi System by using web browser (Internet Explorer)

P-AIMS optional software CZ-CSWGC2 / P-AIMS layout display extension.
· Operating status monitor is available on the layout display
· Object's layout and indoor unit's location can be checked at once
· Each unit can be controlled by virtual remote controller on the display
· Maximum 4 layout screens are shown at once

P-AIMS optional software CZ-CSWBC2 / P-AIMS BACnet extension.
· Can communicate with other equipment by BACnet protocol
· ECOi System can be controlled by both BMS and P-AIMS
· Maximum 255 indoor units can be connected to 1 PC (that has P-AIMS basic and BACnet software).

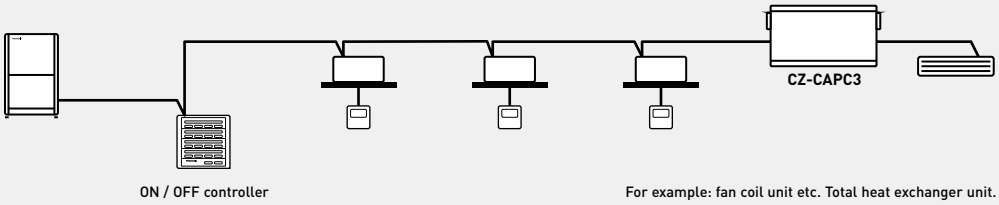


With 4 upgrade packages the basic software can be upgraded to suit individual requirements.

Centralised controllers

Local adaptor for ON / OFF control

CZ-CAPC3
Connection with general equipment.
· Control and status monitoring is possible for individual indoor unit (or any external electrical device up to 250 V AC, 10 A) by contact signal

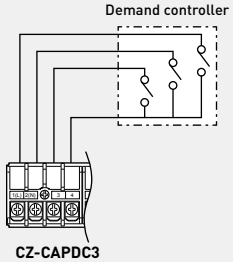


Demand control for PACi and Mini ECOi outdoor units

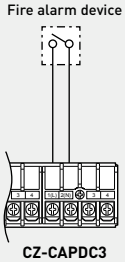
CZ-CAPDC3
Connection with general equipment.
· Control of both PACi and Mini ECOi outdoor units
· From the central control device, demand control and forced stop are possible

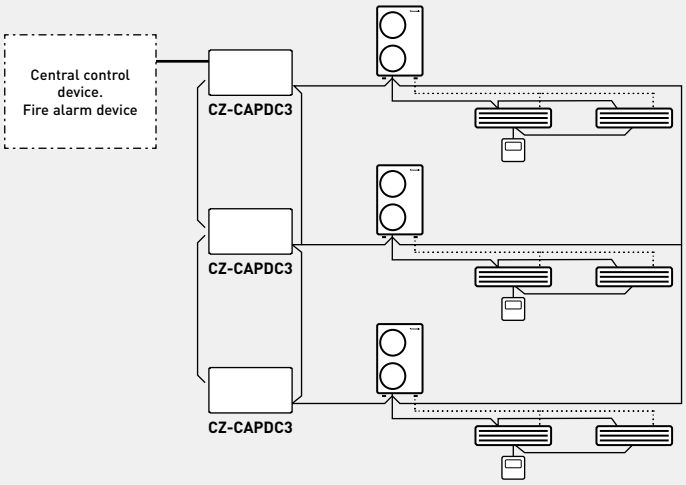
Input: Demand (non-voltage contact / 24 V DC / 2 mA, static signal).
Input: Forced stop operation (non-voltage contact / 24 V DC / 10 mA, static signal).
Forced stop input for fire alarm input control.
3 step demand control for staged control of outdoor unit capacity.

Demand control.



Forced stop.



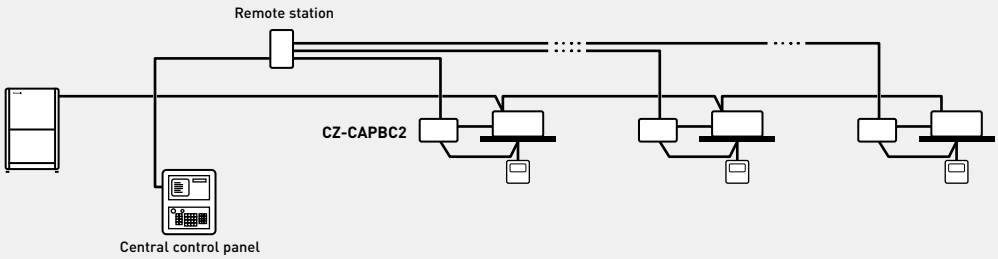


Mini Seri-Para I/O Unit 0 -10 V

CZ-CAPBC2
Connection with general equipment.

· Control and status monitoring is possible for individual indoor unit (1 group)
· In addition to operation and stop, there is a digital input function for air speed and operation mode
· Temperature setting and measuring of the indoor suction temperature can be performed from central monitoring
· Power is supplied from the T10 terminal of the indoor units
· The analog input for demand of the outdoor capacity by 20 steps (from 40% to 120%) by 0-10 V
· The analog input for temperature setting is 0 to 10 V, or 0 to 140 Ohm
· Separate power supply also is possible (in case of suction temperature measuring)

* Ask to your distributor.



Communication adaptor for VRF connectivity

CZ-CFUNC2
This communication interface is required to connect a ECOi and GHP systems to a BMS. CZ-CFUNC2 is very easy to operate and to connect to the Panasonic S-Link, which is the ECOi bus. From the CZ-CFUNC2, all the indoor and outdoor units of the installation can be easily control. Two linked wiring systems can be connected to one CZ-CFUNC2.
Dimensions (H x W x D): 260 x 200 x 68 mm

* As this is not a splash-proof design, it must be installed indoors or in the control panel, etc.

PACi and VRF connectivity

Controls and connectivities are the key to offer better comfort and price. Panasonic offers its customers cutting-edge technology, specially designed to ensure our air conditioning systems deliver optimal performance.

BMS CONNECTIVITY

PACi, ECOi and ECO G connectivity.

The interface has been designed specifically for Panasonic and provides complete monitoring, control and full functionality of the line-up from IntesisHome, KNX, Modbus, BACnet and LonWorks installations.
This connectivity solution with "PAW" model names is made by a third party company, please contact Panasonic for more information.

	Room controller	Interface	BMS Type	Maximum number of indoor units connected
PACi / ECOi indoor units	SER8150R0B1194 / SER8150R5B1194		Modbus / BACnet	1 unit/group
	PAW-RE2C4-MOD-WH / PAW-RE2C4-MOD-BK		Modbus	1 unit/group
		PAW-RC2-KNX-1i	KNX	1 (1 group of indoor units)
		PAW-RC2-MBS-1	Modbus RTU [1]	1 (1 group of indoor units)
		PAW-RC2-MBS-4	Modbus	4 Indoor/groups
		PAW-RC2-BAC-1	BACnet	1
		PAW-AZRC-KNX-1	KNX	1 (1 group of indoor units)
		PAW-AZRC-MBS-1	Modbus RTU [1]	1 (1 group of indoor units)
		PAW-AZRC-BAC-1	BACnet	1
PACi / ECOi / ECO G S-Link		**NEW** PAW-AC2-BMS-16	KNX, Modbus and BACnet	16
		NEW PAW-AC2-BMS-64	KNX, Modbus and BACnet	64
		NEW PAW-AC2-BMS-128	KNX, Modbus and BACnet	128
		CZ-CLNC2	LonWorks	16 groups of maximum 8 indoor units, in total maximum 64 indoor units

1) Interface Modbus RTU/TCP is needed in case if Modbus TCP connection. PAW-MBS-TCP2RTU (ModBus RTU Slave devices).

Airzone. Control of the hide-aways

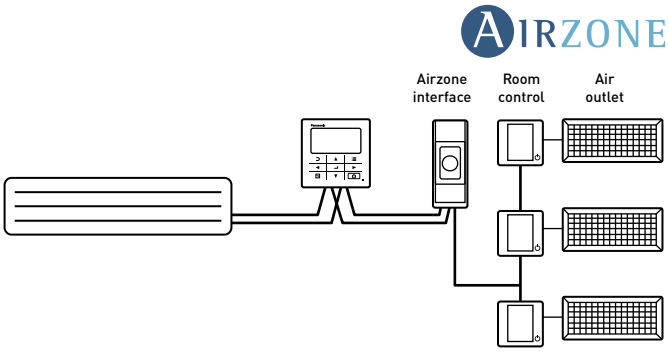
Airzone has developed interfaces to easily connect to Panasonic Commercial hide-away units. Ensuring optimum performance, comfort and energy savings, the system is efficient and easy to install.

Airzone full range of accessories for any duct project.

Different type of outlets

Also plenum automatic doors

Full range of remote controls (wired / Infrared, ...)



PACi, ECOi and ECO G connectivity indoor units

PCB's and cables for PACi, ECOi and ECO G indoor units.

Name of the cables	Function	Comment
CZ-T10	All T10 functions	Requires field supplied accessory
PAW-FDC	Operate external fan	Requires field supplied accessory
PAW-OCT	All option monitoring signals	Requires field supplied accessory
CZ-CAPE2	3-Pipe control PCB	Requires additional wires from spare part supply
PAW-EXCT	Forced Thermo OFF/Leakage D.	Requires field supplied accessory

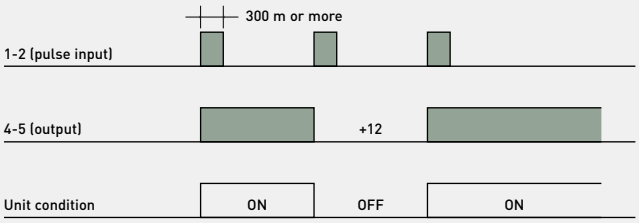
Name of the PBC	Function	Comment
PAW-T10	All T10 functions	Allows easy connection "Plug & Play"
PAW-PACR4	PCB for server room application. Available for PACi, ECOi or ECO G.	Interface for redundant operation up to 4 indoor unit groups

T10 connector (CN061)

CZ-T10
Panasonic has developed an optional accessory (consisting of plug + wires) called CZ-T10 to enable an easy connection to this T10 connector.

Connecting an ECOi indoor unit to an external device is easy. The T10 terminal featured in the electronic circuit board of all indoor units enables digital connection to external devices.

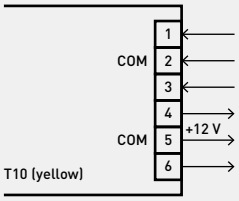
T10 terminal specification (T10: CN061 at indoor unit PCB).
· Control items: 1. Start / stop input
2. Remote controller prohibit input
3. Start signal output
4. Alarm signal output



NOTE: The wire length from indoor unit to the relay must be within 2,0 m. Pulse signal changeable to static by cutting jumper JP001.

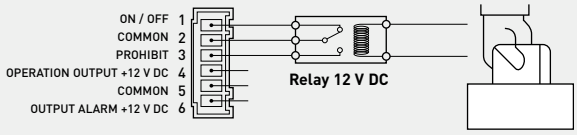
· Condition:
1. 1-2 (pulse input): Unit ON / OFF condition switching with a pulse signal. (1 pulse signal: shortage status more than 300 msec. or more)
2. 2-3 (static input): open / operation with remote is permitted (normal condition) close / remote controller is prohibited
3. 4-5 (static output): 12 V output during the unit ON / no output at OFF
4. 5-6 (static output): 12 V output when some errors occur / no output at normal

· Example of wiring:

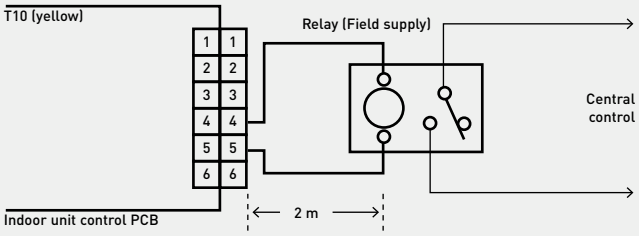


Usage example.
Forced OFF control.
Term 1 and 2: Free contact for ON / OFF signal (cut *JP1* for static signal) when the hotel card is it connected the contact must be close (the unit can be used).
Term 2 and 3: Free contact to prohibit all function in the remote controller install in the room when the hotel card is it removed the contact must be closed (the unit can not work).

Terminal = T10



Operation ON / OFF signal output.
· Condition:
4-5 (static output): 12 V output during the unit ON / no output at OFF
· Example of wiring:



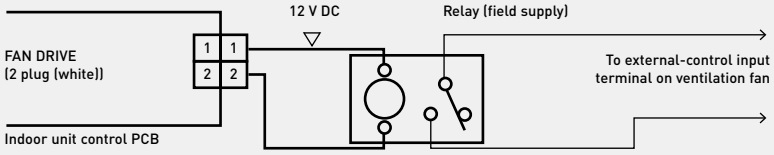
Note: The wire length from indoor unit to the Relay must be within 2,0 m. Pulse signal changeable to static by cutting jumper JP001.
* PACi NX Series is not compatible.

Fan drive connector (CN032)

PAW-FDC
Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-FDC to enable an easy connection to this fan drive connector (CN032).

Operating the ventilation fan from the remote controller
· Start / stop of external ventilation and total heat exchanger fans
· Works even if indoor unit is stopped
· In case of group control > all fans will operate; no individual control

External fan ON / OFF

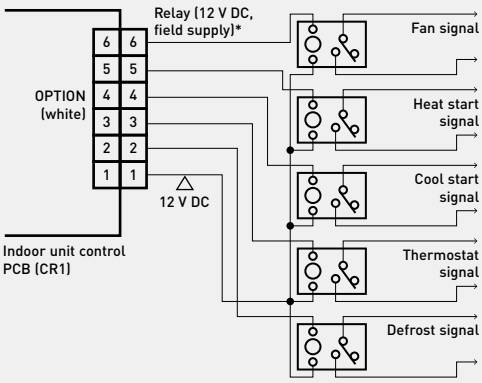


Option connector (CN060) output external signals

PAW-OCT
Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-OCT to enable an easy connection to this Option Connector (CN060).

With the combination of the T10 and the option CN060 an external control of the indoor units is possible!

6P (white): Outputs external signals as shown in the figure below.



* The relay must be installed at a distance of 2 m or less from the PCB.

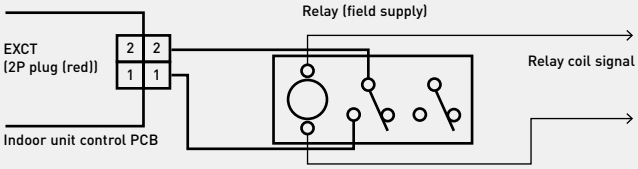
EXCT connector (CN073)

PAW-EXCT
Panasonic has developed an optional accessory (consisting of plug + wires) called PAW-EXCT to enable an easy connection to this EXCT Connector (CN073).

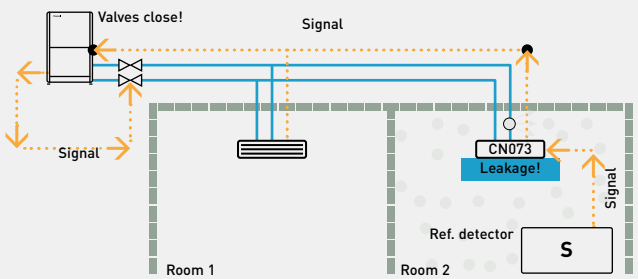
A) With static input.
> STATIC INPUT > THERMO OFF > ENERGY SAVING
2P plug (red): Can be used for demand control. When input is present, forces the unit to operate with the thermostat OFF.

Note: The length of the wiring from the indoor unit control PCB to the relay must be 2 m or less.

· Examples of wiring:



B) Example: In connection with a refrigerant sensor.
· Signal from leakage detector: non voltage, static.
· Indoor unit setting: Code 0b > 1
· Connector for leak detector: EXCT
· Outdoor unit setting:
Code C1 > 1 power output if alarm from O2 connector 230 V
Code C1 > 2 power output if alarm from O2 connector 0 V
· Displayed alarm message P14



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Do not add or replace refrigerant other than the specified type. Manufacturer is not responsible for the damage and deterioration in safety due to usage of the other refrigerant.
The outdoor units in this catalogue contains fluorinated greenhouse gases with a GWP higher than 150.

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