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## Panasonic®

### Building Passion, Building Solutions. Panasonic Air Conditioning Systems

We face a time in which "quality air" differentiates business. It's a time for Panasonic to fully display its strengths. Our ability to assemble and build superior systems isn't just due to the rich resources we have as a comprehensive electronics manufacturer, but also to Panasonic's 100 years of tradition, where each person thinks and acts on their own initiative while working in a team to reach further heights. We do not compromise. Each of our independent selves is a one stop solution. We face our customers' challenges together with our customers and do all that we can to build effective systems. As a true partner for our customers, we strive to always be at the forefront of business.

- Please read the Installation Instructions carefully before installing the unit, and the Operating Instructions before using it.
- Specifications are subject to change without prior notice.
- The contents of this catalogue are accurate as of September 2023.
- Due to printing considerations, actual colours may vary slightly from those shown.
- All graphics are provided solely for the purpose of illustrating a point.



Do not add or replace refrigerant other than the specified type. Manufacturer is not responsible for damage or deterioration in safety due to usage of other refrigerant.

Authorised Dealer

FSV Mini FSV ID, TH\_SEPTEMBER 2023

## FSV VRF SYSTEMS 2023/2024



NEW ///

FSV EX

COOLING ONLY ///



FSV EX

HEAT PUMP ///



FSV

HEAT PUMP ///



nanoeX INVERTER

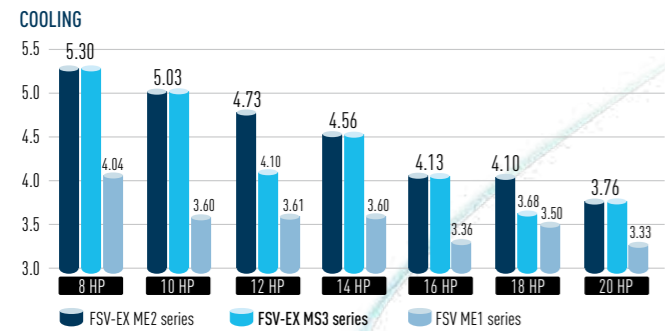
# FSV-EX Advantages



The most efficient, powerful and quiet system in Panasonic's history. There has never been a VRF system like it. It's the story of a true game changer - Panasonic FSV-EX.

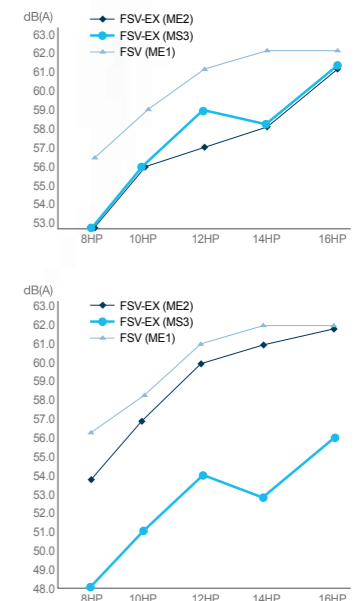
## Extraordinary Energy-Saving Performance

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



## Low-Noise Operation

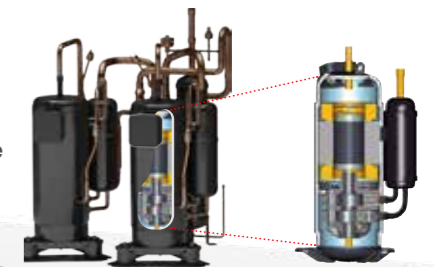
Numerous technological innovations, including an improved compressor and a newly designed bell mouth and larger fan, have dramatically reduced the outdoor noise level. The result is an even more comfortable building environment.



## Multiple large-capacity all inverter twin rotary compressor

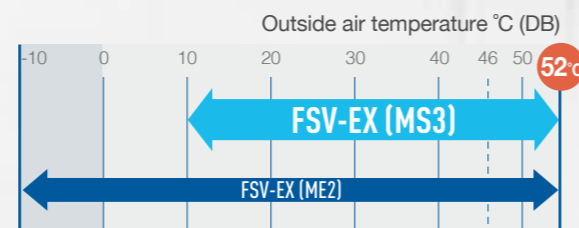
(multiple compressors for more than 14HP)

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.



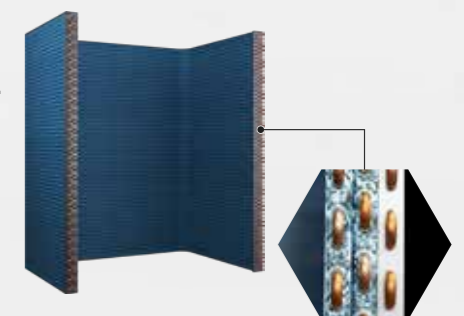
## Extended Operation Range Up to 52°C

The FSV-EX can provide cooling even when the outside temperature reaches a maximum of about 52°C. And amazingly, it 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.



## Enlarged heat exchanger surface area with triple surface\*

The new heat exchanger features a triple-surface construction. Compared to the divided dual-surface construction in current models, there is no division of space and the area for heat exchange is larger. Also, highly efficient piping pattern increases heat exchange performance by 5%.<sup>1</sup>



\* For 8 and 10 HP of ME2, and 8, 10 and 12 HP of MS3, the heat exchanger is 2-row design.



# 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 a connected indoor unit. 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.



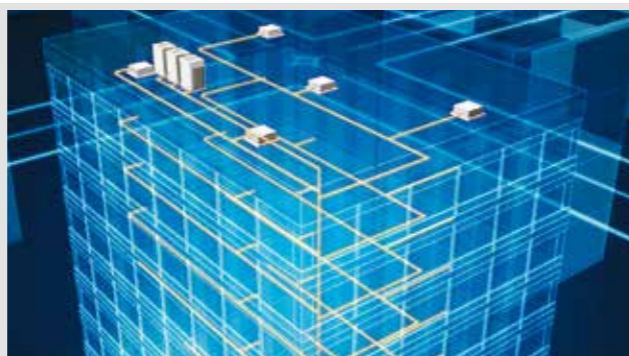
## STAGE-2

If oil levels in all compressors within the outdoor unit fall, oil can be replenished from adjacent outdoor units.



## STAGE-3

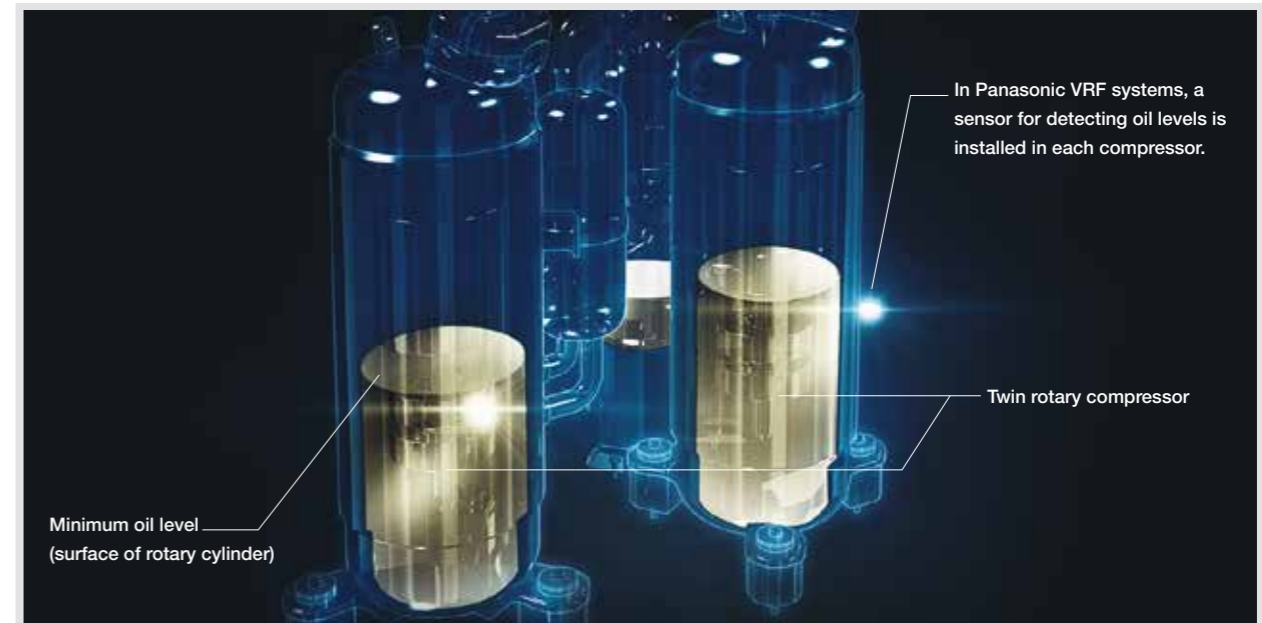
Forced oil recovery is implemented only if oil levels become insufficient in spite of above measures. The Panasonic system's design concept is radically different from conventional oil systems.



## Features of 3-stage oil recovery design

### 1 Oil sensors installed in each compressor

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



### 2 Highly functional oil separator

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

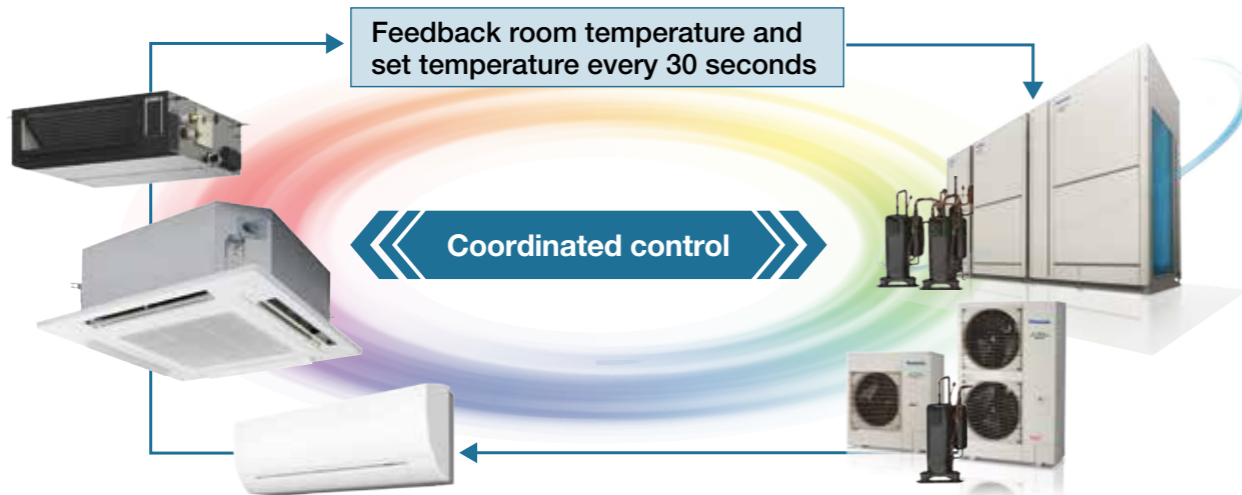




# Panasonic VRF: Top In Comfort

## Energy savings × Comfortable air conditioning ~Variable Evaporation Temperature (VET)~

Since 2006, all Panasonic VRF systems have included special VET technology, with variable refrigerant temperature, as standard. Our 'smart logic' system checks the temperature every 30 seconds, automatically adjusting the refrigerant temperature according to actual demand and outdoor conditions.

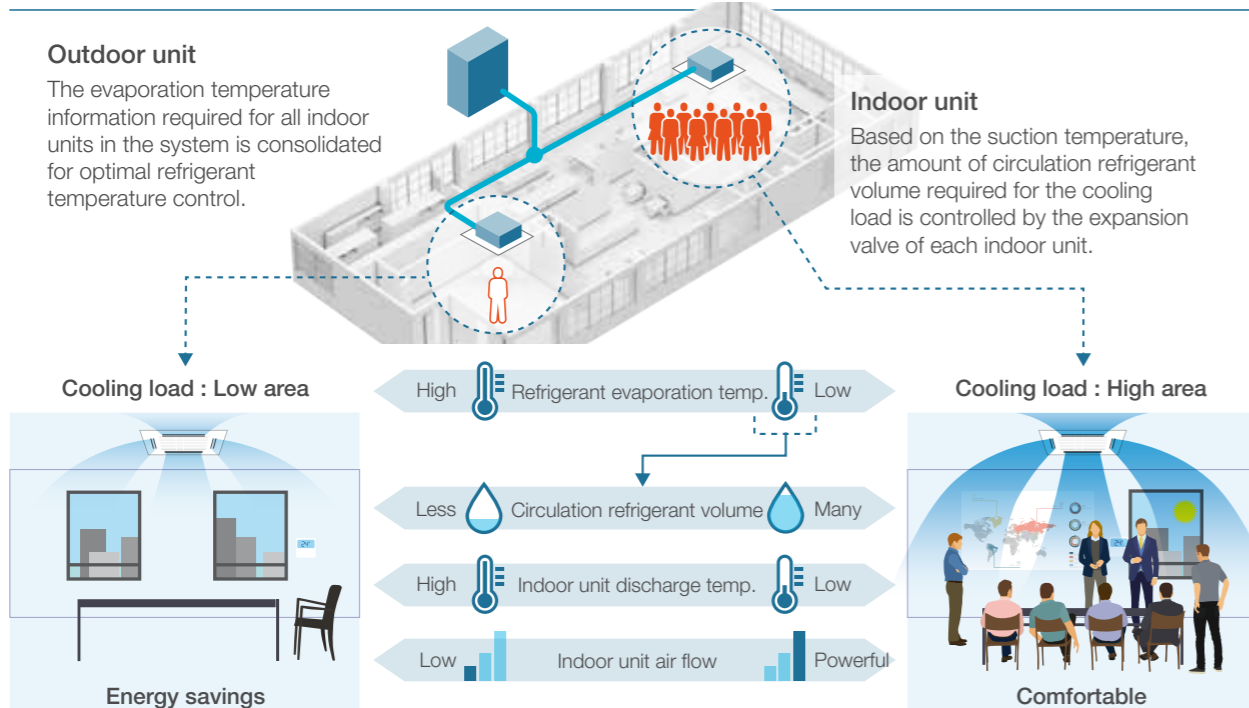


Calculate indoor refrigerant temperature and control the airflow automatically based on the difference between the setting temperature and actual indoor temperature.

Determine system refrigerant temperature and control compressor speed.

\* When fan speed is Auto.

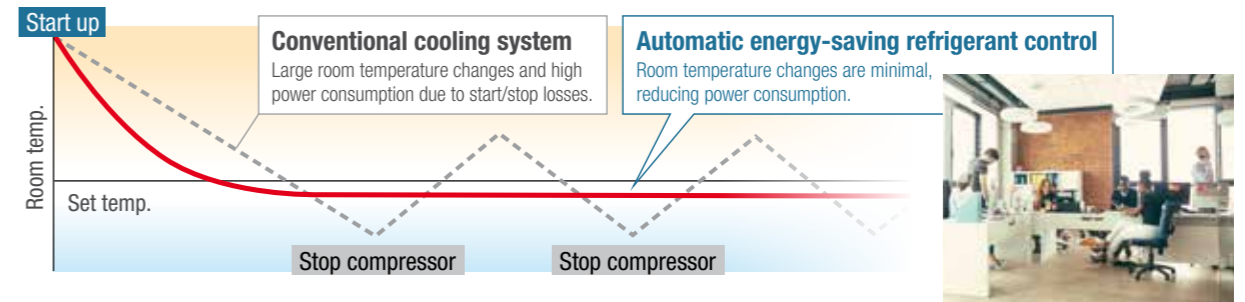
Achieves room-by-room comfort and overall system energy savings by controlling optimal refrigerant temperature and circulation volume based on all information of the entire system.



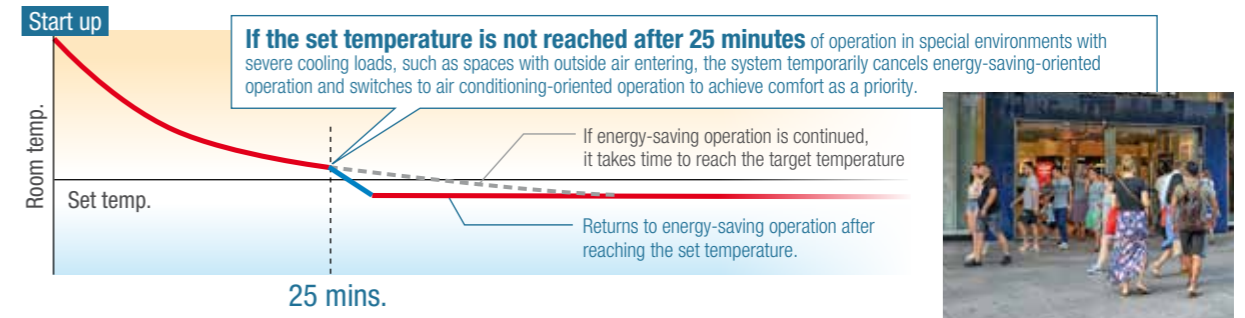
Combination of VET technology and inverter compressor achieves both energy savings and comfort by smoothly controlling the compressor to match the air conditioning load without stopping the compressor for optimum performance.

Image of room temperature change during cooling operation by scene.

1) Normal environment



2) Environment with severe cooling load





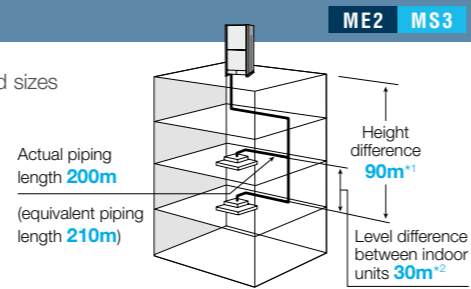
# FSV-EX Advantages

## Increased piping length for greater design flexibility

\*1: 40 m if the outdoor unit is below the indoor unit. Elevation difference of Max. 90m in case of ODU is higher than IDU may be allowed following certain conditions.  
\*1, \*2: Please consult with Panasonic sales engineers about the certain conditions in case of piping elevation of over 50m or level difference between indoor units over 15m is required.  
MS3 series with exceeding 82HP does not support a height difference of 90m and a level difference of 30m.

Adaptable to various building types and sizes  
Actual piping length : **200m**  
(equivalent piping length : 210m)

**Max. total piping length:1,000m**



## Connectable indoor/outdoor unit capacity ratio up to 130%\*1

FSV systems attain maximum indoor unit connection capacity of up to 130 %\*1 of the unit's connection range, depending on the outdoor and indoor models selected. So for a reasonable investment, FSV systems provide an ideal air conditioning solution for locations where full cooling/heating are not always required.

\*1 82HP and above is equivalent to 80HP.

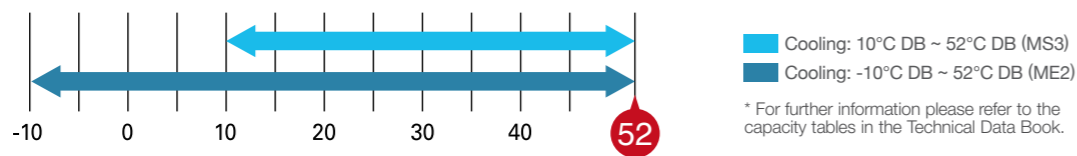
SYSTEM / HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96			
SYSTEM / kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0	73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0	140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	185.0	190.0	196.0	202.0	208.0	213.0	219.0	224.0	232.0	238.0	244.0	249.0	254.0	260.0	266.0	272.0			
	ME2 SERIES																																															
	MS3 SERIES																																															
MNcIU	13	16	19	23	26	29	33	36	40	43	46	50	53	56	59	63	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
No.1	29.1	36.4	43.6	52.0	58.5	65.0	72.8	80.0	88.4	94.9	102.1	110.5	117.0	124.6	131.3	138.1	146.9	153.4	161.2	169.0	175.5	182.0	188.5	196.3	202.8	210.6	218.4	226.2	234.0	240.5	247.0	254.8	262.6	270.4	278.9	284.7	291.2	291.2	291.2	291.2	291.2	291.2	291.2	291.2	291.2	291.2	291.2	
No.2	44.8	56.0	67.0	80.0	90.0	100.0	112.0	123.0	136.0	146.0	157.0	170.0	180.0	192.0	202.0	214.0	226.0	236.0	248.0	260.0	270.0	280.0	290.0	302.0	312.0	324.0	336.0	348.0	360.0	370.0	380.0	392.0	404.0	416.0	426.0	438.0	448.0	448.0	448.0	448.0	448.0	448.0	448.0	448.0	448.0	448.0	448.0	

MNcIU : Maximum Number of Connectable Indoor Unit  
No.1 : Max connectable IDU capacity / kW (without condition) No.2 : Max connectable IDU capacity / kW (with below \*2 condition)  
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

\*2 If the following conditions are satisfied, the effective range is "Max connectable IDU capacity / kW (with below \*condition) figures" written in above No.2.  
i) Obey the limited number of connectable indoor units.  
ii) The lower limit of operating range for heating outdoor temperature is limited to -10°CWB (standard -25°CWB). (Only for ME2 series.)  
iii) Simultaneous operation is limited to less than "Max connectable IDU capacity / kW (without condition) figures" written in above No.1.

## Wide operating range

- Cooling operation is possible when outdoor temperature as low as -10°C DB
  - Cooling operation is possible when outdoor temperature as high as 52°C DB
  - Heating operation is possible when outdoor temperature as low as -25°C WB
- The remote controller temperature can be set from 18°C up to 30°C (Cooling), 16°C up to 30°C (Heating)\*.  
\* Depending on the type of remote controller.



\* For further information please refer to the capacity tables in the Technical Data Book.

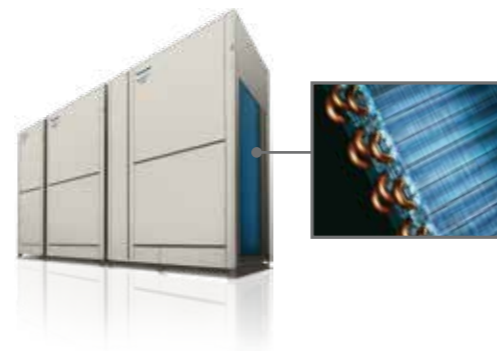
## High-durability outdoor unit

Corrosion-resistance treated for high resistance to rust and salty air to assure 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.

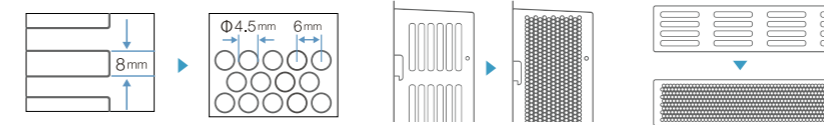
\* Specific model with suffix "E" has this treatment.



## Prevents unit stoppages due to short circuits caused by geckos

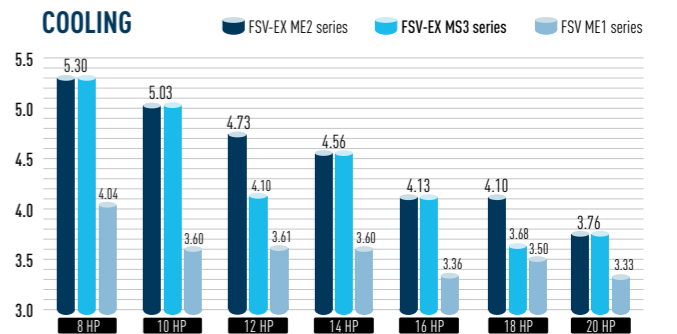
One of the common causes of failures of the outdoor unit is electrical short circuits caused by geckos, small animals such as rats and insects entering the unit. The unit eliminates gaps that prevent geckos from entering the internal PCB and thus prevent operation stoppages.

### Change Slit



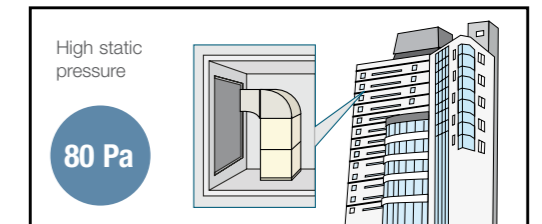
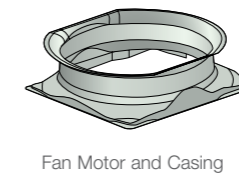
## Excellent energy savings

The operation efficiency has been improved using highly efficient R410A refrigerant, new DC inverter compressor, and new heat exchanger design.



## High external static pressure on condensers

With a newly designed fan, fan guard, motor, and casing, new models can be custom-installed on-site to provide up to 80 Pa of external static pressure. An air discharge duct prevents shortages of air circulation, allowing outdoor units to be installed on every floor of a building.



## INDEX

2 FSV-EX Advantages	16 FSV-EX MS3 Series	62 Smart Connectivity and Control Solutions
4 Intelligent 3-stage Oil Management System	22 2-WAY FSV-EX ME2 Series	64 Panasonic Comfort Cloud
6 Panasonic VRF: Top In Comfort	26 2-WAY Mini-FSV LE Series	66 VRF Smart Connectivity+
8 FSV-EX Advantages	32 nanoe™ X	70 FSV Controllers
10 Air Handling Unit Kit	34 CONEX	72 P-AIMS
12 CAC Design Support Software	36 Indoor Units	74 Panasonic VRF Global Project References
14 FSV Systems	38 FSV Indoor Units Range	

# Air Handling Unit Kit

AHU Kit connects FSV-EX and FSV outdoor units to Air Handling Units System



If you require this fresh air solution, please contact an authorized Panasonic distributor.

Connect Air Handling Unit to your FSV-EX and FSV systems for a high efficiency operation.

Application: Hotels, offices, server rooms or all large buildings where air quality control such as humidity control and fresh air are needed.

## Project References

### Office

**Hong Kong**  
Red Cross Headquarters



Air Conditioning System:  
VRF 2-way FSV ME1 series:  
2 systems  
Indoor Units: 2 units  
AHU Kit: 6 units  
Cooling Capacity: 280 kW / 80 USRT

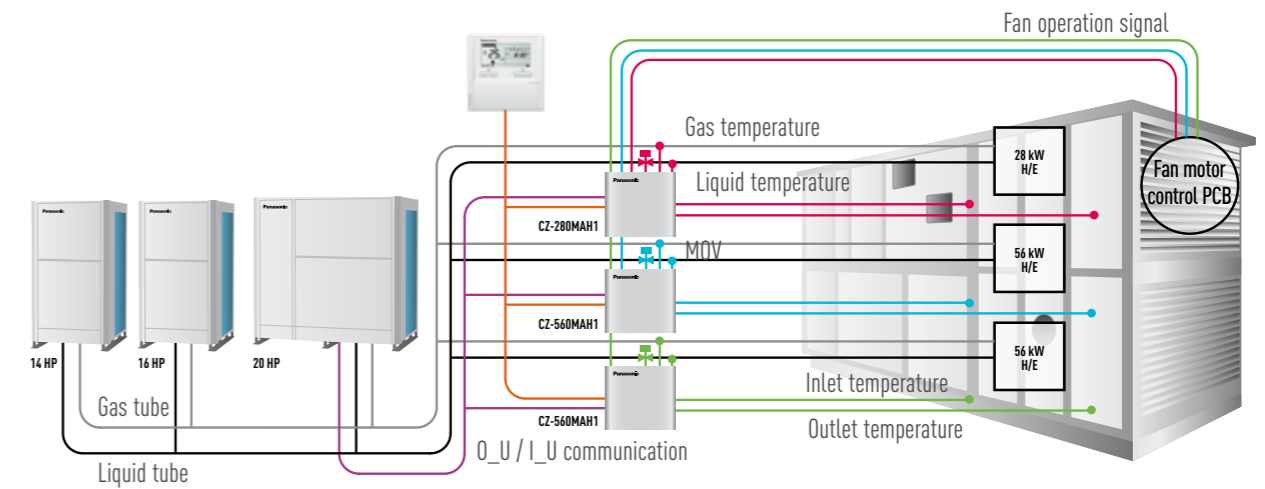


### Residential + Commercial

**Malaysia** Utropolis, Glenmarie

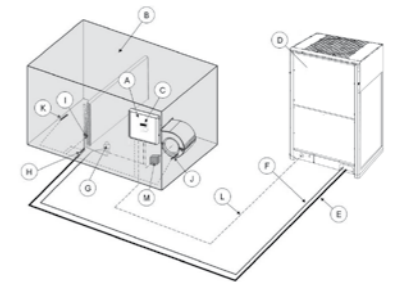


Air Conditioning System:  
VRF 2-way FSV ME1 series:  
29 systems  
Indoor Units: 168 units  
AHU Kit: 9 units  
Cooling Capacity: 3,077 kW / 875 USRT



## System and regulations. System overview

- A: AHU Kit controller box (with control PCB)
- B: AHU equipment (Field supplied)
- C: Remote controller (option parts)
- D: Outdoor unit
- E: Gas piping (Field supplied)
- F: Liquid piping (Field supplied)
- G: Electronic expansion valve
- H: Thermistor for gas pipe (E3)
- I: Thermistor for liquid pipe (E1)
- J: Thermistor for suction air (TA)
- K: Thermistor for discharge air (BL)
- L: Inter unit wiring
- M: Magnetic relay for operating the blower (Field supplied)



## Air Handling Unit Kit to connect to your ventilation system

### AHU Connection Kit

PCB, Power trans, Terminal block

Remote control can be easily installed on the AHU Kit box. (Remote control must be purchase separately.)

Expansion valve

Thermistor x2 (Refrigerant: E1, E3)

Thermistor x2 (Air: Tf, Tb)



### Optional remote controller

High-spec Wired Remote Controller CZ-RTC5B



Timer remote controller. CZ-RTC4A

## Optional parts: Following functions are available by using different type of control accessories:

### CZ-RTC4A Wired remote controller

- Operation-ON/OFF
- Mode select
- Temperature setting
- \* Fan operation signal can be taken from the PCB.

### T10 terminal

- Input signal= Operation ON/OFF

- Remote controller prohibition
- Output signal= Operating-ON status
- Alarm output (by DC12 V)

### OPTION terminal, DC12V outlet

- Output signal= Cool / Heat/Fan status
- Defrost
- Thermostat-ON

### CZ-CAPBC2 Seri-para I/O unit for each indoor unit

- Temperature setting by 0-10 V or 0-140 Ω input signal
- Room (inlet air) temp outlet by 4-20 mA
- Mode select or/and ON/OFF control
- Fan operation control
- Operation status output/ Alarm output

### Technical Zoom

- Max. piping length: 100m (actual)/ 120m (equivalent)
- Difference between longest and shortest piping from first branch: 10m
- Max. length of branch tubing: 12m
- \* Other conditions to be referred the standard piping design regulations.
- Available temperature range in Heating: -20 °C (WB)-15 °C (WB)
- Available temperature range for the suction air at AHU Kit: Cool: 18~32 °C / Heat: 16~30 °C

### CZ-280MAH1 / CZ-560MAH1

- The system controlled by the suction air (or return air from room) temperature as same as standard indoor unit. (Selectable mode: Automatic / Cooling / Heating / Fan / Dry)
- 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 system)
- Demand control (Forcible thermostat-OFF control by operating current)
- Defrost operation signal, Thermo-ON/OFF

### states output

- External target temperature setting via Indoor/Outdoor signal interface is available with CZ-CAPBC2. (Ex. 0 - 10 V)
- Connectable with P-LINK system

## AHU Connection Kit / System Combination

	Capacity (HP)	Outdoor unit combination				AHU kit combination					
	28.0 kW (10 HP)	U-10MS3H7	U-10ME2H7			CZ-280MAH1					
	56.0 kW (20 HP)	U-20MS3H7	U-20ME2H7			CZ-560MAH1					
	85.0 kW (30 HP)	U-12MS3H7	U-14ME2H7	U-18MS3H7	U-16ME2H7	CZ-560MAH1	CZ-280MAH1				
	113.0 kW (40 HP)	U-16MS3H7	U-20ME2H7	U-24MS3H7	U-20ME2H7	CZ-560MAH1	CZ-560MAH1				
FSV-EX ME2/MS3 series (Space-saving Combination)	140.0 kW (50 HP)	U-8MS3H7	U-14ME2H7	U-18MS3H7	U-16ME2H7	U-24MS3H7	U-20ME2H7	CZ-560MAH1	CZ-560MAH1	CZ-280MAH1	
	168.0 kW (60 HP)	U-12MS3H7	U-20ME2H7	U-24MS3H7	U-20ME2H7	U-24MS3H7	U-20ME2H7	CZ-560MAH1	CZ-560MAH1	CZ-560MAH1	
	196.0 kW (70 HP)	U-22MS3H7	U-10ME2H7	U-24MS3H7	U-20ME2H7	U-24MS3H7	U-20ME2H7	U-20ME2H7	CZ-560MAH1	CZ-560MAH1	CZ-280MAH1
	224.0 kW (80 HP)	U-8MS3H7	U-20ME2H7	U-24MS3H7	U-20ME2H7	U-24MS3H7	U-20ME2H7	U-24MS3H7	CZ-560MAH1	CZ-560MAH1	CZ-560MAH1
	254.0 kW (90HP)	U-18MS3H7	U-24MS3H7	U-24MS3H7	U-24MS3H7	U-24MS3H7	U-24MS3H7	CZ-560MAH1	CZ-560MAH1	CZ-560MAH1	

\*These are preliminary. Please consult with Panasonic sales engineers.

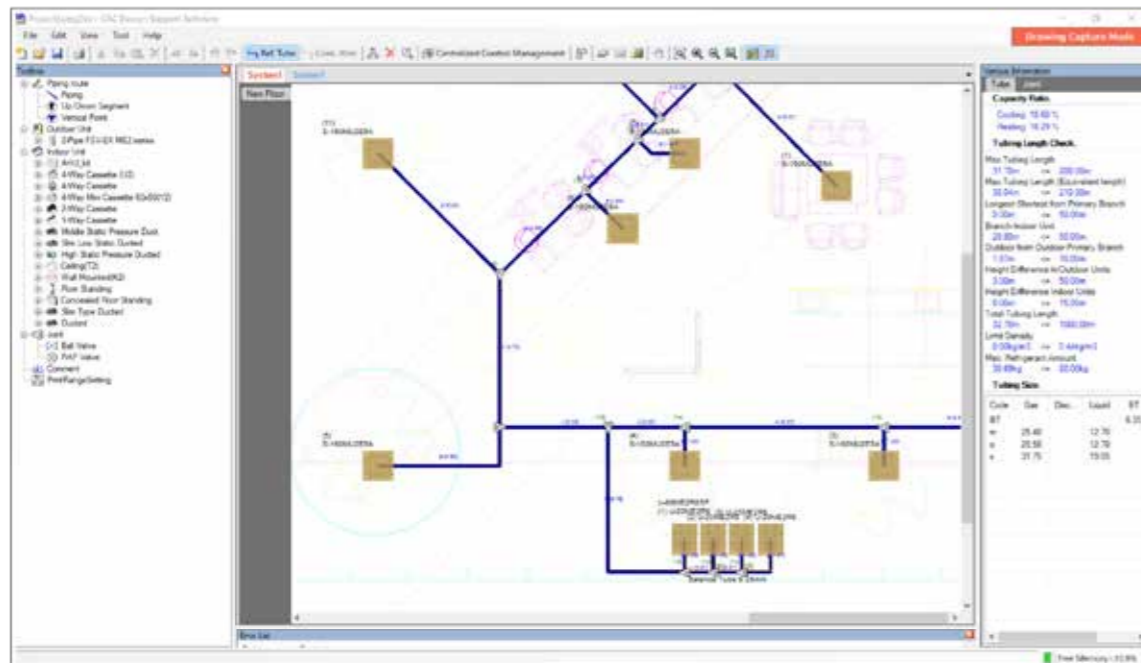


# CAC Design Support Software

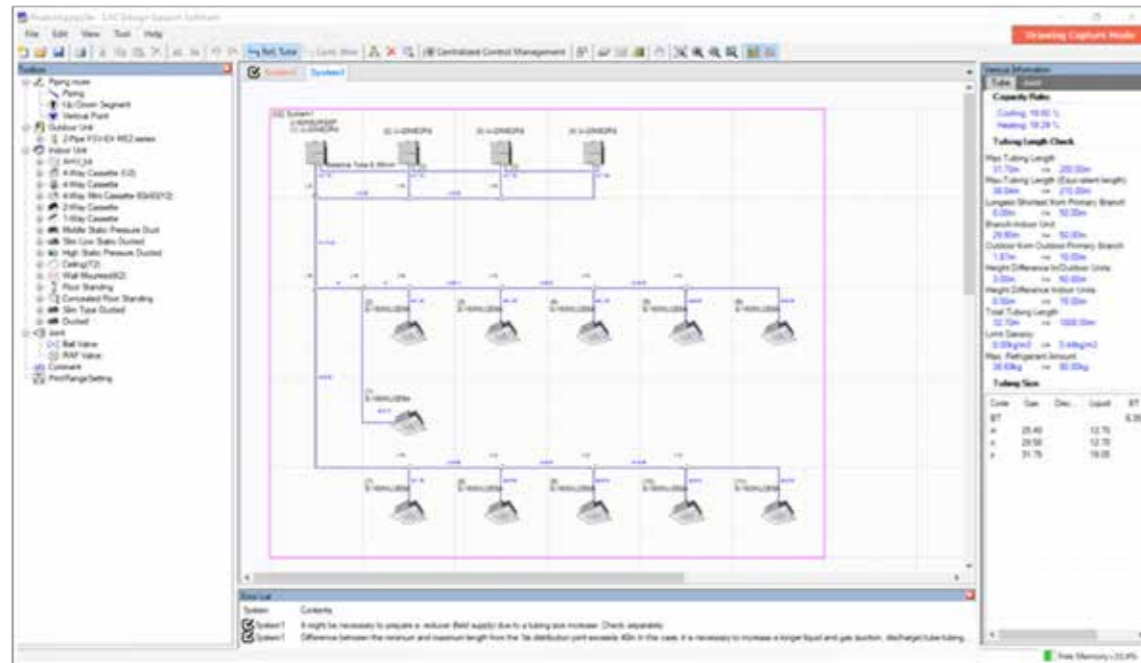


Features the unique Drawing Capture Mode function providing More thorough spec-in and tender quotation support for easier, Faster completion of work.

## Drawing Capture Mode Diagram

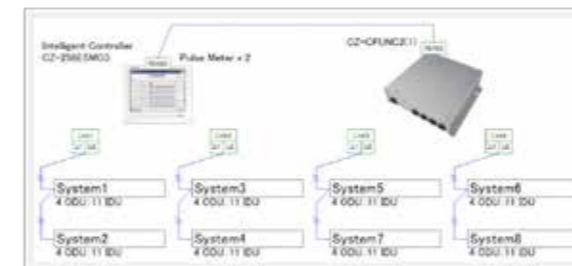
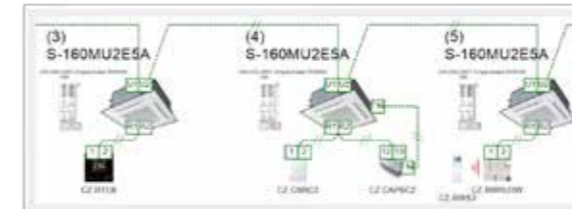


## Schematic Mode Diagram



## The Panasonic CAC Design Support software can be used for all Panasonic FSV

Panasonic has identified the importance of ever-increasing demands for fast and accurate responses to customer requests in our industry. More and more emphasis is being placed upon energy-efficiency in our marketplace. The ability to calculate cooling/heating loads and produce information of actual design conditions is a major advantage to any architect, consultant, contractor or end user. Panasonic understands the time-poor and demanding industry we are in and we are pleased to announce the launch of the next generation of our system design software program. The Panasonic CAC Design Support Software has been customized to make the selection and design process as quick and easy as possible. The design package utilizes system wizards and import tools to enable both simple and complex systems to be created. In addition, the system will allow outdoor and indoor units to be dragged on an interactive desktop. This allows users to create everything from realistic floor plans with detailed piping and wiring schematics to send out with quotations, through to installation guidance drawings.



No.	Room Name	Room Area	Room Volume	Room Height	Room Temp.	Room Humidity	Room Occupancy	Room Equipment	Room Cooling Load	Room Heating Load	Room Total Load	Room Cooling Capacity	Room Heating Capacity	Room Total Capacity
01	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
02	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
03	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
04	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
05	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
06	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
07	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
08	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
09	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
10	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
11	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00
12	Office	10.00	30.00	3.00	25.00	50.00	10.00	PC, Printer	10.00	0.00	10.00	10.00	0.00	10.00

## Features

- Drawing Capture mode
- Design selection from building floor drawing.
- Any kind of drawing format. (.pdf, .dxf, .dwg, etc.)
- Conventional Schematic diagram.
- Easy to use system wizards.
- Converted duties for conditions and pipework.
- Auto(CAD) [.dxf/.dwg], Excel and PDF export.
- Detailed wiring and pipework diagrams with advising terminal number.

# FSV Systems

FSV systems are designed for energy savings, high efficiency, and high durability with strong cooling power even operating at high ambient temperature. Panasonic continuously apply advanced technologies to meet the requirements of diverse situations and contribute to the creation of comfortable living spaces.



## FSV-EX MS3 Series

Cooling-only model with space-saving system and high efficiency

### Space-saving Combination Model

Cooling only Type

- Wide range of systems from 8HP to 96HP
- Class-leading EER of 5.3 (for 8HP model)
- Industry-leading low noise of 53.0 DB (8HP model)
- Cooling operation possible with outdoor temperature as high as 52°C (DB)
- Long maximum pipe length (up to 1,000 m)
- Up to 64 indoor units connectable
- External static pressure of 80 Pa

### High Efficiency Combination Model

Cooling only Type

- Wide range of systems from 8HP to 64HP
- Class-leading EER of 5.3 (for 8HP model)
- Higher EER than the Space-saving Combination Model
- e.g., a combination of two 10HP units delivering 20HP reduces compressor load.



**NEW**



MS3 series movie



## 2-WAY Mini-FSV LE2 Series

For small-scale commercial and residential use

Cooling or Heating Type 1/3-phase

**4/5/6 HP  
High-Durability Model**

- High external static pressure 35Pa
- Wide operation range: Cooling: -10°C to 46°C DB, Heating at: -20°C to 18°C WB
- Refrigerant chargeless up to 50m
- Extraordinary energy saving: 5.08\* EER for 4HP model
- Demand response (Peak cut) by optional parts.
- Maximum number of connectable indoor units : 9\*
- Diversity ratio 50-130%
- DC inverter technology combined with R410A for excellent efficiency
- Demand response (Peak cut) by optional parts.
- One ampere starting current
- Full range of indoor units and control options
- Auto restart from outdoor unit
- Hi-durability outdoor unit model is available.
- Suitable for R22 renewal projects
- \* 6 HP only; 4 HP for 7 units, 5 HP for 8 units.



Industry  
Top Class  
EER/COP



## 2-WAY Mini-FSV LE1 Series

For small-scale commercial and residential use

Cooling or Heating Type 3-phase

**8/10 HP  
High-Durability Model**

- High external static pressure 35Pa
- Wide operation range: Cooling: -10°C to 46°C DB, Heating at: -20°C to 18°C DB
- Maximum number of connectable indoor units : 13
- Diversity ratio 50-130%
- DC inverter technology combined with R410A for excellent efficiency
- Actual piping length: 150m (Total piping length: 300m)
- System difference of elevation: 50m / 40m (outdoor above/below)
- Difference in elevation between indoor units: 15m
- Demand response (Peak cut) by optional parts.
- One ampere starting current
- Full range of indoor units and control options
- Auto restart from outdoor unit
- Hi-durability outdoor unit model is available.
- Suitable for R22 renewal project



Industry  
Top Class  
EER/COP



## 2-WAY FSV-EX ME2 Series

Extraordinary energy-saving performance and powerful operation

### Space-saving Combination Model

Cooling or Heating Type **High-Durability Model**

- Wide range of systems from 8HP to 80HP
- Class-leading EER of 5.3 (for 8HP model)
- Industry-leading low noise of 53.0 DB (8HP model)
- Cooling operation possible with outdoor temperature as high as 52°C (DB)
- Long maximum pipe length (up to 1,000 m)
- Up to 64 indoor units connectable
- External static pressure of 80 Pa
- Extended operating range allows heating with outdoor temperatures as low as -25°C (WB)

### High Efficiency Combination Model

Cooling or Heating Type **High-Durability Model**

- Wide range of systems from 8HP to 64HP
- Class-leading EER of 5.3 (for 8HP model)
- Higher EER than the Space-saving Combination Model
- e.g., a combination of two 10HP units delivering 20HP reduces compressor load.





### Cooling Only FSV-EX MS3 Series **HIGH EFFICIENCY COMBINATION MODEL**

Appearance																						
HP			8	10	12	14	16	18	20	22	24											
Model name			U-8MS3H7	U-10MS3H7	U-12MS3H7	U-14MS3H7	U-16MS3H7	U-18MS3H7E	U-20MS3H7E	U-22MS3H7E	U-24MS3H7E											
Power supply			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz																			
Capacity	Cooling	kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0											
		BTU/h	76,500	95,600	114,300	136,500	153,600	170,600	191,100	209,900	232,100											
EER / COP	Cooling	W/W	5.30	5.03	4.10	4.56	4.13	5.15	5.05	4.49	4.07											
Dimensions	H x W x D	mm	1,842 x 770 x 1,000	1,842 x 770 x 1,000	1,842 x 770 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,600 x 1,000	1,842 x 1,600 x 1,000	1,842 x 1,600 x 1,000	1,842 x 1,600 x 1,000											
		kg	210	210	210	313	313	420	420	420	420											
Electrical ratings	Cooling	Running current	A	7.14 / 6.78 / 6.54	9.62 / 9.14 / 8.81	13.6 / 13.0 / 12.5	15.3 / 14.5 / 14.0	18.4 / 17.5 / 16.8	16.6 / 15.7 / 15.2	19.2 / 18.2 / 17.5	23.1 / 22.0 / 21.2	27.9 / 26.5 / 25.5										
		Power input	kW	4.23	5.57	8.17	8.77	10.9	9.70	11.1	13.7	16.7										
Starting current			A	1	1	1	2	2	2	2	2	2										
Air flow rate		m³/h	13,440	13,440	13,440	13,920	13,920	26,880	26,880	26,880	26,880											
		L/s	3,733	3,733	3,733	3,867	3,867	7,467	7,467	7,467	7,467											
Refrigerant amount at shipment			kg	5.6	5.6	5.6	8.3	8.3	11.2	11.2	11.2											
External static pressure			Pa	80	80	80	80	80	80	80	80											
Piping connections	Gas pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø22.22 (Ø7/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)											
	Liquid pipe	mm (inches)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)											
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)											
Ambient temperature operating range			Cooling: 10°C (DB)~ +52°C (DB)																			
Sound pressure level	Normal mode	dB (A)	53.0	56.0	59.0	58.0	61.0	58.0	59.0	61.0	62.0											
	Silent mode (2)	dB (A)	48.0	51.0	54.0	53.0	56.0	53.0	54.0	56.0	57.0											
Sound power level	Normal mode	dB	74.0	77.0	80.0	79.0	82.0	79.0	80.0	82.0	83.0											



Appearance																														
HP			26	28	30	32	34	36	38	40	42	44	46	48	50	52														
Model name			U-26MS3H7E	U-28MS3H7E	U-30MS3H7E	U-32MS3H7E	U-34MS3H7E	U-36MS3H7E	U-38MS3H7E	U-40MS3H7E	U-42MS3H7E	U-44MS3H7E	U-46MS3H7E	U-48MS3H7E	U-50MS3H7E	U-52MS3H7E														
Power supply			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz																											
Capacity	Cooling	kW	73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0	140.0	145.0														
		BTU/h	249,100	267,900	290,100	307,200	327,600	344,700	365,200	385,700	402,700	423,200	443,700	460,800	477,800	494,900														
EER / COP	Cooling	W/W	4.42	4.11	4.31	4.13	4.30	4.09	4.31	4.09	4.31	4.11	4.25	4.13	4.27	4.12														
Dimensions	H x W x D	mm	1,842 x 2,010 x 1,000	1,842 x 2,010 x 1,000	1,842 x 2,420 x 1,000	1,842 x 2,420 x 1,000	1,842 x 2,430 x 1,000	1,842 x 2,430 x 1,000	1,842 x 2,840 x 1,000	1,842 x 2,840 x 1,000	1,842 x 3,250 x 1,000	1,842 x 3,250 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,670 x 1,000	1,842 x 3,670 x 1,000														
		kg	523	523	626	626	630	630	733	733	836	836	939	939	943	943														
Electrical ratings	Cooling	Running current	A	26.2 / 26.8 / 25.8	32.2 / 30.6 / 29.5	33.6 / 31.9 / 30.8	36.8 / 35.0 / 33.7	37.6 / 35.8 / 34.5	41.2 / 39.2 / 37.8	41.9 / 39.8 / 38.3	46.1 / 43.8 / 42.2	46.3 / 43.9 / 42.4	51.0 / 48.4 / 46.7	52.2 / 49.6 / 47.8	55.2 / 52.4 / 50.5	55.4 / 52.6 / 50.7														
		Power input	kW	16.5	19.1	19.7	21.8	22.3	24.7	24.8	27.6	27.4	30.2	30.6	32.7	32.8	35.2													
Starting current			A	3	3	4	4	3	3	4	4	5	5	6	6	5														
Air flow rate		m³/h	27,360	27,360	27,840	27,840	40,320	40,320	40,800	40,800	41,280	41,280	41,760	41,760	54,240	54,240														
		L/s	7,600	7,600	7,733	7,733	11,200	11,200	11,333	11,333	11,467	11,467	11,600	11,600	15,067	15,067														
Refrigerant amount at shipment			kg	13.9	13.9	16.6	16.6	16.8	16.8	19.5	19.5	22.2	22.2	24.9	24.9	25.1														
External static pressure			Pa	80	80	80	80	80	80	80	80	80	80	80	80	80														
Piping connections	Gas pipe	mm (inches)	Ø34.92 (Ø1-3/8)	Ø34.92 (Ø1-3/8)	Ø34.92 (Ø1-3/8)	Ø34.92 (Ø1-3/8)	Ø34.92 (Ø1-3/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)														
	Liquid pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)														
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)														
Ambient temperature operating range			Cooling: 10°C (DB)~ +52°C (DB)																											
Sound pressure level	Normal mode	dB (A)	62.0	63.0	63.0	64.0	63.0	64.0	64.0	65.0	65.0	65.0	65.0	66.0	65.0	66.0														
	Silent mode (2)	dB (A)	57.0	58.0	58.0	59.0	58.0	59.0	59.0	60.0	60.0	60.0	60.0	61.0	60.0	61.0														
Sound power level	Normal mode	dB	83.0	84.0	84.0	85.0	84.0	85.0	85.0	86.0	86.0	86.0	86.0	87.0	86.0	87.0														

Appearance															
HP			54	56	58	60	62	64							
Model name			U-54MS3H7E	U-56MS3H7E	U-58MS3H7E	U-60MS3H7E	U-62MS3H7E	U-64MS3H7E							
Power supply			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz												
Capacity	Cooling	kW	151.0	156.0	162.0	168.0	174.0	180.0							
		BTU/h	515,400	532,400	552,900	573,400	593,900	614,300							
EER / COP	Cooling	W/W	4.27	4.13	4.27	4.13	4.23	4.13							
Dimensions	H x W x D	mm	1,842 x 4,080 x 1,000	1,842 x 4,080 x 1,000	1,842 x 4,490 x 1,000	1,842 x 4,490 x 1,000	1,842 x 4,900 x 1,000	1,842 x 4,900 x 1,000							
		kg	1,046	1,046	1,149	1,149	1,252	1,252							
Electrical ratings	Cooling	Running current	A	59.8 / 56.8 / 54.7	63.8 / 60.6 / 58.4	64.0 / 60.8 / 58.6	68.7 / 65.3 / 62.9	70.2 / 66.7 / 64.2	73.6 / 69.9 / 67.4						
		Power input	kW	35.4	37.8	37.9	40.7	41.1	43.6						
Starting current			A	6	6	7	7	8	8						
Air flow rate		m³/h	54,720	54,720	55,200	55,200	55,680	55,680							
		L/s	15,200	15,200	15,333	15,333	15,467	15,467							
Refrigerant amount at shipment			kg	27.8	27.8	30.5	30.5	33.2	33.2						
External static pressure			Pa	80	80	80	80	80	80						
Piping connections	Gas pipe	mm (inches)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)							
	Liquid pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)							
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)							
Ambient temperature operating range			Cooling: 10°C (DB)~ +52°C (DB)												
Sound pressure level	Normal mode	dB (A)	66.0	66.0	66.0	67.0	66.0	67.0							
	Silent mode (2)	dB (A)	61.0	61.0	61.0	62.0	61.0	62.0							
Sound power level	Normal mode	dB	87.0	87.0	87.0	88.0	87.0	88.0							

GLOBALREMARKS

Rated conditions:	Cooling
Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB

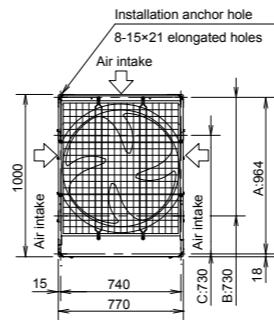
These specifications are subject to change without notice.

### 8 / 10 / 12 HP

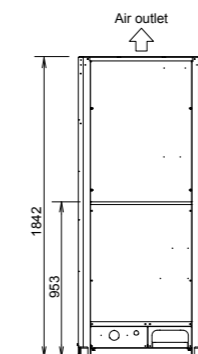
According to the installation site, you may choose the setting position in the depth direction of the anchor bolt from A, B or C.

- A: (Installation hole pitch) For removing tube forward
- B: (Installation hole pitch) For removing the downward
- C: (Installation hole pitch)

Top view



Front view



## Cooling Only FSV-EX MS3 Series

### SPACE SAVING COMBINATION MODEL

Appearance												
HP			8	10	12	14	16	18	20	22	24	
Model name			U-8MS3H7	U-10MS3H7	U-12MS3H7	U-14MS3H7	U-16MS3H7	U-18MS3H7	U-20MS3H7	U-22MS3H7	U-24MS3H7	
Power supply			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz									
Capacity	Cooling	kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0	
		BTU/h	76,500	95,600	114,300	136,500	153,600	170,600	191,100	209,900	232,100	
EER / COP	Cooling	W/W	5.30	5.03	4.10	4.56	4.13	3.68	3.76	3.60	3.42	
Dimensions	H x W x D	mm	1,842 x 770 x 1,000	1,842 x 770 x 1,000	1,842 x 770 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,540 x 1,000	1,842 x 1,540 x 1,000	1,842 x 1,540 x 1,000	
Net weight		kg	210	210	210	313	313	313	366	366	366	
Electrical ratings	Cooling	Running current	A	7.14 / 6.78 / 6.54	9.62 / 9.14 / 8.81	13.6 / 13.0 / 12.5	15.3 / 14.5 / 14.0	18.4 / 17.5 / 16.8	23.0 / 21.8 / 21.0	24.6 / 23.4 / 22.5	28.2 / 26.8 / 25.9	32.8 / 31.2 / 30.1
		Power input	kW	4.23	5.57	8.17	8.77	10.9	13.6	14.9	17.1	19.9
Starting current		A	1	1	1	2	2	2	2	2	2	
Air flow rate		m <sup>3</sup> /h	13,440	13,440	13,440	13,920	13,920	13,920	24,300	24,300	24,300	
		L/s	3,733	3,733	3,733	3,867	3,867	3,867	6,750	6,750	6,750	
Refrigerant amount at shipment		kg	5.6	5.6	5.6	8.3	8.3	8.3	9.5	9.5	9.5	
External static pressure		Pa	80	80	80	80	80	80	80	80	80	
Piping connections	Gas pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø22.22 (Ø7/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	
	Liquid pipe	mm (inches)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	
Ambient temperature operating range			Cooling: 10°C (DB)~ +52°C (DB)									
Sound pressure level	Normal mode	dB (A)	53.0	56.0	59.0	58.0	61.0	62.0	59.0	62.0	62.0	
	Silent mode (2)	dB (A)	48.0	51.0	54.0	53.0	56.0	57.0	54.0	57.0	57.0	
Sound power level	Normal mode	dB	74.0	77.0	80.0	79.0	82.0	83.0	80.0	83.0	83.0	



Appearance																																						
HP			26	28	30	32	34	36	38	40	42	44	46	48																								
Model name			U-26MS3H7SP	U-28MS3H7SP	U-30MS3H7SP	U-32MS3H7SP	U-34MS3H7SP	U-36MS3H7SP	U-38MS3H7SP	U-40MS3H7SP	U-42MS3H7SP	U-44MS3H7SP	U-46MS3H7SP	U-48MS3H7SP																								
Power supply			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz																																			
Capacity	Cooling	kW	73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0																								
		BTU/h	249,100	267,900	290,100	307,200	327,600	344,700	365,200	385,700	402,700	423,200	443,700	460,800																								
EER / COP	Cooling	W/W	4.03	4.05	3.79	3.75	3.76	3.63	3.78	3.67	3.52	3.56	3.49	3.44																								
Dimensions	H x W x D	mm	1,842 x 2,010 x 1,000	1,842 x 2,010 x 1,000	1,842 x 2,010 x 1,000	1,842 x 2,370 x 1,000	1,842 x 2,370 x 1,000	1,842 x 2,370 x 1,000	1,842 x 2,780 x 1,000	1,842 x 2,780 x 1,000	1,842 x 2,780 x 1,000	1,842 x 3,140 x 1,000	1,842 x 3,140 x 1,000	1,842 x 3,140 x 1,000																								
Net weight		kg	523	523	523	576	576	576	679	679	679	732	732	732																								
Electrical ratings	Cooling	Running current	A	30.6 / 29.0 / 28.0	33.1 / 31.5 / 30.3	37.8 / 35.9 / 34.6	39.6 / 37.7 / 36.3	42.6 / 40.4 / 39.0	45.9 / 43.6 / 42.0	47.8 / 45.4 / 43.7	51.4 / 48.9 / 47.1	55.9 / 53.1 / 51.2	57.5 / 54.6 / 52.6	61.4 / 58.4 / 56.3	64.9 / 61.7 / 59.4																							
		Power input	kW	18.1	19.4	22.4	24.0	25.5	27.8	28.3	30.8	33.5	34.8	37.2	39.3																							
Starting current		A	3	3	3	3	3	3	4	4	4	4	4																									
Air flow rate		m <sup>3</sup> /h	27,360	27,360	27,360	37,740	37,740	37,740	38,220	38,220	38,220	48,600	48,600	48,600																								
		L/s	7,600	7,600	7,600	10,483	10,483	10,483	10,617	10,617	10,617	13,500	13,500	13,500																								
Refrigerant amount at shipment		kg	13.9	13.9	13.9	15.1	15.1	15.1	17.8	17.8	17.8	19.0	19.0																									
External static pressure		Pa	80	80	80	80	80	80	80	80	80	80	80																									
Piping connections	Gas pipe	mm (inches)	Ø34.92 (Ø1-3/8)	Ø34.92 (Ø1-3/8)	Ø34.92 (Ø1-3/8)	Ø34.92 (Ø1-3/8)	Ø34.92 (Ø1-3/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)																								
	Liquid pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)																								
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)																								
Ambient temperature operating range			Cooling: 10°C (DB)~ +52°C (DB)																																			
Sound pressure level	Normal mode	dB (A)	63.0	63.0	64.0	63.0	63.0	64.0	63.0	65.0	65.0	64.0	65.0	65.0																								
	Silent mode (2)	dB (A)	58.0	58.0	59.0	58.0	58.0	59.0	58.0	60.0	60.0	59.0	60.0	60.0																								
Sound power level	Normal mode	dB	84.0	84.0	85.0	84.0	84.0	85.0	84.0	86.0	86.0	85.0	86.0	86.0																								

Appearance												
HP			50	52	54	56	58	60	62	64	66	
Model name			U-50MS3H7SP	U-52MS3H7SP	U-54MS3H7SP	U-56MS3H7SP	U-58MS3H7SP	U-60MS3H7SP	U-62MS3H7SP	U-64MS3H7SP	U-66MS3H7SP	
Power supply			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz									
Capacity	Cooling	kW	140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	185.0	
		BTU/h	477,800	494,900	515,400	532,400	552,900	573,400	593,900	614,300	631,400	
EER / COP	Cooling	W/W	3.72	3.75	3.65	3.63	3.64	3.55	3.65	3.59	3.50	
Dimensions	H x W x D	mm	1,842 x 3,610 x 1,000	1,842 x 3,610 x 1,000	1,842 x 3,610 x 1,000	1,842 x 3,970 x 1,000	1,842 x 3,970 x 1,000	1,842 x 3,970 x 1,000	1,842 x 4,380 x 1,000	1,842 x 4,380 x 1,000	1,842 x 4,380 x 1,000	
Net weight		kg	889	889	889	942	942	942	1,045	1,045	1,045	
Electrical ratings	Cooling	Running current	A	62.8 / 59.6 / 57.5	64.6 / 61.4 / 59.2	69.1 / 65.7 / 63.3	71.0 / 67.5 / 65.0	73.5 / 69.8 / 67.3	78.1 / 74.2 / 71.5	79.6 / 75.7 / 72.9	82.9 / 78.8 / 75.9	87.4 / 83.0 / 80.0
		Power input	kW	37.6	38.7	41.4	43.0	44.5	47.3	47.7	50.2	52.9
Starting current		A	5	5	5	5	5	5	6	6	6	
Air flow rate		m <sup>3</sup> /h	51,660	51,660	51,660	62,040	62,040	62,040	62,520	62,520	62,520	
		L/s	14,350	14,350	14,350	17,233	17,233	17,233	17,367	17,367	17,367	
Refrigerant amount at shipment		kg	23.4	23.4	23.4	24.6	24.6	24.6	27.3	27.3	27.3	
External static pressure		Pa	80	80	80	80	80	80	80	80	80	
Piping connections	Gas pipe	mm (inches)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	
	Liquid pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	
Ambient temperature operating range			Cooling: 10°C (DB)~ +52°C (DB)									
Sound pressure level	Normal mode	dB (A)	65.0	66.0	66.0	65.0	66.0	66.0	66.0	66.0	67.0	
	Silent mode (2)	dB (A)	60.0	61.0	61.0	60.0	61.0	61.0	61.0	61.0	62.0	
Sound power level	Normal mode	dB	86.0	87.0	87.0	86.0	87.0	87.0	87.0	87.0	88.0	

Appearance																																						
HP			68	70	72	74	76	78	80	82	84	86	88	90																								
Model name			U-68MS3H7SP	U-70MS3H7SP	U-72MS3H7SP	U-74MS3H7SP	U-76MS3H7SP	U-78MS3H7SP	U-80MS3H7SP	U-80MS3H7SP	U-80MS3H7SP	U-86MS3H7SP	U-88MS3H7SP	U-90MS3H7SP																								
Power supply			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz																																			
Capacity	Cooling	kW	190.0	196.0	202.0	208.0	213.0	219.0	224.0	232.0	238.0	244.0	249.0	254.0																								
		BTU/h	648,500	668,900	689,400	709,900	727,000	747,400	764,500	791,800	812,300	832,800	849,800	866,900																								
EER / COP	Cooling	W/W	3.53	3.49	3.44	3.62	3.64	3.57	3.56	3.50	3.56	3.57	3.53	3.47																								
Dimensions	H x W x D	mm	1,842 x 4,740 x 1,000	1,842 x 4,740 x 1,000	1,842 x 4,740 x 1,000	1,842 x 5,210 x 1,000	1,842 x 5,210 x 1,000	1,842 x 5,210 x 1,000	1,842 x 5,570 x 1,000	1,842 x 5,570 x 1,000	1,842 x 5,570 x 1,000	1,842 x 5,980 x 1,000	1,842 x 5,980 x 1,000	1,842 x 5,980 x 1,000																								
Net weight		kg	1,098	1,098	1,098	1,255	1,255	1,255	1,308	1,308	1,308	1,411	1,411	1,411																								
Electrical ratings	Cooling	Running current	A	88.8 / 84.4 / 81.4	92.8 / 88.2 / 85.0	97.1 / 92.3 / 88.9	95.8 / 91.0 / 87.8	97.7 / 92.8 / 89.4	101.2 / 96.2 / 92.7	103.9 / 98.7 / 95.1	107.7 / 102.3 / 98.6	112.3 / 106.7 / 102.8	114.2 / 108.5 / 104.6	116.4 / 110.6 / 106.6	120.9 / 114.8 / 110.7																							
		Power input	kW	53.8	56.2	58.8	57.4																															



### Cooling Only FSV-EX MS3 Series

### SPACE SAVING COMBINATION MODEL



Appearance					
HP		92	94	96	
		U-92MS3H7SP	U-94MS3H7SP	U-96MS3H7SP	
Model name		U-20MS3H7 U-24MS3H7 U-24MS3H7 U-24MS3H7	U-22MS3H7 U-24MS3H7 U-24MS3H7 U-24MS3H7	U-24MS3H7 U-24MS3H7 U-24MS3H7 U-24MS3H7	
Power supply		380/400/415V/3-phase/50Hz 380/400/3-phase/60Hz			
Capacity	Cooling	kW BTU/h	260.0 887,400	266.0 907,800	272.0 928,300
EER / COP	Cooling	W/W	3.49	3.45	3.42
Dimensions	H x W x D	mm	1,842 x 6,340 x 1,000	1,842 x 6,340 x 1,000	1,842 x 6,340 x 1,000
Net weight		kg	1,464	1,464	1,464
Electrical ratings	Cooling	Running current A Power input kW	123.0 / 116.9 / 112.7 74.5	127.2 / 120.8 / 116.4 77.0	131.3 / 124.7 / 120.2 79.5
Starting current		A	8	8	8
Air flow rate		m³/h L/s	97,200 27,000	97,200 27,000	97,200 27,000
Refrigerant amount at shipment		kg	38.0	38.0	38.0
External static pressure		Pa	80	80	80
Piping connections		Gas pipe mm (inches) Liquid pipe mm (inches) Balance pipe mm (inches)	Ø53.98 (Ø2-1/8) Ø22.22 (Ø7/8) Ø6.35 (Ø1/4)	Ø53.98 (Ø2-1/8) Ø22.22 (Ø7/8) Ø6.35 (Ø1/4)	Ø53.98 (Ø2-1/8) Ø22.22 (Ø7/8) Ø6.35 (Ø1/4)
Ambient temperature operating range		Cooling:	10°C (DB)~ +52°C (DB)		
Sound pressure level	Normal mode	dB (A)	67.0	68.0	68.0
	Silent mode (2)	dB (A)	62.0	63.0	63.0
Sound power level	Normal mode	dB	88.0	89.0	89.0

GLOBALREMARKS

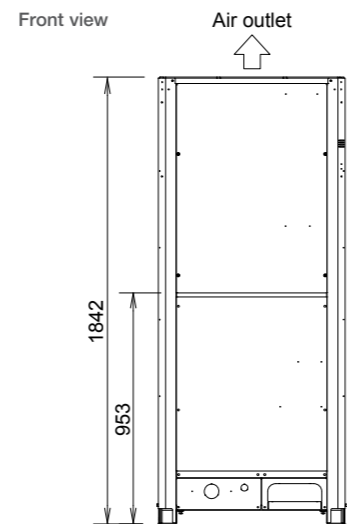
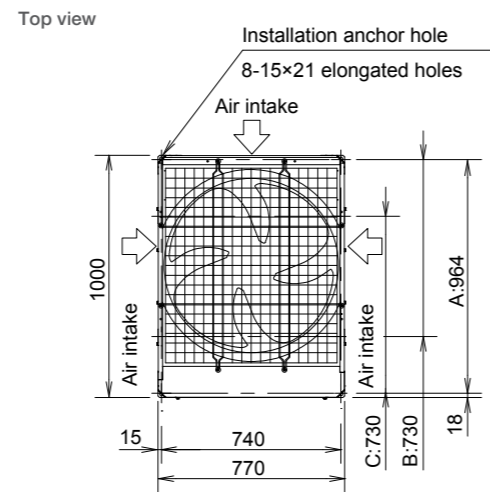
Rated conditions:	Cooling
Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB

These specifications are subject to change without notice.

#### 8 / 10 / 12 HP

According to the installation site, you may choose the setting position in the depth direction of the anchor bolt from A, B or C.

- A: (Installation hole pitch) For removing tube forward
- B: (Installation hole pitch) For removing the downward
- C: (Installation hole pitch)

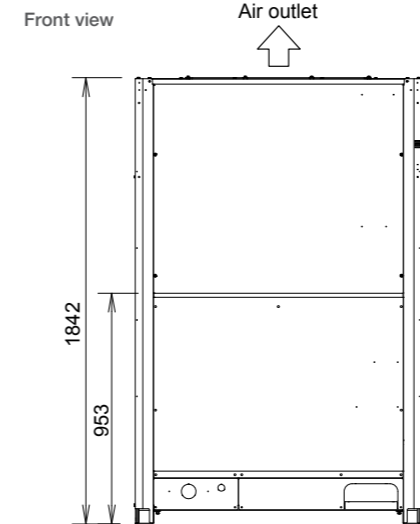
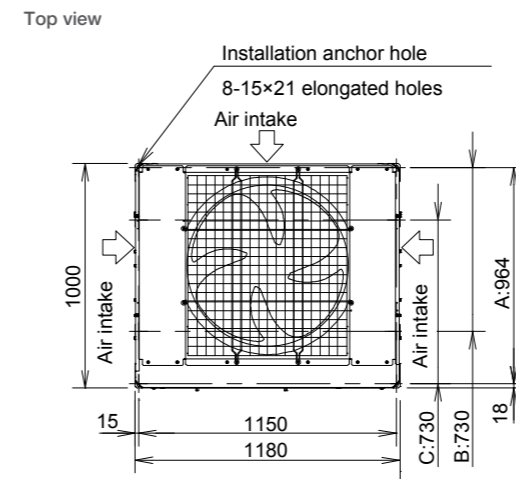


unit: mm

#### 14 / 16 / 18 HP

According to the installation site, you may choose the setting position in the depth direction of the anchor bolt from A, B or C.

- A: (Installation hole pitch) For removing tube forward
- B: (Installation hole pitch) For removing the downward
- C: (Installation hole pitch)

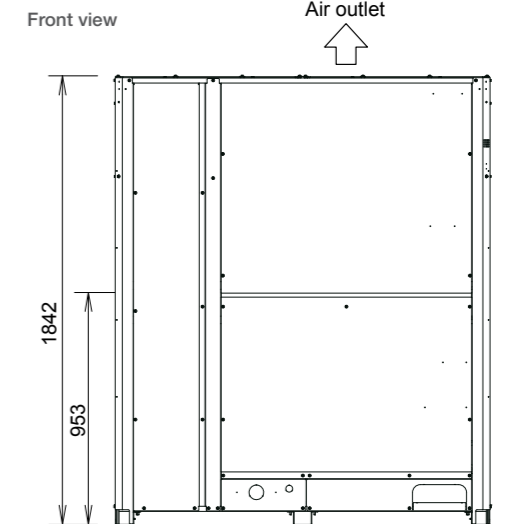
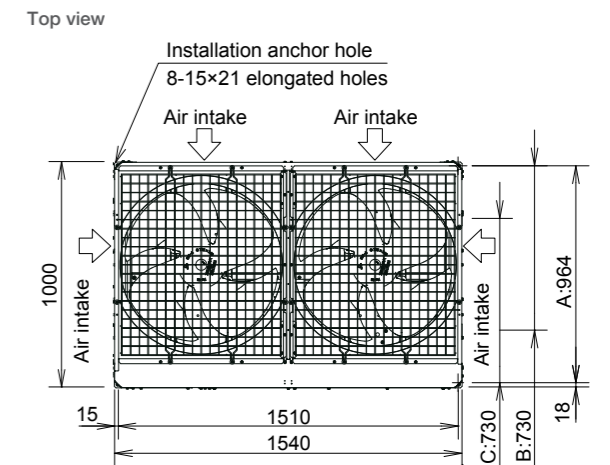


unit: mm

#### 20 / 22 / 24 HP

According to the installation site, you may choose the setting position in the depth direction of the anchor bolt from A, B or C.

- A: (Installation hole pitch) For removing tube forward
- B: (Installation hole pitch) For removing the downward
- C: (Installation hole pitch)



unit: mm





## 2-WAY FSV-EX ME2 Series Space-saving Combination Model

Appearance																						
HP		8	10	12	14	16	18	20	22	24												
Model name		U-8ME2H7	U-10ME2H7	U-12ME2H7	U-14ME2H7	U-16ME2H7	U-18ME2H7	U-20ME2H7	U-10ME2H7 U-12ME2H7	U-12ME2H7 U-12ME2H7												
Power supply		380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz																				
Capacity	Cooling	kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0											
	BTU/h		76,500	95,600	114,300	136,500	153,600	170,600	191,100	209,900	232,100											
EER / COP	Cooling	W/W	5.30	5.03	4.73	4.56	4.13	4.10	3.76	4.84	4.69											
	Heating	W/W	5.84	5.56	5.38	5.29	5.13	5.05	4.60	5.48	5.31											
Dimensions	H x W x D	mm	1,842 x 770 x 1,000	1,842 x 770 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,180 x 1,000	1,842 x 1,540 x 1,000	1,842 x 1,540 x 1,000	1,842 x 2,010 x 1,000	1,842 x 2,420 x 1,000											
	Net weight	kg	210	210	270	315	315	375	375	480	540											
Electrical ratings	Cooling	Running current	A	7.14 / 6.78 / 6.54	9.62 / 9.14 / 8.81	11.8 / 11.2 / 10.8	15.3 / 14.5 / 14.0	18.4 / 17.5 / 16.8	20.6 / 19.6 / 18.9	24.6 / 23.4 / 22.5	21.4 / 20.4 / 19.6											
		Power input	kW	4.23	5.57	7.08	8.77	10.9	12.2	14.9	12.7	14.5										
	Heating	Running current	A	7.15 / 6.79 / 6.54	9.68 / 9.20 / 8.86	11.6 / 11.1 / 10.7	14.9 / 14.1 / 13.6	16.6 / 15.8 / 15.2	18.9 / 18.0 / 17.4	22.9 / 21.7 / 20.9	21.3 / 20.2 / 19.5	24.0 / 22.8 / 22.0										
		Power input	kW	4.28	5.67	6.97	8.51	9.75	11.1	13.7	12.6	14.4										
Starting current	A	1	1	1	2	2	2	2	2	2												
Air flow rate	m³/h		13,440	13,440	13,920	13,920	13,920	24,300	24,300	27,360	27,840											
	L/s		3,733	3,733	3,867	3,867	3,867	6,750	6,750	7,600	7,733											
Refrigerant amount at shipment	kg		5.6	5.6	8.3	8.3	8.3	9.5	9.5	13.9	16.6											
External static pressure	Pa		80	80	80	80	80	80	80	80												
Piping connections	Gas pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø22.22 (Ø7/8)	Ø25.40 (Ø1)	Ø25.40 (Ø1)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)	Ø28.58 (Ø1-1/8)											
	Liquid pipe	mm (inches)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø12.70 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)											
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)											
Ambient temperature operating range			Cooling: -10°C (DB)~ +52°C (DB); Heating: -25°C (WB)~ +18°C (WB)																			
Sound pressure level	Normal mode	dB (A)	53.0	56.0	57.0	58.0	61.0	59.0	59.0	59.5	60.0											
	Silent mode (2)	dB (A)	48.0	51.0	52.0	53.0	56.0	54.0	54.0	54.5	55.0											
Sound power level	Normal mode	dB	74.0	77.0	78.0	79.0	82.0	80.0	80.0	80.5	81.0											



Appearance																											
HP		26	28	30	32	34	36	38	40	42	44	46	48														
Model name		U-10ME2H7 U-16ME2H7	U-12ME2H7 U-16ME2H7	U-14ME2H7 U-16ME2H7	U-16ME2H7 U-16ME2H7	U-14ME2H7 U-20ME2H7	U-16ME2H7 U-20ME2H7	U-16ME2H7 U-20ME2H7	U-18ME2H7 U-20ME2H7	U-18ME2H7 U-20ME2H7	U-20ME2H7 U-20ME2H7	U-10ME2H7 U-16ME2H7	U-12ME2H7 U-16ME2H7	U-14ME2H7 U-16ME2H7	U-16ME2H7 U-16ME2H7	U-18ME2H7 U-16ME2H7	U-20ME2H7 U-16ME2H7	U-10ME2H7 U-16ME2H7	U-12ME2H7 U-16ME2H7	U-14ME2H7 U-16ME2H7	U-16ME2H7 U-16ME2H7	U-18ME2H7 U-16ME2H7	U-20ME2H7 U-16ME2H7	U-22ME2H7 U-16ME2H7	U-24ME2H7 U-16ME2H7		
Power supply		380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz																									
Capacity	Cooling	kW	73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0													
	BTU/h		249,100	267,900	290,100	307,200	327,600	344,700	365,200	385,700	402,700	423,200	443,700	460,800													
EER / COP	Cooling	W/W	81.5	87.5	95.0	100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0													
	Heating	W/W	278,200	298,600	324,200	341,300	368,600	385,700	406,100	433,400	450,500	471,000	494,900	511,900													
Electrical ratings	Cooling	Running current	A	4.42	4.36	4.31	4.31	4.31	4.05	3.91	3.89	3.74	4.31	4.26	4.31	4.26	4.31	4.31	4.26	4.31	4.26	4.31	4.26	4.31	4.26	4.31	
		Power input	kW	28.2 / 26.8 / 25.8	30.4 / 28.9 / 27.8	33.6 / 31.9 / 30.8	36.8 / 35.0 / 33.7	40.0 / 38.0 / 36.6	43.1 / 40.9 / 39.4	45.9 / 43.6 / 42.0	49.9 / 47.4 / 45.7	46.3 / 43.9 / 42.4	49.1 / 46.7 / 45.0	52.2 / 49.6 / 47.8	55.2 / 52.4 / 50.5												
	Heating	Running current	A	16.5	18.0	19.7	21.8	23.7	25.8	27.5	30.2	27.4	29.1	30.6	32.7												
		Power input	kW	26.3 / 25.0 / 24.1	28.2 / 26.8 / 25.8	31.6 / 30.0 / 28.9	33.3 / 31.6 / 30.5	37.9 / 36.0 / 34.7	39.7 / 37.7 / 36.3	41.9 / 39.8 / 38.3	46.2 / 43.9 / 42.3	43.2 / 41.0 / 39.5	44.9 / 42.7 / 41.1	48.3 / 45.9 / 44.3	50.0 / 47.5 / 45.8												
Starting current	A	3	3	4	4	4	4	4	4	4	5	5	6	6													
Air flow rate	m³/h		27,360	27,840	27,840	27,840	38,220	38,220	48,600	48,600	41,280	41,760	41,760	41,760													
	L/s		7,600	7,733	7,733	7,733	10,617	10,617	13,500	13,500	11,467	11,600	11,600	11,600													
Refrigerant amount at shipment	kg		13.9	16.6	16.6	16.6	17.8	17.8	19.0	19.0	22.2	24.9	24.9														
External static pressure	Pa		80	80	80	80	80	80	80	80	80	80	80														
Piping connections	Gas pipe	mm (inches)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø31.75 (Ø1-1/4)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2)		
	Liquid pipe	mm (inches)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)		
	Balance pipe	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)		
Ambient temperature operating range			Cooling: -10°C (DB)~ +52°C (DB); Heating: -25°C (WB)~ +18°C (WB)																								
Sound pressure level	Normal mode	dB (A)	62.5	62.5	63.0	64.0	61.5	63.5	62.0	65.0	65.0	65.0	66.0	66.0													
	Silent mode (2)	dB (A)	57.5	57.5	58.0	59.0	56.5	58.5	57.0	60.0	60.0	60.0	61.0	61.0													
Sound power level	Normal mode	dB	83.5	83.5	84.0	85.0	82.5	84.5	83.0	86.0	86.0	86.0	87.0	87.0													

Global remarks

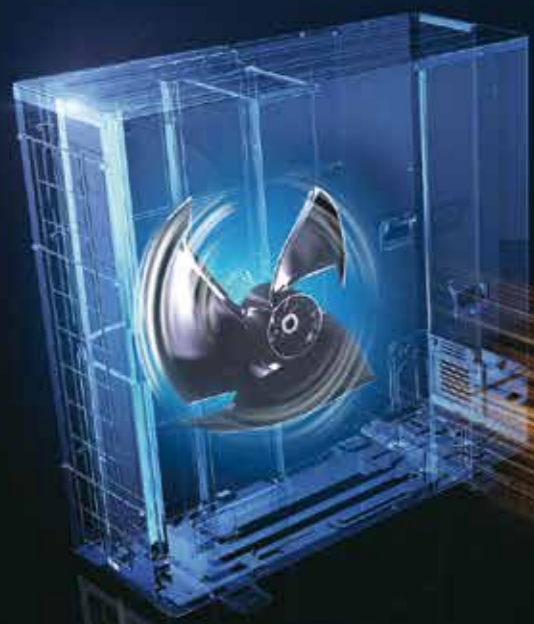
Rated conditions:	Cooling	Heating
Indoor air temperature	27°C DB / 19°C WB	20°C DB
Outdoor air temperature	35°C DB	7°C DB / 6°C WB

These specifications are subject to change without notice.  
High durable model (with suffix "E") has same specifications.

Appearance																	
HP		68	70	72	74	76	78	80									
Model name		U-12ME2H7 U-16ME2H7 U-20ME2H7 U-20ME2H7	U-10ME2H7 U-16ME2H7 U-20ME2H7 U-20ME2H7	U-16ME2H7 U-16ME2H7 U-20ME2H7 U-20ME2H7	U-16ME2H7 U-18ME2H7 U-20ME2H7 U-20ME2H7	U-16ME2H7 U-16ME2H7 U-20ME2H7 U-20ME2H7	U-18ME2H7 U-20ME2H7 U-20ME2H7 U-20ME2H7	U-18ME2H7 U-20ME2H7 U-20ME2H7 U-20ME2H7	U-20ME2H7 U-20ME2H7 U-20ME2H7 U-20ME2H7								
Power supply		380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz															
Capacity	Cooling	kW	190.0	196.0	202.0	208.0	213.0	219.0	224.0								
	BTU/h		648,500	668,900	689,400	709,900	727,000	747,400	764,500								
EER / COP	Cooling	W/W	213.0	219.0	226.0	233.0	239.0	245.0	252.0								
	Heating	W/W	727,000	747,400	771,300	795,200</											

# 2-WAY Mini-FSV LE Series

## High External Static Pressure 35Pa



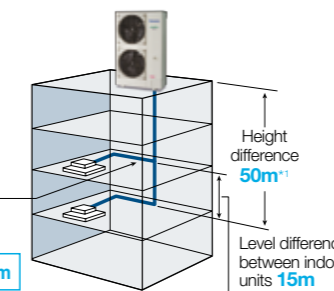
### Long piping design length for greater design flexibility

LE1 LE2

Adaptable to various building types and sizes

Actual piping length 150m (equivalent piping length 175m)

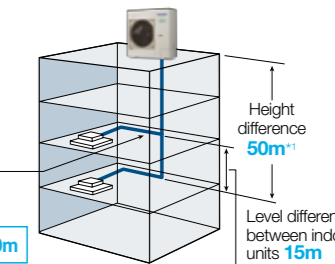
Max. total piping length: 300m



LE 1

Actual piping length 150m (equivalent piping length 175m)

Max. total piping length: 180m



LE 2

\*1: 40m if the outdoor unit is below the indoor unit.

### Refrigerant chargeless up to 50m

LE2

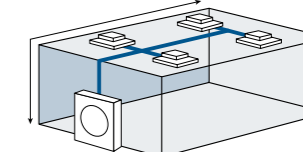
Up to 50m of piping without additional gas charging makes installation flexible, easy and hassle-free.

A 50m pipe length is sufficient for most residential and small business buildings. When total piping length exceeds 50m, additional refrigerant charge is required.

Chargeless  
Max. total piping length: 50m

Charge  
Max. total piping length: 180m (Actual length: 150m)

[ Sample piping lay-out ]



### High external static pressure 35Pa

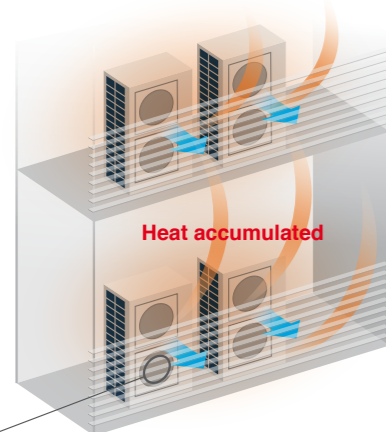
LE1 LE2

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



#### Previous model - Low pressure

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



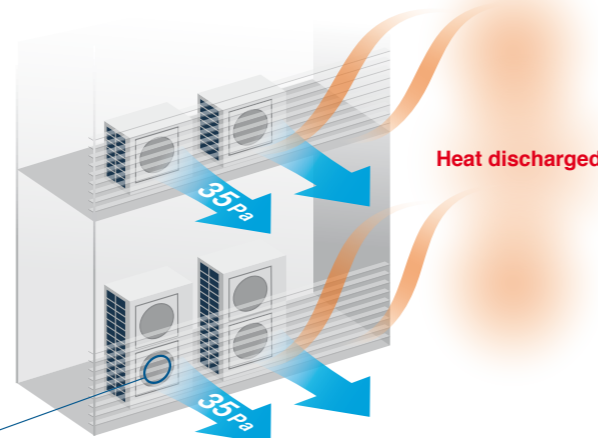
#### Previous fan

High electrostatic pressure disrupted the airflow of the previous fan, lowering the air pressure and preventing hot air from being discharged far enough.



#### LE series - High pressure

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



#### LE series fan

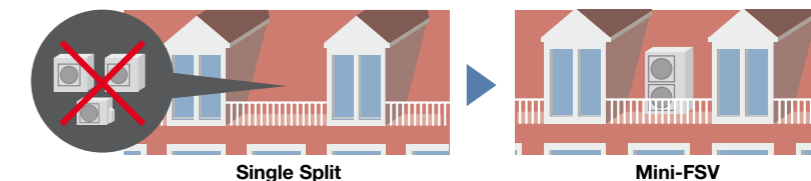
The new LE Series fan has ribs extending near the blade tips, in a structure that resists deformation. During high electrostatic pressure, this blade shape suppresses disruptions in the airflow, and a high air pressure of 35 Pa discharges the hot air a sufficient distance.



### Compact design

LE1 LE2

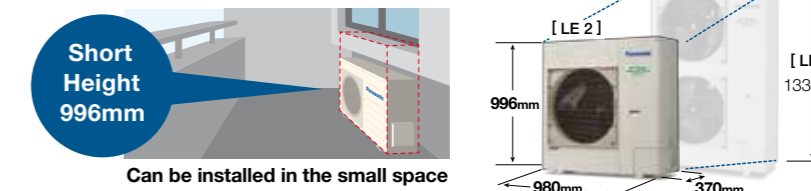
Also, since Mini VRF LE Series is a single unit, it is possible to install the unit in more various places compared to the Single Split system.



#### Short height of 996mm

LE2

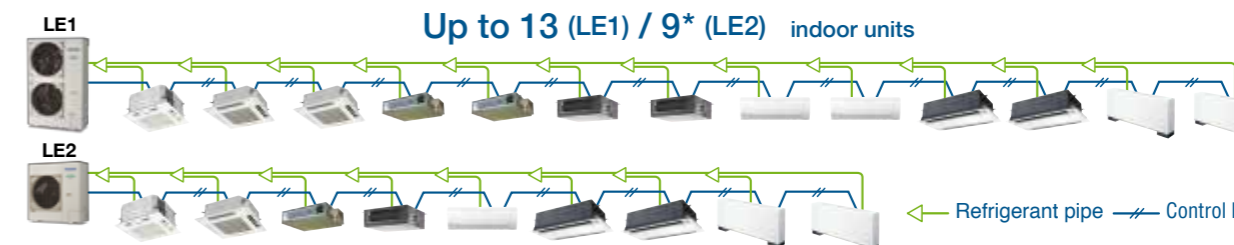
In addition to raising efficiency, we have made the outdoor unit more compact. It can now be installed in places that were previously too small.



### Up to 13 indoor units connectable

LE1 LE2

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



\* Use any of the 22 type indoor models. Depending on the size or type of indoor unit, tubing size shall be changed. Please refer manuals for details.  
\* Diversity ratio 50-130%  
\* 6 HP only; 4 HP for 7 units, 5 HP for 8 units.

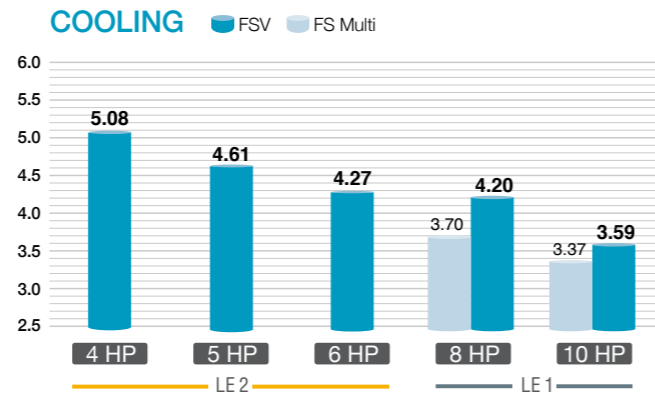


## 2-WAY Mini-FSV LE Series

### High efficiency

LE1 LE2

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



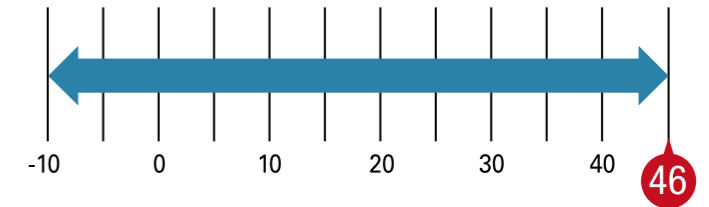
### Wide operating range

LE1 LE2

- Cooling operation is possible even when outdoor temperature is as low as -10°C DB.
- Cooling operation is possible even when outdoor temperature is as high as 46°C DB.

The remote controller temperature can be set from 18°C up to 30°C \*1.

\*1 Depending on the type of remote controller.

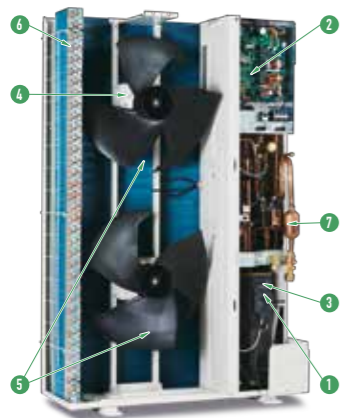


Cooling: -10°C DB ~ 46°C DB

\* For further information please refer to the capacity tables in the Technical Data Book.

### Energy savings design

LE1 LE2

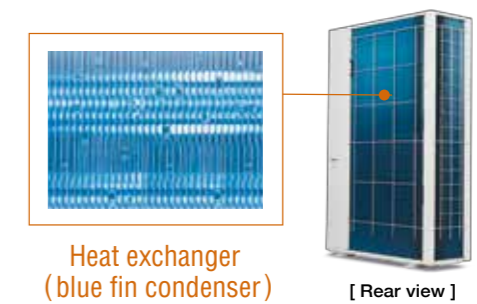


- 1 Panasonic Inverter Compressor** A large-capacity inverter compressor has been adopted. The inverter compressor is superior in performance with improved partial-load capacity.
- 2 Printed Circuit Board** The number of PCB is 2 pieces for making maintenance easier.
- 3 Accumulator** A large accumulator has been adopted to maintain compressor reliability because of the increased refrigerant quantity, which allows an extended max piping length.
- 4 DC Fan Motor** Checking load and outside temperature, the DC motor is controlled for optimum air volume.
- 5 Newly Designed Fan** The newly designed fan blades have been developed to inhibit air turbulence and to increase efficiency. As fan diameter has been increased its size, the air volume has been increased whilst maintaining a same sound level.
- 6 Heat Exchanger & 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.

### Blue fin condenser

LE1 LE2

The anti-corrosion Blue Fin treatment of the heat exchanger provides greater resistance against corrosion. All models are equipped with Blue Fin condenser.



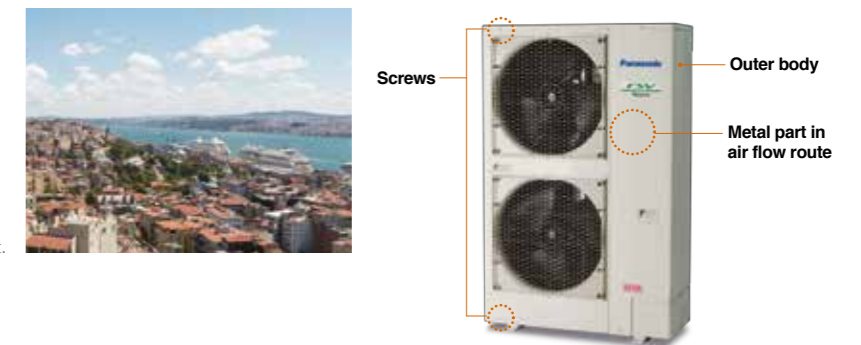
### High durability outdoor unit

LE1 LE2

Corrosion-resistance treated for high resistance to rust and salty air to assure 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.

\* Specific model with suffix "E" has this treatment.



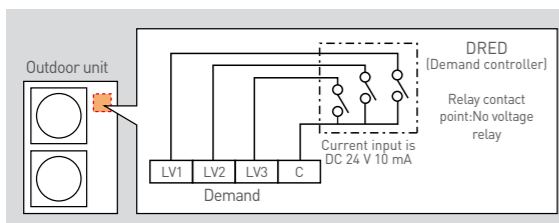
### Flexible demand response with the optional terminal block

LE1 LE2

#### Demand Response

Featuring inverter control technology, all Panasonic Mini FSV systems are Demand Response Management (DRM) ready. With this control, power consumption at times of peak load can be set in three steps to deliver optimum performance. This helps to reduce annual power consumption with minimal loss in comfort.

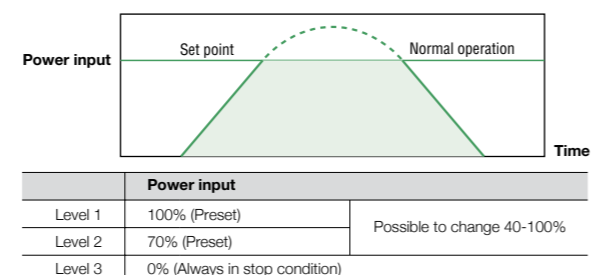
\*Terminal block supplied as optional kit. (CZ-CAPDC3) Please ask you dealer.



#### Flexible Demand Response with the CZ-CAPDC2\*1

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%.

\*1 An outdoor Seri-Para I/O unit (CZ-CAPDC2) is required for demand input signal.  
\* Demand timer setting for high spec remote controller is available.



### Quiet operation mode

LE1 LE2

- Quiet operation mode reduces outdoor unit operating sound down to 7dB than rating.
- 3-step set point is available.
- External input signal is also available.

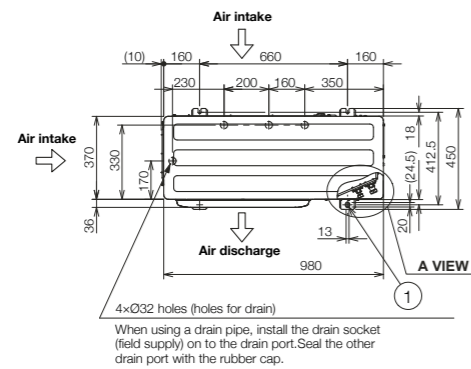
\* Timer setting of quiet operation mode is available in High-spec Remote Controller (CZ-RTC5B/CZ-RTC6 series).



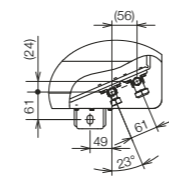
### 2-WAY Mini-FSV LE2 Series

HP	4			4			5			5			6			6																																											
Model name	U-4LE2H4			U-4LE2H7			U-5LE2H4			U-5LE2H7			U-6LE2H4			U-6LE2H7																																											
Power supply	220/230/240V/1-phase/50Hz 220/230V/1-phase/60Hz			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz			220/230/240V/1-phase/50Hz 220/230V/1-phase/60Hz			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz			220/230/240V/1-phase/50Hz 220/230V/1-phase/60Hz			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz																																											
Voltage	220V	230V	240V	380V	400V	415V	220V	230V	240V	380V	400V	415V	220V	230V	240V	380V	400V	415V																																									
Capacity	Cooling		kW			12.1			12.1			14.0			14.0			15.5			15.5																																						
	Heating		kW			12.5			12.5			16.0			16.0			16.5			16.5																																						
EER/COP	Cooling		W/W			5.08			5.08			4.61			4.61			4.27			4.27																																						
	Heating		W/W			5.95			5.95			5.25			5.25			5.08			5.08																																						
Dimensions 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																																								
Electrical ratings	Cooling	Running current	A			11.90			11.40			10.90			3.89			3.69			3.56			15.20			14.50			13.90			4.91			4.67			4.50			18.10			17.30			16.60			5.87			5.57			5.37		
		Power input	kW			2.38			2.38			2.38			2.38			3.04			3.04			3.04			3.04			3.04			3.63			3.63			3.63			3.63			3.63														
	Heating	Running current	A			10.60			10.10			9.70			3.47			3.29			3.18			15.20			14.60			14.0			4.93			4.68			4.51			16.20			15.50			14.90			5.25			4.99			4.81		
		Power input	kW			2.10			2.10			2.10			2.10			2.10			3.05			3.05			3.05			3.05			3.05			3.25			3.25			3.25			3.25			3.25											
Starting current	A			1			1			1			1			1			1			1																																					
Air flow rate	m <sup>3</sup> / min			69			69			72			72			74			74																																								
	L/s			1,150			1,150			1,200			1,200			1,233			1,233																																								
Refrigerant amount at shipment	kg			R410A 6.70			R410A 6.70			R410A 6.70			R410A 6.70			R410A 6.70			R410A 6.70																																								
Piping connection	Gas pipe		mm (inches)			Ø15.88 (Ø5/8)			Ø15.88 (Ø5/8)			Ø15.88 (Ø5/8)			Ø15.88 (Ø5/8)			Ø15.88 (Ø5/8)			Ø15.88 (Ø5/8)																																						
	Liquid pipe		mm (inches)			Ø9.52 (Ø3/8)			Ø9.52 (Ø3/8)			Ø9.52 (Ø3/8)			Ø9.52 (Ø3/8)			Ø9.52 (Ø3/8)			Ø9.52 (Ø3/8)																																						
Ambient temperature operating range	Cooling		-10°CDB~+46°CDB			-10°CDB~+46°CDB			-10°CDB~+46°CDB			-10°CDB~+46°CDB			-10°CDB~+46°CDB			-10°CDB~+46°CDB			-10°CDB~+46°CDB																																						
	Heating		-20°CWB~+18°CWB			-20°CWB~+18°CWB			-20°CWB~+18°CWB			-20°CWB~+18°CWB			-20°CWB~+18°CWB			-20°CWB~+18°CWB			-20°CWB~+18°CWB																																						
Sound pressure level (Cooling)	Normal mode		dB(A)			52.0			52.0			53.0			53.0			54.0			54.0																																						
	Silent mode (3)		dB(A)			45.0			45.0			46.0			46.0			47.0			47.0																																						
Sound power level (Cooling)	Normal mode		dB			69.0			69.0			71.0			71.0			73.0			73.0																																						
	Silent mode (3)		dB			69.0			69.0			71.0			71.0			73.0			73.0																																						
Global remarks	Rated conditions:		Cooling			Heating			These specifications are subject to change without notice.																																																		
	Indoor air temperature		27°C DB / 19°C WB			20°C DB			High durable model (with suffix "E") has same specifications.																																																		
	Outdoor air temperature		35°C DB			7°C DB / 6°C WB																																																					

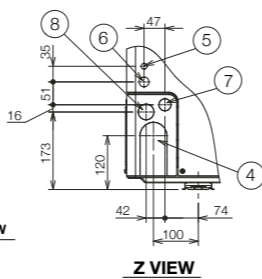
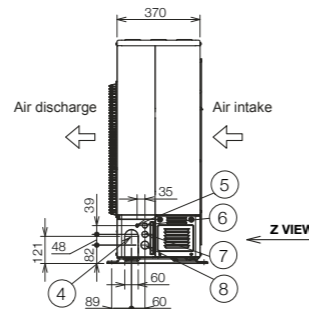
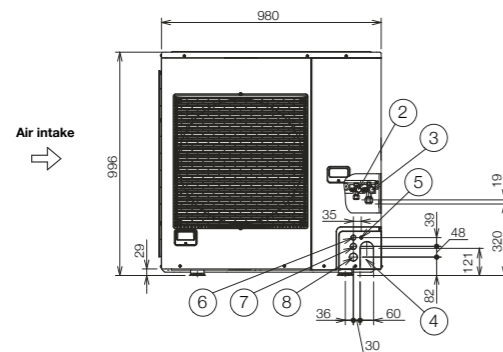
### Dimensions U-4LE2H4 / U-4LE2H7 U-5LE2H4 / U-5LE2H7 U-6LE2H4 / U-6LE2H7



- ① Mounting hole (4-R6.5), anchor bolt : M10
- ② Refrigerant tubing (liquid tube), flared connection (Ø9.52)
- ③ Refrigerant tubing (gas tube), flared connection (Ø15.88)
- ④ Refrigerant tubing port
- ⑤ Electrical wiring port (Ø13)
- ⑥ Electrical wiring port (Ø22)
- ⑦ Electrical wiring port (Ø27)
- ⑧ Electrical wiring port (Ø35)



A VIEW

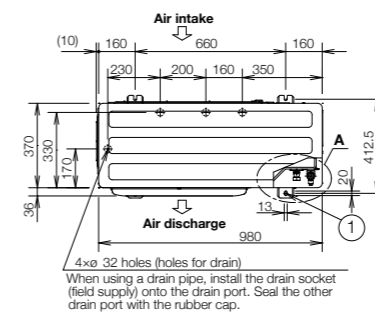


Unit: mm

### 2-WAY Mini-FSV LE1 Series

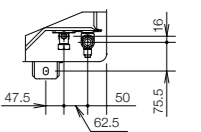
HP	8			10																			
Model name	U-8LE1H7			U-10LE1H7																			
Power supply	380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz			380/400/415V/3-phase/50Hz 380/400V/3-phase/60Hz																			
Voltage	380V	400V	415V	380V	400V	415V																	
Capacity	Cooling		kW			22.4			28.0														
	Heating		kW			25.0			28.0														
EER/COP	Cooling		W/W			4.20			3.59														
	Heating		W/W			4.52			4.55														
Dimensions H x W x D	mm			1,500 x 980 x 370			1,500 x 980 x 370																
Net weight	kg			132			133																
Electrical ratings	Cooling	Running current	A			8.70			8.25			7.95			12.7			12.1			11.7		
		Power input	kW			5.33			5.33			5.33			7.80			7.80			7.80		
	Heating	Running current	A			9.05			8.60			8.25			10.0			9.55			9.20		
		Power input	kW			5.53			5.53			5.53			6.15			6.15			6.15		
Starting current	A			1			1			1													
Air flow rate	m <sup>3</sup> / min			150			150			160													
	L/s			2,500			2,500			2,667													
Refrigerant amount at shipment	kg			R410A 6.30			R410A 6.30			R410A 6.60													
Piping connection	Gas pipe		mm (inches)			Ø19.05 (Ø3/4)			Ø19.05 (Ø3/4)			Ø22.22 (Ø7/8)											
	Liquid pipe		mm (inches)			Ø9.52 (Ø3/8)			Ø9.52 (Ø3/8)			Ø9.52 (Ø3/8)											
Ambient temperature operating range	Cooling: -10°CDB~+46°CDB			Heating: -20°CWB~+18°CWB			Cooling: -10°CDB~+46°CDB			Heating: -20°CWB~+18°CWB													
Sound pressure level (Cooling)	Normal mode		dB(A)			59.0			59.0			62.0											
	Silent mode (3)		dB(A)			52.0			52.0			55.0											
Sound power level (Cooling)	Normal mode		dB			80.0			80.0			83.0											
	Silent mode (3)		dB			80.0			80.0			83.0											
Global remarks	Rated conditions:		Cooling			Heating			These specifications are subject to change without notice.														
	Indoor air temperature		27°C DB / 19°C WB			20°C DB			High durable model (with suffix "E") has same specifications.														
	Outdoor air temperature		35°C DB			7°C DB / 6°C WB																	

### Dimensions U-8LE1H7 / U-10LE1H7

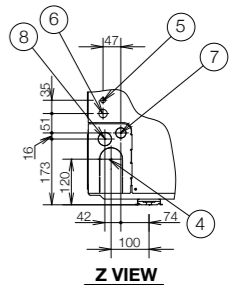
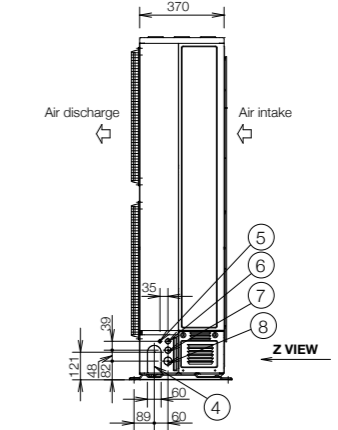
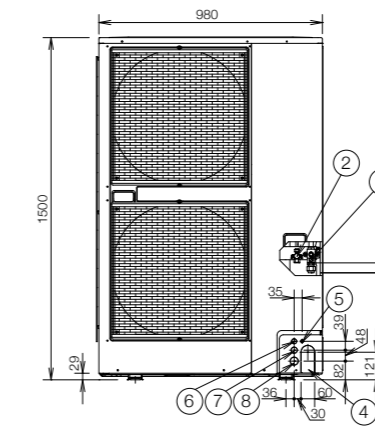


- ① Mounting hole (4-R6.5), anchor bolt : M10
- ② Refrigerant tubing (liquid tube), flared connection (Ø9.52) for 8-10 HP finally.
- ③ Refrigerant tubing (gas tube), flared connection (Ø19.05)
- ④ Refrigerant tubing port
- ⑤ Electrical wiring port (Ø13)
- ⑥ Electrical wiring port (Ø22)
- ⑦ Electrical wiring port (Ø27)
- ⑧ Electrical wiring port (Ø35)

For U-10LE1H7  
The tubing of the gas main has a diameter of ø22.22, but the connection to the service valve of the outdoor unit has a diameter of ø19.05, so a flare has to be used. Consequently, be sure to use the enclosed joint tube B and joint tube A in making connections (brazing).



A VIEW



Unit: mm



# 24-hour nanoe™ X Air Purification\*

While the general filters in air purifiers are effective against airborne bacteria and viruses, nanoe™ X also works to inhibit longer-living, adhered bacteria and viruses. As well as this, the Panasonic Comfort Cloud and WLAN smart adaptor (CZ-CAPWFC1) gives you access to your air conditioner anywhere, anytime, so you can turn nanoe™ X on even while you're out and enjoy 24-hour quality air.



\*Unit must be constantly turned on and operating in the air purification mode - nanoe™ X.  
\*\* <https://www.businessinsider.com/coronavirus-lifespan-on-surfaces-graphic-2020-3>

## 24-hour nanoe™ X air Purification, anywhere, anytime

Actively purifies your air and inhibits pollutants all day long

24-hour nanoe™ X Purification

nanoe™ X

Comfort Cloud App

Get 24 hr Quality Air for you and your loved ones by turning nanoe™ X on using Panasonic Comfort Cloud even when you're out. nanoe™ X functions in both cooling and heating modes and is maintenance-free, helping you keep your costs down with cleaner air.

- nanoe™ X functions in cooling as well as fan mode after business hours.
- Cleans indoor air even when the space is not in use.
- No need to consume excessive electricity to clean the air.



Business Hours

After Business Hours

24-hour nanoe™ X Purification

Only at 15W\*/Hour  
Low energy consumption with fan mode 15W\* per hour for a single unit.

nanoe ON, Cooling ON (Cooling Mode)

nanoe ON, Cooling OFF (Fan Mode)

nanoe™ X cleans indoor air while maintaining a comfortable temperature when people are present.

After business hours, nanoe™ X keeps cleaning indoor air in fan mode.

\*In case of using 2.2 kW-7.3 kW 4 way cassette models with fan tap L, flap position 5, standard panel. Energy consumption may vary depending on models.

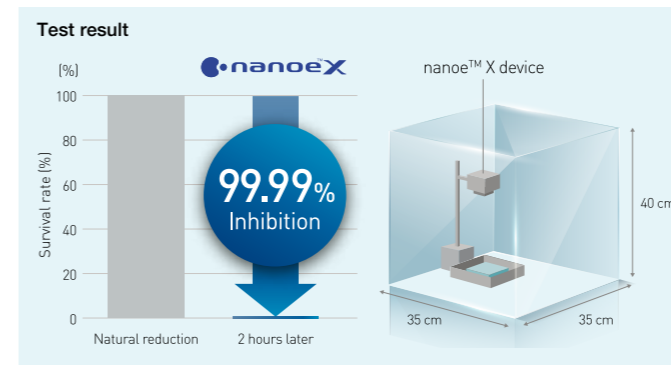
## nanoe™ X device evolution

	nanoe™	nanoe™ X Generator Mark 1	nanoe™ X Generator Mark 2	nanoe™ X Generator Mark 3	Differences in discharge systems Changed from 4-point discharge to circular discharge
Evolved Discharge System					
Higher Concentration of nanoe™ X in the Space					
Hydroxyl radicals					
		10x times	20x times	100x times	
	0.48 Trillion* hydroxyl radicals/sec	4.8 Trillion* hydroxyl radicals/sec	9.6 Trillion* hydroxyl radicals/sec	48 Trillion* hydroxyl radicals/sec	
Device status					
		Electrostatic atomisation Multi-leader discharge		Electrostatic atomisation Circular discharge	

\* Measured using the ESR (Electron Spin Resonance) method (amount of hydroxyl radicals immediately after release from the generator). (Source: Panasonic internal research)

## nanoe™ X technology inhibits novel coronavirus

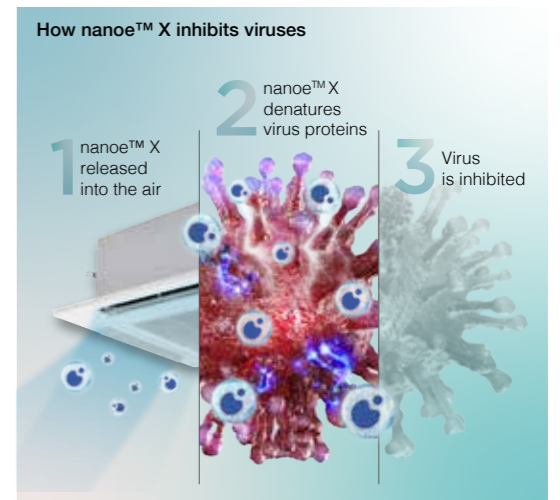
Our nanoe™ X technology has shown to suppress the activity of viruses & bacteria. Enjoy cleaner and quality air at home. Stay safer indoors with nanoe™ X.



### Overview

The objective of this test was to determine if nanoe™ X inhibit the activity of the SARS-CoV-2 virus. Gauze saturated with SARS-CoV-2 virus solution was exposed to a generator of nanoe™ X from a distance of 15 cm in a 45-liter box for 2 hours. Over 99.99%\* of the activity of the SARS-CoV-2 virus was inhibited.

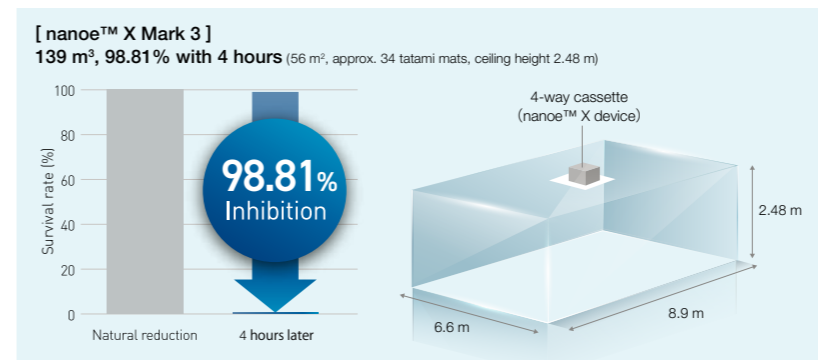
Device type: 10 x nanoe™ X (Mark 1)  
Subject: Novel coronavirus (SARS-CoV-2)  
Test Institute: TEXCELL (France) Test duration: 2 hours



Notes: 1) The virus infectious titer was measured and used to calculate the inhibition rate. 2) This verification was designed to generate basic research data on the effects of nanoe™ X on the novel coronavirus in laboratory conditions. It was not designed to evaluate product performance.

## nanoe™ X Mark 3 achieves virus inhibition in a larger space in a shorter time

Mark 3 (100 x) Device: 4-Way Cassette Large-Space Test for Adherent Virus (Bacteriophage)  
In a large space of 139 m³ (56 m²), a 98.81% inhibition rate was achieved in 4 hours.



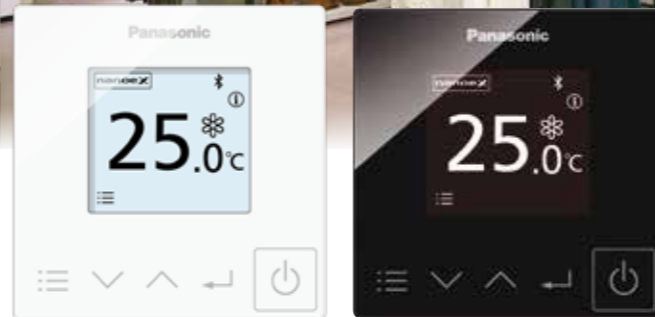
Please refer to the nanoe™ X website for the Mark 3 information.

Device type: nanoe™ X Generator Mark 3  
Subject: Adhesive virus (coliphage)  
Indoor unit: 4-way cassette  
Test Institute: SGS Inc  
Test duration: 4 hours  
Report No.: SHES210901902584



# Smart comfort with CONEX

CONEX goes beyond simple remote control to combine sophistication with simplicity, offering IoT integration that connects directly to a variety of apps for next-generation solutions.



(CZ-RTC6W/CZ-RTC6WBL)

(CZ-RTC6/CZ-RTC6BL)

**CONEX**

## Simple and sophisticated design in-and-out


User friendly interface with stylish design measuring just 86 x 86 mm, CONEX is an extremely compact remote controller which perfectly matches with all kinds of modern building.

## Easy control and access for end users and installers with just one remote

User-friendly day-to-day operation for end users and simplified set up for installers.



## A next-generation remote control solution optimised for usability

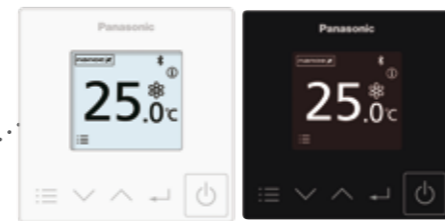


**H&C Control App**  
End user ▶ Installer

- Easy setting of timers and scheduling as well as monitoring power consumption.
- Fine tune the equipment to the environment.



Scan QR code to download free Panasonic H&C Control App



(CZ-RTC6WBL/CZ-RTC6BL)



## True-comfort for end user and installer – H&C Control App

H&C Control App makes complex initial set-up visually touch and feel easy and respond swiftly to clients' requests via Bluetooth using a smartphone or tablet.



### Advantages

#### Comfort day-to-day operations

It's now simpler than ever for end users to further customize settings to meet their needs and perform operations including basic settings.

#### Intuitive operation for easy configuration

Simplifies initial controller configuration as well as access to comprehensive settings including weekly timers and maintenance.

#### Straightforward suggestions to clients

Share a single screen with your customer and together tailor everything to meet their needs, from basic setup to weekly timers, all in real time.

#### Quicker configuration for multiple controllers

Save time and copy templates for weekly timers and settings to multiple remote controllers.





# Indoor Units

Wide choice of models depending on the indoor requirements

## Key Indoor Units Equipped DC motors



### ECONAVI sensor



Providing outstanding energy-saving performance, Panasonic's inverter VRF 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.



ECONAVI Sensor CZ-CENSC1

#### Detection of the level of activity enables optimum power saving

Activity or absence of people at their desks and the level of activity in the office are detected in real time. Cooling or heating is automatically adjusted for optimum operation required to lower power consumption.

#### Sensor is remotely located to maximize the energy saving effect

Pillars, walls, cabinets and other fittings obstruct the sensors, 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.

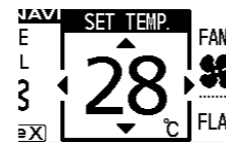
### High-spec wired remote controller



CZ-RTC5B

#### Large 3.5" full-dot LCD with white LED backlight

Characters and icons are clearly displayed for improved visibility. The display is also large enough to provide a wide range of information for easy confirmation of operation conditions.



#### Stylish, easy-to-use touch key design

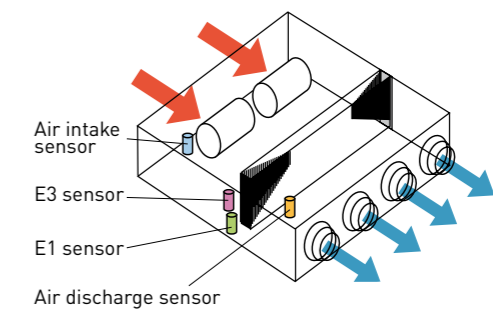
The elegant, flat design features large touch keys in a simple layout enabling easy, intuitive operation.



### All ducted series

#### Discharge air temperature control

Smart sensors control discharge air temperature for precise room temperature control. Possible to reduce cold drafts during heating operation.



### Wall mounted / K2 type



Compact design with flat surface enables seamless match with any type of room interior

#### Noise reducing external valve kit

To reduce noise level of expansion valve. (Optional accessory)



CZ-P56SVK2 (for 22 - 56 type)  
CZ-P160SVK2 (for 73\* - 106 type)

\*When the pipe diameter is (Liquid) 06.35- (Gas) 012.7, please use CZ-P56SVK2.

### Remote temperature sensor



CZ-CSRC3

- This is a remote sensor which can be used with indoor units. 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 control switch, use the remote control switch as main remote controller.

# FSV Indoor Units Range

Wide choice of models depending on the indoor requirements

Class	22	28	36	45	56	60	73	90
Capacity	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating
Type	2.2/2.5 7,500/8,500	2.8/3.2 9,600/10,900	3.6/4.2 12,300/14,300	4.5/5.0 15,400/17,100	5.6/6.3 19,100/21,500	6.0/7.1 20,500/24,200	7.3/8.0 24,900/27,300	9.0/10.0 30,700/34,100
<b>nanoeX</b> Generator Mark3 F3 type <b>ECONAVI</b> Mid Static Adaptive Ducted	<b>NEW</b> S-22MF3E5AN	<b>NEW</b> S-28MF3E5AN	<b>NEW</b> S-36MF3E5AN	<b>NEW</b> S-45MF3E5AN	<b>NEW</b> S-56MF3E5AN	<b>NEW</b> S-60MF3E5AN	<b>NEW</b> S-73MF3E5AN	<b>NEW</b> S-90MF3E5AN
M1 type <b>ECONAVI</b> Slim Low Static Ducted	S-22MM1E5A	S-28MM1E5A	S-36MM1E5A	S-45MM1E5A	S-56MM1E5A			
Z1 type <b>ECONAVI</b> Slim Low Static Ducted Twenty Series	S-22MZ1H4A	S-28MZ1H4A	S-36MZ1H4A	S-45MZ1H4A	S-56MZ1H4A	S-60MZ1H4A	S-73MZ1H4A	
E2 type High Static Ducted / Energy Saving High-Fresh Air Ducted								
E1 type High Static Ducted							S-73ME1E5	
H1 type High Fresh Air Ducted								
K2 type <b>ECONAVI</b> Wall Mounted	S-22MK2E5A	S-28MK2E5A	S-36MK2E5A	S-45MK2E5A	S-56MK2E5A		S-73MK2E5A	
<b>nanoeX</b> Generator Mark3 U2 type <b>ECONAVI</b> ** 4-Way Cassette Panel No. CZ-KPU3H Panel No. CZ-KPU3A	<b>NEW</b> S-22MU2E5BN	<b>NEW</b> S-28MU2E5BN	<b>NEW</b> S-36MU2E5BN	<b>NEW</b> S-45MU2E5BN	<b>NEW</b> S-56MU2E5BN	<b>NEW</b> S-60MU2E5BN	<b>NEW</b> S-73MU2E5BN	<b>NEW</b> S-90MU2E5BN
<b>nanoeX</b> Generator Mark3 Y3 type <b>ECONAVI</b> 4-Way Mini Cassette Panel No. CZ-KPY4	S-22MY3E	S-28MY3E	S-36MY3E	S-45MY3E	S-56MY3E			
L1 type 2-Way Cassette Panel No. CZ-02KPL2 Panel No. CZ-03KPL2 (Only for S-73ML1E5)	S-22ML1E5	S-28ML1E5	S-36ML1E5	S-45ML1E5	S-56ML1E5		S-73ML1E5	
D1 type 1-Way Cassette Panel No. CZ-KPD2		S-28MD1E5	S-36MD1E5	S-45MD1E5	S-56MD1E5		S-73MD1E5	
T2 type <b>ECONAVI</b> Ceiling			S-36MT2E5A	S-45MT2E5A	S-56MT2E5A		S-73MT2E5A	
P1 type Floor Standing	S-22MP1E5	S-28MP1E5	S-36MP1E5	S-45MP1E5	S-56MP1E5		S-71MP1E5	
R1 type Concealed Floor Standing	S-22MR1E5	S-28MR1E5	S-36MR1E5	S-45MR1E5	S-56MR1E5		S-71MR1E5	

\* High fresh air system is not allowed for 18kW model.  
\*\* Only for CZ-KPU3A

106	112	140	160	180	224	280	Wireless remote control	Functions	
Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Type with built-in sensor	Type with separately installed sensor	
10.6/11.4 36,200/38,900	11.2/12.5 38,200/42,700	14.0/16.0 47,800/54,600	16.0/18.0 54,600/61,400	18.0/20.0 61,400/68,200	22.4/25.0 76,400/85,300	28.0/31.5 95,500/107,500			
	<b>NEW</b> S-112MF3E5AN	<b>NEW</b> S-140MF3E5AN	<b>NEW</b> S-160MF3E5AN						self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
									self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
									self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
				S-180ME2E5 *	<b>High Fresh Air</b> S-224ME2E5	<b>High Fresh Air</b> S-280ME2E5			self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
S-106ME1E5		S-140ME1E5			S-224ME1E5	S-280ME1E5			self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
		<b>High Fresh Air</b> S-140MH1H5			<b>High Fresh Air</b> S-224MH1H5	<b>High Fresh Air</b> S-280MH1H5			self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
S-106MK2E5A									self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
	<b>NEW</b> S-112MU2E5BN	<b>NEW</b> S-140MU2E5BN	<b>NEW</b> S-160MU2E5BN						self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
									self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
									self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
S-106MT2E5A		S-140MT2E5A							self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor
									self-diagnosing Auto fan Auto restart Auto fan Auto restart DRY Dry mode Auto fan Auto restart DC motor

Self-diagnosing function  
 Automatic fan operation  
 **DRY** Dry mode  
 Intelligent auto flap control  
 Automatic restart function for power failure  
 Air swing  
 Built-in drain pump  
 DC motor



NEW

# F3 TYPE Mid Static Adaptive Ducted



nanoe™ X Generator Mark3



Please refer to the nanoe™ X website for the Mark 3 information.

Control all aspects of your environment with exceptional performance and quiet operation. Vertical installation flexibility offers the perfect solution when ceiling heights are restricted.



S-22MF3E5AN / S-28MF3E5AN / S-36MF3E5AN  
S-45MF3E5AN / S-56MF3E5AN



S-60MF3E5AN / S-73MF3E5AN  
S-90MF3E5AN



S-112MF3E5AN / S-140MF3E5AN / S-160MF3E5AN

Optional accessory

ECONAVI ECONAVI ready



CZ-RTC6W  
CZ-RTC6WBL  
CZ-RTC6WBLW



CZ-RTC6  
CZ-RTC6BL  
CZ-RTC6BLW



CZ-CENSC1



CZ-RTC5B



CZ-RWS3  
Remote controller



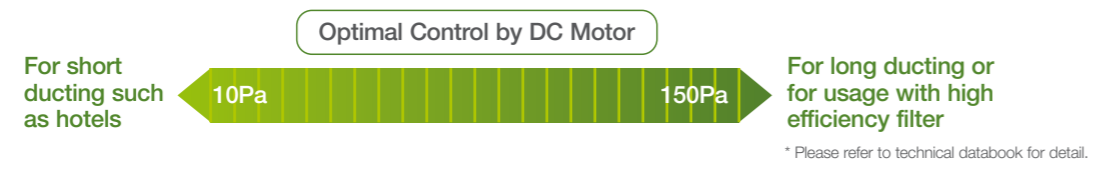
CZ-RWRC3  
Receiver

## Technical focus

- 4 installation possibilities with horizontal and vertical mounting and selectable rear or bottom air inlet
- Space saving 250mm height
- DC fan motor for variable external static pressure control
- Industry-leading horizontal/vertical design
- Powerful 150Pa static pressure in a compact unit.
- Leading-class low sound levels from 20 dB(A)
- Improved drain pan suitable for both horizontal / vertical installation
- nanoe™ X : 100x for CAC (100 times more nanoe™ particle for wide commercial space)
- Accurate temperature control to reduce cold drafts during operation

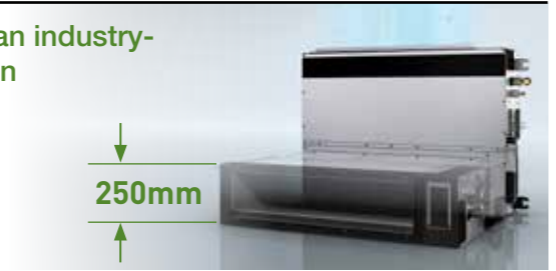
## Variable external static pressure control

Optimal airflow set-up is possible depending on ducting design and conditions.



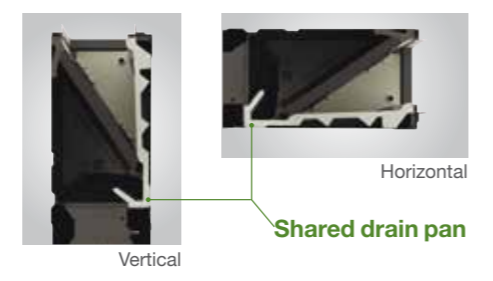
## Powerful 150Pa external static pressure in an industry-leading horizontal/vertical installation design

Delivering static pressure up to 150Pa external static pressure, the industry-leading horizontal/vertical design offers the power you need in a compact form factor.



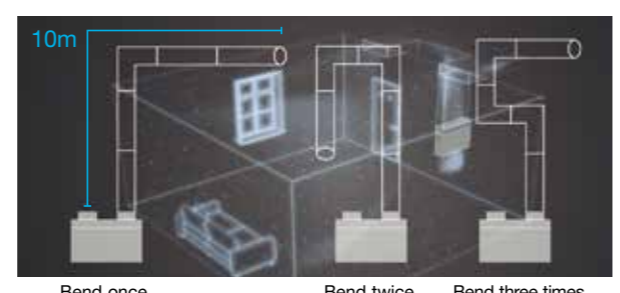
## Improved drain pan design

Drain pan is shared in both cases horizontal and vertical installation. No need to alternate anymore.

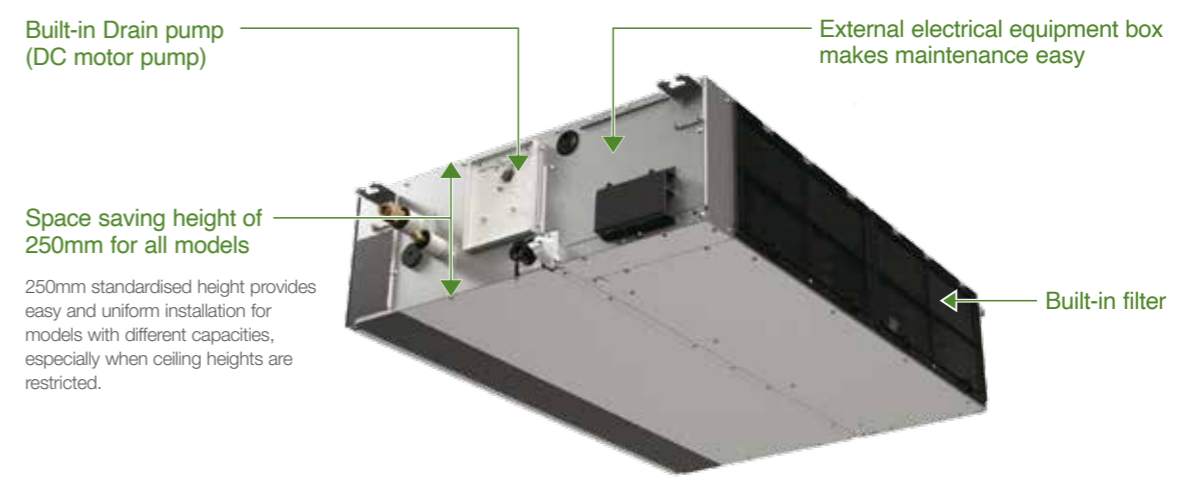


## Superior Air Quality

Combined with the strong static pressure this model ensures pristine nanoe™ X air travels unaffected even through multiple duct shapes at lengths of 10m, as well as making them ideal for use in larger spaces.

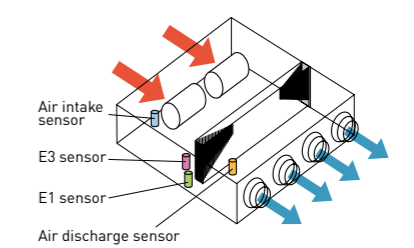


Bend once Bend twice Bend three times  
As the experiments demonstrate, even with a total ductwork length of up to 10m, effectiveness of nanoe™ X is maintained.



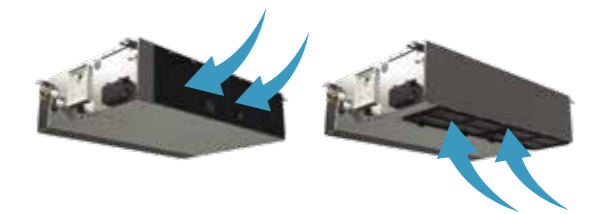
## Discharge air temperature control

- Possible to control discharge air temperature for accurate room temperature control.
  - Possible to reduce cold drafts during heating operation.
- Note: Before spec-in, please consult with an authorised Panasonic dealer.



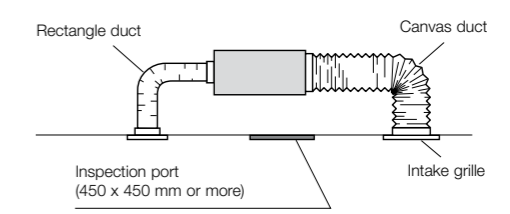
## Selectable air inlet position

A removable panel allows air inlet position to be adjusted to enable rear or bottom entry, depending on ductwork installation.



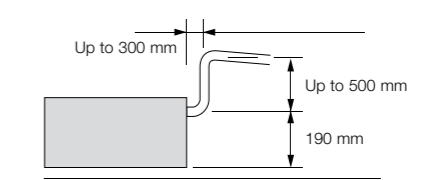
## System example

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



## More powerful drain pump

Using a high-lift built-in drain pump, drain piping can be elevated up to 690 mm from the base of the unit.



# F3 TYPE Mid Static Adaptive Ducted

Model Name		S-22MF3E5AN	S-28MF3E5AN	S-36MF3E5AN	S-45MF3E5AN	S-56MF3E5AN
Power source		220/230/240 V, 1 phase - 50/60 Hz				
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6
	BTU/h	7,500	9,600	12,300	15,400	19,100
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3
	BTU/h	8,500	10,900	14,300	17,100	21,500
Power input	Cooling kW	0.06/0.06/0.06	0.06/0.06/0.06	0.06/0.06/0.06	0.06/0.06/0.06	0.089/0.089/0.089
	Heating kW	0.06/0.06/0.06	0.06/0.06/0.06	0.06/0.06/0.06	0.06/0.06/0.06	0.089/0.089/0.089
Running amperes	Cooling A	0.46/0.45/0.44	0.46/0.45/0.44	0.46/0.45/0.44	0.46/0.45/0.44	0.65/0.63/0.61
	Heating A	0.46/0.45/0.44	0.46/0.45/0.44	0.46/0.45/0.44	0.46/0.45/0.44	0.65/0.63/0.61
Fan motor	Type	Sirocco fan				
	Cooling m³/h	768/660/480	768/660/480	840/720/480	840/720/480	960/840/600
	Air flow rate (H/M/L) L/s	213/183/133	213/183/133	233/200/133	233/200/133	267/233/167
	Heating m³/h	840/720/480	840/720/480	840/720/480	840/720/480	960/840/600
	Air flow rate (H/M/L) L/s	233/200/133	233/200/133	233/200/133	233/200/133	267/233/167
	Output kW	0.107	0.107	0.107	0.107	0.107
External static pressure	Pa	30 (10-150)				
Sound power level (H/M/L)	dB	54/51/43	54/51/43	54/51/43	54/51/43	58/55/47
Sound pressure sound (H/M/L)	dB(A)	31/28/20	31/28/20	31/28/20	31/28/20	35/32/24
Dimensions H x W x D	mm	250 x 800 x 730				
	Liquid mm (inches)	Ø6.35 (Ø1/4)				
Pipe connections	Gas mm (inches)	Ø12.7 (Ø1/2)				
	Drain piping	VP-20				
Net weight	kg	26				

GLOBAL REMARKS	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.



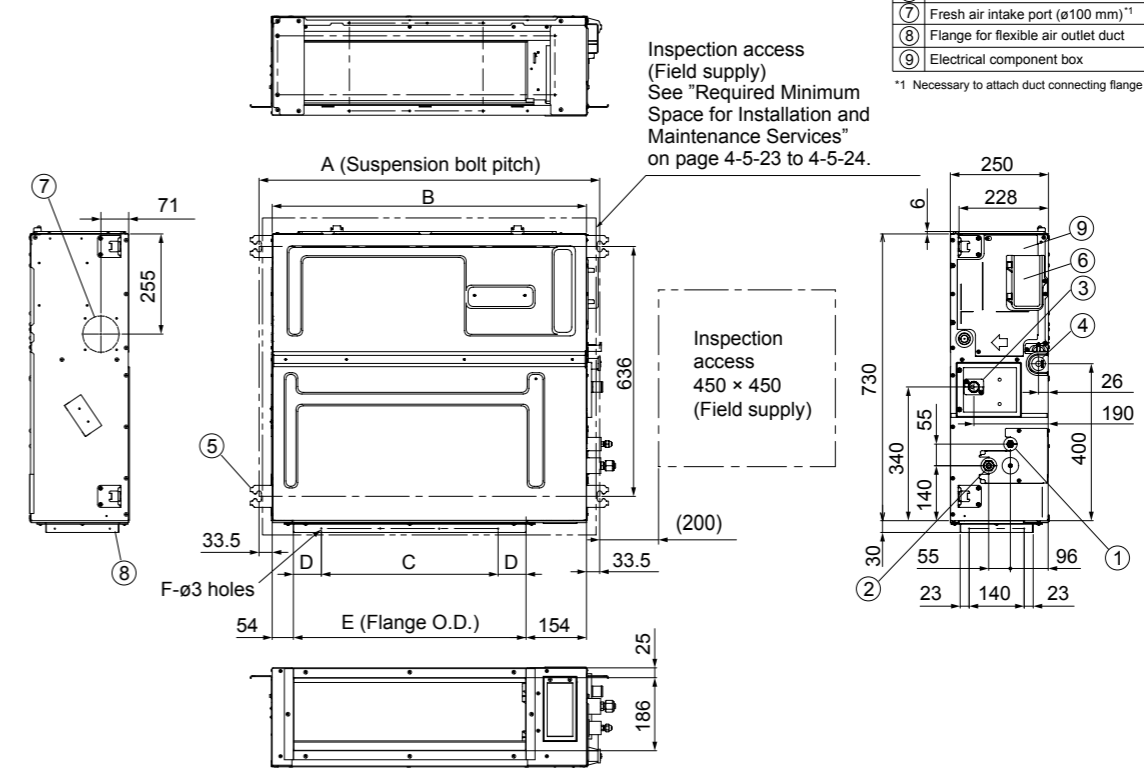
Model Name		S-60MF3E5AN	S-73MF3E5AN	S-90MF3E5AN	S-112MF3E5AN	S-140MF3E5AN	S-160MF3E5AN
Power source		220/230/240 V, 1 phase - 50/60 Hz					
Cooling capacity	kW	6.0	7.3	9.0	11.2	14.0	16.0
	BTU/h	20,500	24,900	30,700	38,200	47,800	54,600
Heating capacity	kW	7.1	8.0	10.0	12.5	16.0	18.0
	BTU/h	24,200	27,300	34,100	42,700	54,600	61,400
Power input	Cooling kW	0.079/0.079/0.079	0.079/0.079/0.079	0.136/0.136/0.136	0.265/0.265/0.265	0.265/0.265/0.265	0.330/0.330/0.330
	Heating kW	0.079/0.079/0.079	0.079/0.079/0.079	0.136/0.136/0.136	0.265/0.265/0.265	0.265/0.265/0.265	0.330/0.330/0.330
Running amperes	Cooling A	0.53/0.52/0.51	0.53/0.52/0.51	0.92/0.90/0.88	1.80/1.76/1.72	1.80/1.76/1.72	2.22/2.14/2.09
	Heating A	0.53/0.52/0.51	0.53/0.52/0.51	0.92/0.90/0.88	1.80/1.76/1.72	1.80/1.76/1.72	2.22/2.14/2.09
Fan motor	Type	Sirocco fan					
	Cooling m³/h	1,260/1,080/900	1,260/1,080/900	1,500/1,380/960	2,220/1,920/1,560	2,220/1,920/1,560	2,400/2,040/1,680
	Air flow rate (H/M/L) L/s	350/300/250	350/300/250	417/383/267	617/533/433	617/533/433	667/567/467
	Heating m³/h	1,260/1,080/900	1,260/1,080/900	1,500/1,380/960	2,220/1,920/1,560	2,220/1,920/1,560	2,400/2,040/1,680
	Air flow rate (H/M/L) L/s	350/300/250	350/300/250	417/383/267	617/533/433	617/533/433	667/567/467
	Output kW	0.165	0.165	0.165	0.259	0.259	0.259
External static pressure	Pa	50 (10-150)					
Sound power level (H/M/L)	dB	54/51/46	54/51/46	58/56/48	64/59/55	64/59/55	66/60/56
Sound pressure sound (H/M/L)	dB(A)	31/28/23	31/28/23	35/33/25	41/36/32	41/36/32	43/37/33
Dimensions H x W x D	mm	250 x 1,000 x 730					
	Liquid mm (inches)	Ø9.52 (Ø3/8)					
Pipe connections	Gas mm (inches)	Ø15.88 (Ø5/8)					
	Drain piping	VP-20					
Net weight	kg	31					

## F3 TYPE MID STATIC DUCTED Dimensions

Type	A	B	C	D	E	F	Air intake port size
	mm	mm	mm	mm	mm	Q'ty	mm
22/28/36/45/56	867	800	450 (Pitch 150 x 3)	71	592	12	204 x 683
60/73/90	1,067	1,000	750 (Pitch 150 x 5)	21	792	16	204 x 883
112/140/160	1,467	1,400	1,050 (Pitch 150 x 7)	71	1,192	20	204 x 1,283

- ① Refrigerant tubing joint (liquid tube)  
S-22/28/36/45/56MF3E5AN : Φ6.35 (flared)  
S-60/73/90/112/140/160MF3E5AN : Φ9.52 (flared)
- ② Refrigerant tubing joint (gas tube)  
S-22/28/36/45/56MF3E5AN : Φ12.7 (flared)  
S-60/73/90/112/140/160MF3E5AN : Φ15.88 (flared)
- ③ Upper drain port VP20 (ø26 mm)  
200 mm flexible hose supplied
- ④ Bottom drain port VP20 (ø26 mm)
- ⑤ Suspension lug (4 - 12 x 30 mm)
- ⑥ Power supply outlet
- ⑦ Fresh air intake port (ø100 mm)<sup>\*1</sup>
- ⑧ Flange for flexible air outlet duct
- ⑨ Electrical component box

\*1 Necessary to attach duct connecting flange (field supply).



unit: mm



# M1 TYPE Slim Low Static Ducted



Concealed duct

Optional accessory



S-22MM1E5A  
S-28MM1E5A  
S-36MM1E5A  
S-45MM1E5A  
S-56MM1E5A



# Z1 TYPE Slim Low Static Ducted Twenty Series

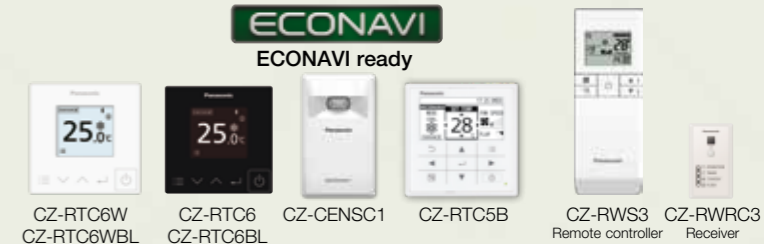


Concealed duct

Optional accessory



S-22MZ1H4A / S-28MZ1H4A / S-36MZ1H4A  
S-45MZ1H4A / S-56MZ1H4A / S-60MZ1H4A



## 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
- 40 Pa static pressure enables ductwork to be fitted.
- Includes drain pump
- Includes built in filter

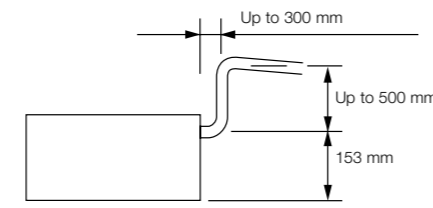
### Ultra-slim profile for all models

200 mm height for all models allows installation in very narrow ceilings.



### Drain pump with increased power

Using the built-in high-lift drain pump, the drain piping rise height can be increased to 653 mm from the lower surface of the body.



Model Name		S-22MM1E5A	S-28MM1E5A	S-36MM1E5A	S-45MM1E5A	S-56MM1E5A	
Power source		220/230/240 V, 1 phase - 50 / 60 Hz					
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	
	BTU/h	7,500	9,600	12,300	15,400	19,100	
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	
	BTU/h	8,500	10,900	14,300	17,100	21,500	
Power input	Cooling kW	0.036/0.036/0.036	0.040/0.040/0.040	0.042/0.042/0.042	0.049/0.049/0.049	0.064/0.064/0.064	
	Heating kW	0.026/0.026/0.026	0.030/0.030/0.030	0.032/0.032/0.032	0.039/0.039/0.039	0.054/0.054/0.054	
Running current	Cooling A	0.26/0.26/0.26	0.30/0.30/0.30	0.31/0.31/0.31	0.37/0.37/0.37	0.48/0.48/0.48	
	Heating A	0.23/0.23/0.23	0.27/0.27/0.27	0.28/0.28/0.28	0.34/0.34/0.34	0.45/0.45/0.45	
Fan	Type	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	
	Air flow rate (H/M/L)	m³/h	480/420/360	510/450/390	540/480/420	630/570/480	750/690/600
		L/s	133/117/100	142/125/108	150/133/117	175/158/133	208/192/167
	Motor output	kW	0.06	0.06	0.06	0.06	0.06
	External static pressure	Pa	10 (30)*	15 (30)*	15 (40)*	15 (40)*	15 (40)*
Sound power level (H/M/L)	dB	43/42/40	45/44/42	47/45/43	49/47/45	50/48/46	
Sound pressure level (H/M/L)	dB(A)	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)*	
Dimensions	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	
		mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)
Pipe connections	Liquid	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	
	Gas	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	
Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20	
Net weight	kg	19	19	19	19	19	

Specifications are subject to change without notice. \* With booster cable.

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

## 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
- 29 Pa static pressure enables ductwork to be fitted.
- Drain pump (optional)

### Ultra-slim profile for all models

200 mm height for all models allows installation in very narrow ceilings.



### Drain pump with increased power (optional)

Using the optional high-lift drainage pump, the drain piping rise height can be increased up to 1,000 mm from the drain pipe port.



Model Name		S-22MZ1H4A	S-28MZ1H4A	S-36MZ1H4A	S-45MZ1H4A	S-56MZ1H4A	S-60MZ1H4A	S-73MZ1H4A	
Power source		220/230/240 V, 1 phase - 50 / 60 Hz							
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	6.0	7.3	
	BTU/h	7,500	9,500	12,200	15,300	19,100	20,500	24,900	
Heating capacity	kW	2.5	3.2	4.2	5.1	6.4	7.1	8.0	
	BTU/h	8,500	10,900	14,300	17,400	21,800	24,200	27,300	
Power input	Cooling kW	0.075/0.075/0.075	0.080/0.080/0.080	0.085/0.085/0.085	0.095/0.095/0.095	0.100/0.100/0.100	0.100/0.100/0.100	0.125/0.125/0.125	
	Heating kW	0.075/0.075/0.075	0.080/0.080/0.080	0.085/0.085/0.085	0.095/0.095/0.095	0.100/0.100/0.100	0.100/0.100/0.100	0.125/0.125/0.125	
Running current	Cooling A	0.50/0.47/0.45	0.55/0.52/0.50	0.60/0.57/0.55	0.70/0.68/0.65	0.75/0.72/0.70	0.75/0.72/0.70	0.80/0.78/0.75	
	Heating A	0.50/0.47/0.45	0.55/0.52/0.50	0.60/0.57/0.55	0.70/0.68/0.65	0.75/0.72/0.70	0.75/0.72/0.70	0.80/0.78/0.75	
Fan	Type	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	
	Air flow rate (H/M/L)	m³/h	480/420/360	600/540/420	600/540/420	690/630/510	720/660/540	870/750/630	1,080/840/660
		L/s	133/117/100	167/150/117	167/150/117	192/175/142	200/183/150	242/208/175	300/233/183
	Motor output	W	60	60	60	60	60	60	60
	External static pressure	Pa	10 (10-30)	10 (10-30)	10 (10-30)	10 (10-30)	10 (10-30)	10 (10-30)	10 (10-30)
Sound power level (H/M/L)	dB	50/49/47	52/51/49	54/52/50	56/54/52	57/55/53	60/57/55	62/60/58	
Sound pressure level (H/M/L)	dB(A)	28/27/25	30/29/27	32/30/28	34/32/30	35/33/31	38/35/33	40/38/36	
Dimensions	H x W x D	mm	200x830x500	200x830x500	200x830x500	200x830x500	200x830x500	200x1,050x550	
	Liquid	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø9.52 (Ø3/8)	
Pipe connections	Gas	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	
	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	
Net weight	kg	17	17	18	18	18	18	24	

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.

# E2 TYPE High Static Ducted



Concealed duct / Air conditioning mode

Optional accessory



S-180ME2E5  
S-224ME2E5  
S-280ME2E5



# E2 TYPE Energy Saving High Fresh Air Ducted

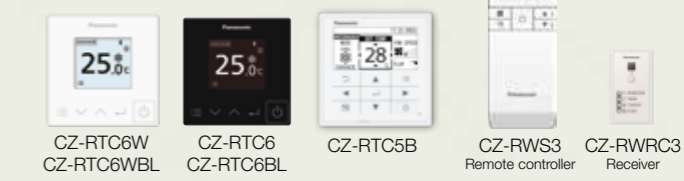


Concealed duct high-static pressure

Optional accessory



S-224ME2E5  
S-280ME2E5



## Technical focus

- Design flexibility thanks to high static pressure and large air volume
- DC motor equipped
- Power input 45% less (compared to E1 type)
- Discharge air temperature control to reduce cold drafts during heating operation
- Configurable air temperature control
- Available Fresh Air Intake mode (See page 29)

### 3-step static pressure set up

You can select between the three Static Pressure modes of 270 Pa/140 Pa/60(72\*) Pa for extra installation flexibility.



### Max. 270Pa static pressure setting

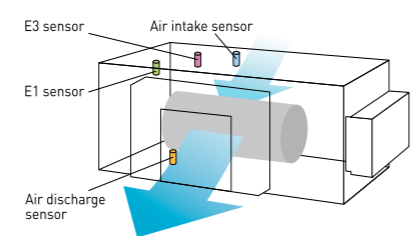
A maximum static pressure setting of a high 270Pa enables the use of long ducts for installation in a wide range of spaces. Ideal for large-scale offices, restaurants and other facilities.

### Sensible cooling 5-10% improved

New heat exchanger with  $\phi$  7mm pipe that increases the heat transfer surface to improve sensible cooling (5-10% improvement)

### Discharge air temperature control

- Equipped with 4 sensors (Intake/ Discharge)
- Able to control discharge air temperature for accurate room temperature control.
- Possible to reduce cold drafts during heating operation.



Model Name		S-180ME2E5	S-224ME2E5	S-280ME2E5
Power source		220/230/240V, 1 Phase-50 Hz, 220/230V, 1 Phase-60Hz		
Cooling capacity	kW	18.0	22.4	28.0
	BTU/h	61,400	76,400	95,500
Heating capacity	kW	20.0	25.0	31.5
	BTU/h	68,200	85,300	107,500
Power input	Cooling kW	0.400	0.440	0.715
	Heating kW	0.400	0.440	0.715
Running current	Cooling A	2.40 / 2.30 / 2.20	2.55 / 2.45 / 2.35	3.95 / 3.85 / 3.70
	Heating A	2.40 / 2.30 / 2.20	2.55 / 2.45 / 2.35	3.95 / 3.85 / 3.70
Fan	Type	Sirocco fan		
	Air flow rate (H/M/L)	2,940 / 2,640 / 2,340	3,360 / 3,060 / 2,640	4,320 / 3,780 / 3,180
	L/s	817 / 733 / 650	933 / 850 / 733	1,200 / 1,050 / 883
	Motor output	0.560 x 2		
External static pressure	Pa	140 (60/270)	140 (60/270)	140 (72/270)
Sound power level (H/M/L)	dB	76 / 74 / 72	77 / 75 / 73	81 / 79 / 75
Sound pressure level (H/M/L)	dB(A)	44 / 42 / 40	45 / 43 / 41	49 / 47 / 43
Dimensions	H x W x D	479 x 1,453 x 1,205		
	mm	479 x 1,453 x 1,205		
Pipe connections	Liquid	$\phi$ 9.52 (3/8)		
	Gas	$\phi$ 19.05 (3/4)		
Drain piping		VP-25		
Net weight	kg	102	102	106

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

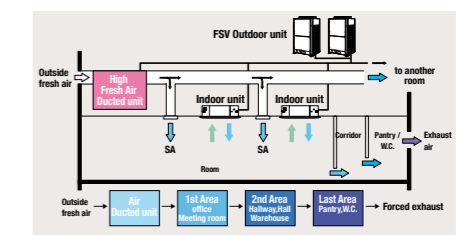
## Technical focus

- 100% fresh air intake for ventilation purpose
- Design flexibility with high static pressure and large air volume
- DC motor equipped
- Power input 45% less (compared to H1 type)
- Discharge air temperature control to reduce cold drafts during heating operation
- Configurable air temperature control

### High fresh system

High Fresh System enables delivery of fresh outside air at almost the same temperature and humidity as indoor air without putting a burden on air conditioning.

\* Capable of treating outdoor air only. Indoor air conditioner units are required to adjust indoor air temperature.

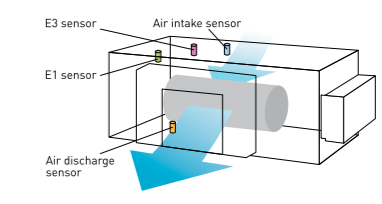


### Mix operation unit with standard indoor units

Possible to combine High Fresh Air ducted indoor unit and standard air ducted indoor units. When other indoor units are connected in same circuit, keep following capacity ratio. E2 type/Outdoor unit < 30%, and Total of indoors(incl. E2)/outdoor < 100%

### Discharge air temperature control

- Equipped with 4 sensors (Intake/ Discharge)
- Able to control discharge air temperature for accurate room temperature control.
- Possible to reduce cold drafts during heating operation.



Model Name		S-224ME2E5	S-280ME2E5
Power source		220/230/240V, 1 Phase-50 Hz, 220/230V, 1 Phase-60Hz	
Cooling capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Heating capacity	kW	21.2	26.5
	BTU/h	72,300	90,400
Power input	Cooling kW	0.290	0.350
	Heating kW	0.290	0.350
Running current	Cooling A	1.90/1.85/1.80	2.30/2.20/2.10
	Heating A	1.90/1.85/1.80	2.30/2.20/2.10
Fan	Type	Sirocco fan	
	Air flow rate	1,700	2,100
	L/s	472	583
	Motor output	0.560 x 2	
External static pressure	Pa	200	200
Sound power level	dB	75	76
Sound pressure level	dB(A)	43	44
Dimensions	H x W x D	479 x 1,453 x 1,205	
	mm	479 x 1,453 x 1,205	
Pipe connections	Liquid	$\phi$ 9.52 (3/8)	
	Gas	$\phi$ 19.05 (3/4)	
Drain piping		VP-25	
Net weight	kg	102	106

Global remarks	Rated conditions:	
	Cooling	Heating
Outdoor air temperature	33°C DB / 28°C WB	0°C DB / -2.9°C WB



# E1 TYPE High Static Ducted

Concealed duct high-static pressure

Optional accessory



S-73ME1E5 / S-106ME1E5 / S-140ME1E5  
S-224ME1E5 / S-280ME1E5



CZ-RTC6W CZ-RTC6WBL CZ-RTC6 CZ-RTC6BL CZ-RTC5B CZ-RWS3 Remote controller CZ-RWRC3 Receiver

# H1 TYPE High-Fresh Air Ducted

Concealed duct

Optional accessory



S-140MH1H5  
S-224MH1H5 / S-280MH1H5



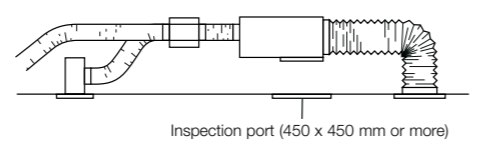
CZ-RTC6W CZ-RTC6WBL CZ-RTC6 CZ-RTC6BL CZ-RTC5B CZ-RWS3 Remote controller CZ-RWRC3 Receiver

## Technical focus

- Complete flexibility for ductwork design
- Can be located into a weatherproof housing for external installation
- Discharge air temperature control to reduce cold drafts during heating operation
- Configurable air temperature control

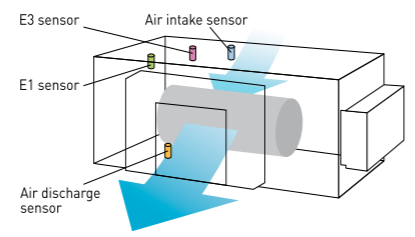
## System example

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



## Discharge air temperature control

- Equipped with 4 sensors (Intake/ Discharge)
- Able to control discharge air temperature for accurate room temperature control.
- Possible to reduce cold drafts during heating operation.



Model Name		S-73ME1E5	S-106ME1E5	S-140ME1E5	S-224ME1E5	S-280ME1E5	
Power source		220/230/240 V, 1 phase - 50 / 60 Hz				220/230/240 V, 1 phase - 50 Hz	
Cooling capacity	kW	7.3	10.6	14.0	22.4	28.0	
	BTU/h	25,000	36,000	47,800	76,400	95,500	
Heating capacity	kW	8.0	11.4	16.0	25.0	31.5	
	BTU/h	27,000	39,000	54,600	85,300	107,500	
Power input	Cooling kW	0.480/0.505/0.530	0.520/0.545/0.570	0.600/0.660/0.710	0.870/0.900/0.930	1.270/1.330/1.390	
	Heating kW	0.480/0.505/0.530	0.520/0.545/0.570	0.600/0.660/0.710	0.870/0.900/0.930	1.270/1.330/1.390	
Running current	Cooling A	2.29/2.30/2.31	2.46/2.46/2.47	2.80/2.90/3.00	4.05/4.06/4.07	6.04/6.06/6.07	
	Heating A	2.29/2.30/2.31	2.46/2.46/2.47	2.80/2.90/3.00	4.05/4.06/4.07	6.04/6.06/6.07	
Fan	Type	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	
	Air flow rate (H/M/L)	m³/h	1,380/1,320/1,260	1,800/1,680/1,500	2,160/2,100/1,980	3,360/3,190/2,980	4,320/4,200/3,960
		L/s	383/367/350	500/467/417	600/583/550	933/886/828	1,200/1,167/1,100
	Motor output	kW	0.2	0.2	0.35	0.2	0.4
	External static pressure	Pa	186	176	167	176	216 (235)*
Sound power level (H/M/L)	dB	55/54/53	56/55/53	58/57/55	59/58/57	62/61/60	
Sound pressure level (H/M/L)	dB(A)	44/43/42	45/44/42	47/46/44	48/47/46	51/50/49 (52/51/50)*	
Dimensions	H x W x D	mm	420 x 1,065 x 620	420 x 1,065 x 620	450 x 1,065 x 620	479 x 1,428 x 1,230	
	Liquid	mm (inches)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)
Pipe connections	Gas	mm (inches)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø19.05 (Ø3/4)	Ø22.22 (Ø7/8)
	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25
Net weight	kg	47	50	54	110	120	

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB    20°C DB
Outdoor air temperature	35°C DB / 24°C WB    7°C DB / 6°C WB	

Specifications are subject to be changed without notice.  
\* Via booster cable.

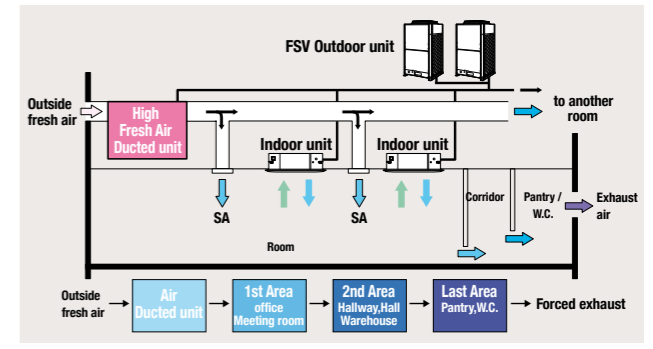
## Technical focus

- 100% fresh Air intake for ventilation purpose
- Design flexibility thanks to high static pressure and large air volume
- Discharge air temperature control to reduce cold drafts during heating operation
- Configurable air temperature control

## High fresh system

High Fresh system enables delivery of fresh outside air at almost the same temperature and humidity as indoor air without putting a burden on air conditioning.

\* Capable of treating outdoor air only. Indoor air conditioner units are required to adjust indoor air temperature.



## Mix operation unit with standard indoor units

Possible to combine High Fresh Air ducted indoor unit and standard air ducted indoor units.

When other indoor units are connected in same circuit, keep following capacity ratio.

H1 type/Outdoor unit < 30%, and Total of indoors(incl. H1)/outdoor < 100%

Model Name		S-140MH1H5	S-224MH1H5	S-280MH1H5	
Power source		220/230/240 V, 1 phase - 50Hz			
Cooling capacity	kW	14.0	22.4	28.0	
	BTU/h	47,800	76,400	95,500	
Heating capacity	kW	13.2	21.2	26.5	
	BTU/h	45,000	72,300	90,400	
Power input	Cooling kW	0.430/0.430/0.430	0.670/0.670/0.670	0.730/0.730/0.730	
	Heating kW	0.430/0.430/0.430	0.670/0.670/0.670	0.730/0.730/0.730	
Running current	Cooling A	2.0/1.9/1.9	3.2/3.1/3.0	3.6/3.4/3.3	
	Heating A	2.0/1.9/1.9	3.2/3.1/3.0	3.6/3.4/3.3	
Fan	Type	Sirocco fan	Sirocco fan	Sirocco fan	
	Air flow rate	m³/h	1,560	1,800	2,100
		L/s	433	500	583
	Motor output	kW	0.3	0.38	0.38
Sound power level (H/M/L)	dB	75/76/76	78/79/79	79/80/80	
Sound pressure level (H/M/L)	dB(A)	43/44/44	46/47/47	47/48/48	
Dimensions	H x W x D	mm	420 x 1,065 x 620	479 x 1,428 x 1,230	
	Liquid	mm (inches)	Ø9.52 (Ø3/8)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)
Pipe connections	Gas	mm (inches)	Ø15.88 (Ø5/8)	Ø25.4 (Ø1)	Ø25.4 (Ø1)
	Drain piping		VP-25	VP-25	VP-25
Net weight	kg	50	110	110	

Global remarks	Rated conditions:	
	Cooling	Heating
	Outdoor air temperature	33°C DB / 28°C WB    0°C DB / -2.9°C WB

Specifications are subject to change without notice.

# K2 TYPE Wall Mounted



Optional accessory



S-22MK2E5A / S-28MK2E5A / S-36MK2E5A  
S-45MK2E5A / S-56MK2E5A / S-73MK2E5A / S-106MK2E5A



**ECONAVI**  
ECONAVI ready

CZ-RTC6W / CZ-RTC6WBL  
CZ-RTC6 / CZ-RTC6BL  
CZ-CENSC1  
CZ-RTC5B  
CZ-RWS3  
\*Remote controller

\*Receiver is included in the wall mounted indoor unit.

## Technical focus

- Closed discharge port when not in use
- Lighter and smaller units make installation easy
- Quiet operation
- Smooth and durable design
- Piping outlet in six directions
- Washable front panel
- Air distribution is automatically altered depending on the operational mode of the unit

## Noise reducing external valve kit

To reduce noise level of expansion valve.  
(Optional accessory)



CZ-P56SVK2 (for 22 - 56 type)  
CZ-P160SVK2 (for 73\* - 106 type)

\*When the pipe diameter is (Liquid) Ø6.35- (Gas) Ø12.7, please use CZ-P56SVK2.

## Closed discharge port

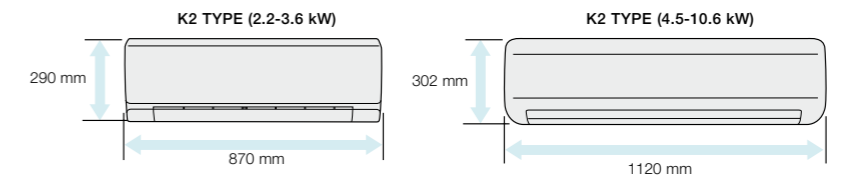
When the unit is turned off, the flap closes completely to prevent entry of dust into the unit and to keep the equipment clean.

Model Name		S-22MK2E5A	S-28MK2E5A	S-36MK2E5A	S-45MK2E5A	
Power source		220/230/240 V, 1 phase - 50 / 60 Hz				
Cooling capacity	kW	2.2	2.8	3.6	4.5	
	BTU/h	7,500	9,600	12,300	15,400	
Heating capacity	kW	2.50	3.20	4.20	5.0	
	BTU/h	8,500	10,900	14,300	17,100	
Power input	Cooling kW	0.025/0.025/0.025	0.025/0.025/0.025	0.030/0.030/0.030	0.030/0.030/0.030	
	Heating kW	0.025/0.025/0.025	0.025/0.025/0.025	0.030/0.030/0.030	0.030/0.030/0.030	
Running current	Cooling A	0.21	0.23	0.25	0.33/0.32/0.31	
	Heating A	0.21	0.23	0.25	0.33/0.32/0.31	
Fan	Type	Cross-flow fan				
	Air flow rate (H/M/L)	m³/h	540/450/390	570/498/390	654/540/390	870/750/600
		L/s	150/125/108	158/138/108	182/150/108	242/208/167
	Motor output	kW	0.03	0.03	0.03	0.054
Sound power level (H/M/L)	dB	51/48/44	52/49/44	55/51/44	53/50/48	
Sound pressure level (H/M/L)	dB(A)	36/33/29	37/34/29	40/36/29	38/35/33	
Dimensions	H x W x D	mm 290 x 870 x 214				
	Liquid	mm (inches)	Ø6.35 (Ø1/4)			
	Gas	mm (inches)	Ø12.7 (Ø1/2)			
Pipe connections	Gas	mm (inches)	Ø12.7 (Ø1/2)			
	Drain piping	mm	Ø18			
Net weight	kg	9	9	9	13	

Global remarkszz	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.

## Compact indoor units make the installation easy



## Quiet operation

Low operating noise level makes these units ideal for hotels and hospital applications.

## Smooth and durable design

The smooth cover means these units match most modern interiors. Their compact size enables them to blend in, even in small spaces.

## Piping outlet in six directions

Piping outlet is possible in the six directions of right, right rear, right bottom, left, left rear, left bottom, making installation easier.

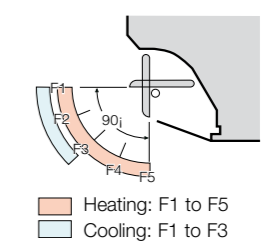
## Washable front panel

The indoor unit's front panel can be easily removed and washed for trouble-free maintenance.



## Air distribution is automatically adjusted depending on the operational mode of the unit

Air outlet angle is automatically adjusted for cooling and heating operation.



S-56MK2E5A	S-73MK2E5A	S-106MK2E5A
220/230/240 V, 1 phase - 50 / 60 Hz		
5.6	7.3	10.6
19,100	24,900	36,200
6.3	8.0	11.4
21,500	27,300	38,900
0.035/0.035/0.035	0.055/0.055/0.055	0.080/0.080/0.080
0.035/0.035/0.035	0.055/0.055/0.055	0.080/0.080/0.080
0.36/0.35/0.34	0.52/0.51/0.50	0.72/0.70/0.68
0.36/0.35/0.34	0.52/0.51/0.50	0.72/0.70/0.68
Cross-flow fan	Cross-flow fan	Cross-flow fan
960/840/720	1,170/1,020/840	1,290/1,110/900
267/233/200	325/283/233	358/308/250
0.054	0.054	0.054
55/52/50	62/59/55	64/61/57
40/37/35	47/44/40	49/46/42
302 x 1,120 x 236	302 x 1,120 x 236	302 x 1,120 x 236
Ø6.35 (Ø1/4)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)
Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)
Ø18	Ø18	Ø18
13	14	14



**NEW**  
**U2 TYPE 4-Way Cassette**  
**Semi concealed cassette**

Provides a neat fit in the ceiling to match modern décor, and uniform cooling throughout the room, and easy installation.



- 1 [1] Air intake flange (ø100) (field supply)
  - 2 [2] Air intake box CZ-ATU2\*(ø100)
  - 3 [3] Air intake plenum CZ-FDU3
- \* When using Air intake box (CZ-ATU2), Air intake plenum (CZ-FDU3) is required.

**DC motor**

NEW PANEL DESIGN  
Flat design, well-matched with interior, building.

Normal Panel : CZ-KPU3H  
ECONAVI Panel : CZ-KPU3A

**nanoe™ X Generator Mark3**



Please refer to the nanoe™ X website for the Mark 3 information.



Optional accessory

**ECONAVI**  
ECONAVI ready

CZ-RTC6W CZ-RTC6WBL CZ-RTC6 CZ-RTC6BL CZ-RTC5B CZ-RWS3 Remote controller CZ-RWRU3 Receiver

- Self-diagnosing Function
- Automatic Fan Operation
- Dry mode
- Intelligent Auto Swing
- Automatic Restart Function
- Auto Swing (Auto Flap Control)
- Built-in Drain Pump

**Technical focus**

- New high performance turbo fan, new path system for heat exchanger
- Lower noise in slow fan operation
- Industry top light weight, easy piping
- Easy installation structure of the panel
- Econavi : Floor temperature and human sensor added. Activity amount detection and new circulator
- nanoe™ X : 100x for CAC (100 times more nanoe™ particle for wide commercial space). Inside cleaning by 100x nanoe™ + dry control

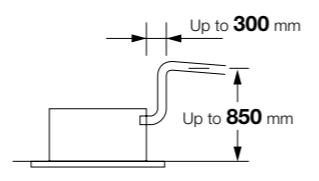
**Flat Horizontal Design**

The horizontal design of 4-way cassette achieves an elegant designed panel. Its slim design allow to protrude 33.5mm from the ceiling.



**Drain pump of up to 850 mm from the ceiling surface**

Built in drain pump allows flexible install and design options with up to 850mm lift. Long horizontal piping is also possible.



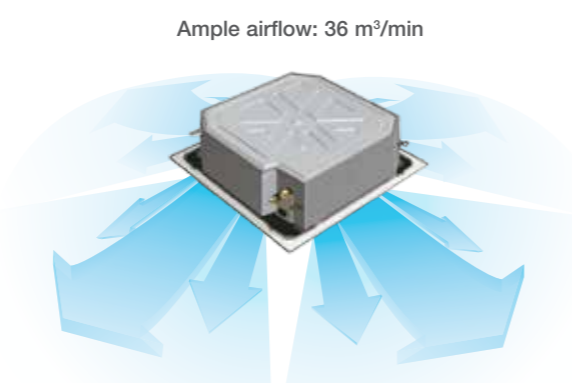
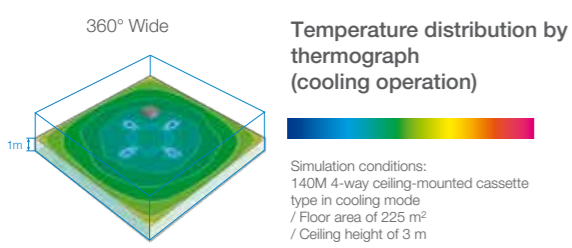
**Easy to clean suction grille**

Suction grille is able to make 90-degree turns.



**360° Wide & Comfortable Airflow**

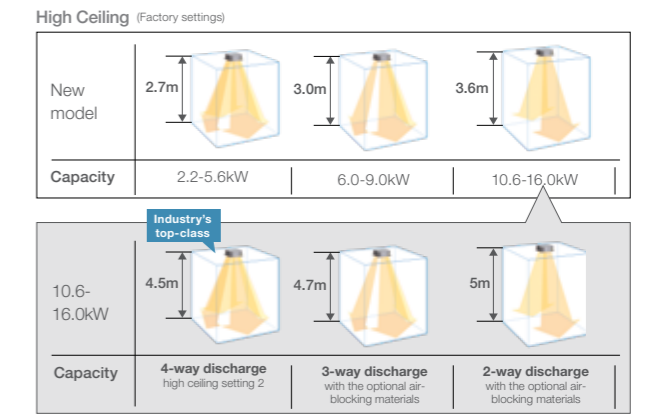
Comfort air flow control and proper energy use. Flexible Air Flow direction control by individual flap control:  
-4 Flaps can be controlled individually (by standard wired remote controller\*)  
-Versatile air flow control to cover a wide variety of demands.



\*Pre-setting is required for this function at System Test-run procedure

**High-ceiling installation (Up to 5 m for 10.6 kW and higher capacity models)**

The units can be installed in rooms with high ceilings, where they provide ample floor-level heating in the winter. (See ceiling height guidelines below.)



**Ceiling height guidelines**

Indoor unit	*1 settings 4-way discharge			3-way discharge (optional air-blocking materials)	2-way discharge (optional air-blocking materials) *2
	Factory setting 1	High ceiling setting 1	High ceiling setting 2		
2.2-5.6kW	2.7	3.2	3.5	3.8	4.2
6.0-9.0kW	3.0	3.3	3.6	3.8	4.2
10.6-16.0kW	3.6	4.3	5.0	4.7	5.0

\*1 When using the unit in a configuration other than the factory settings, it is necessary to make settings on site to increase airflow.  
\*2 Use air-blocking materials (CZ-CFU3) to completely block two discharge outlets for 2-way airflow.

**Econavi panel is added into the line up**

Continue Conventional function (Energy saving & comfort) and following are newly added.  
• Energy saving function: comfortable energy saving based on temperature and humidity

- New circulate function that improves comfort
- Movement detection is improved improving comfort

**Econavi energy saving function**

Newly put humidity sensor on air suction part, and achieve more comfort and energy saving operation.  
• Energy saving operation in case of low humidity during cooling operation

- Energy saving operation in case of high humidity during heating operation
- Energy saving operation based on activity amount and comfort and energy saving based on temperature and humidity.

**Panels & Panel parts**

Normal panel: CZ-KPU3H  
Econavi panel: CZ-KPU3A



**nanoe™ X Generator Mark 3**

nanoe™ X contains plenty of OH radicals that have outstanding effects on various air pollutants, including bacteria and viruses, mould, allergens, pollen, hazardous substances, as well as deodorise odours. It also keeps moisture in your skin and hair.



# U2<sub>TYPE</sub> 4-WAY Cassette

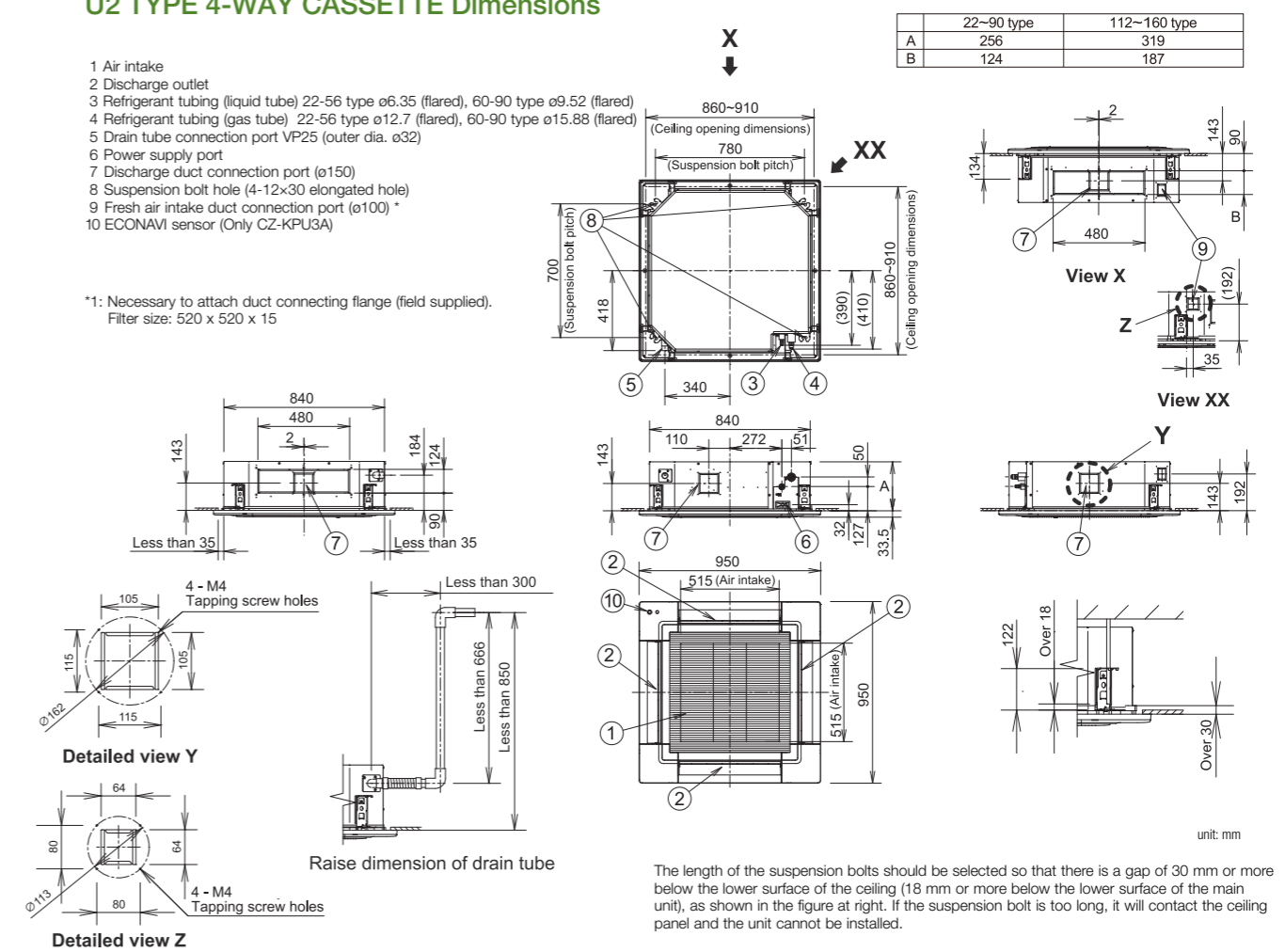
Model Name	S-22MU2E5BN	S-28MU2E5BN	S-36MU2E5BN	S-45MU2E5BN	S-56MU2E5BN		
Power source	220/230/240 V, 1 phase - 50Hz/60Hz						
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	
	BTU/h	7,500	9,600	12,300	15,400	19,100	
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	
	BTU/h	8,500	10,900	14,300	17,100	21,500	
Power input	Cooling kW	0.020/0.020/0.020	0.020/0.020/0.020	0.020/0.020/0.020	0.020/0.020/0.020	0.025/0.025/0.025	
	Heating kW	0.020/0.020/0.020	0.020/0.020/0.020	0.020/0.020/0.020	0.020/0.020/0.020	0.025/0.025/0.025	
Running current	Cooling A	0.21/0.21/0.20	0.21/0.21/0.20	0.21/0.21/0.20	0.21/0.21/0.20	0.24/0.23/0.22	
	Heating A	0.20/0.20/0.19	0.20/0.20/0.19	0.20/0.20/0.19	0.20/0.20/0.19	0.23/0.22/0.21	
Fan	Type	Turbo fan					
	Air flow rate (H/M/L)	768/726/690					
	L/s	213/202/192					
	Motor output	0.06					
Sound power level (H/M/L)	dB	45/44/43					
Sound pressure level (H/M/L)	dB(A)	30/29/28					
Dimensions* H x W x D	mm	256+(33.5) x 840 (950) x 840 (950)					
Pipe connections	Liquid	mm (inches)	Ø6.35 (Ø1/4)				
	Gas	mm (inches)	Ø12.7 (Ø1/2)				
	Drain piping		VP-25				
Net weight* (Panel)	kg	19 (+5)					

Model Name	S-60MU2E5BN	S-73MU2E5BN	S-90MU2E5BN	S-112MU2E5BN	S-140MU2E5BN	S-160MU2E5BN	
Power source	220/230/240 V, 1 phase - 50Hz/60Hz						
Cooling capacity	kW	6.0	7.3	9.0	11.2	14.0	16.0
	BTU/h	20,500	24,900	30,700	38,200	47,800	54,600
Heating capacity	kW	7.1	8.0	10.0	14.0	16.0	18.0
	BTU/h	24,200	27,300	34,100	47,800	54,600	61,400
Power input	Cooling kW	0.035/0.035/0.035	0.040/0.040/0.040	0.040/0.040/0.040	0.095/0.095/0.095	0.095/0.095/0.095	0.105/0.105/0.105
	Heating kW	0.035/0.035/0.035	0.040/0.040/0.040	0.040/0.040/0.040	0.090/0.090/0.090	0.090/0.090/0.090	0.100/0.100/0.100
Running current	Cooling A	0.34/0.33/0.32	0.37/0.36/0.35	0.39/0.38/0.37	0.77/0.74/0.71	0.77/0.74/0.71	0.85/0.82/0.79
	Heating A	0.33/0.32/0.31	0.36/0.35/0.34	0.38/0.37/0.36	0.75/0.72/0.69	0.75/0.72/0.69	0.83/0.80/0.77
Fan	Type	Turbo fan					
	Air flow rate (H/M/L)	1,260/960/780					
	L/s	350/267/217					
	Motor output	0.06					
Sound power level (H/M/L)	dB	51/47/44					
Sound pressure level (H/M/L)	dB(A)	36/32/29					
Dimensions* H x W x D	mm	319+(33.5) x 840 (950) x 840 (950)					
Pipe connections	Liquid	mm (inches)	Ø6.35 (Ø1/4)				
	Gas	mm (inches)	Ø12.7 (Ø1/2)				
	Drain piping		VP-25				
Net weight* (Panel)	kg	20 (+5)					

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

\* The values in ( ) for external dimensions and Net weight are the values for the optional ceiling panel.  
In the case of nanoe X OFF Specifications are subject to change without notice.

## U2 TYPE 4-WAY CASSETTE Dimensions



## Standard Equipped nanoe™ Technology

- nanoe™ X, charged water particles, contain hydroxyl radical (OH radical) that work to provide quality air.
- The electrodes of nanoe™ X devices are made of titanium and electricity discharge into the water particles of nanoe™. So no need to clean or replace the device (maintenance free without wear).



**Craftsmanship in Japan enables the adoption of titanium**

Electrodes of nanoe™ X devices are produced with the support of craftsmen in Japan that has advanced expertise on processing ultra-small parts of titanium glass frames although titanium is very strong material and difficult to process.



nanoe™ X module

Unique nanoe™ X module casing releases 48 trillion hydroxyl radical (OH radical) per second.



nanoe™ X device



# Y3 TYPE 4-WAY Mini Cassette

Mini semi concealed cassette

Optional accessory

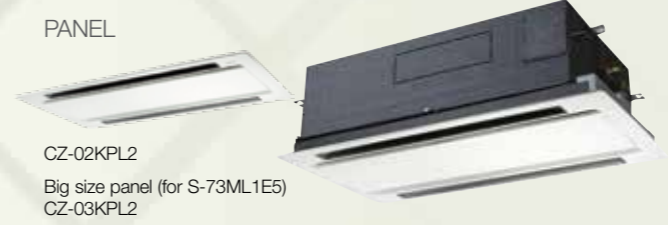


Please refer to the nanoe™ X website for the Mark 3 information.



# L1 TYPE 2-WAY Cassette

Optional accessory

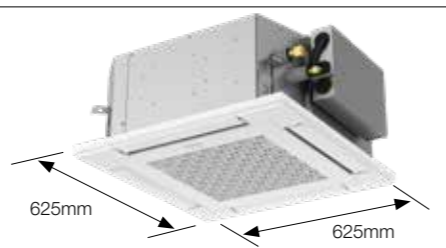


## Technical focus

- Mini cassette fits into a 60 x 60 cm ceiling grid
- Powerful drain pump gives 850 mm lift
- Multi-directional air flow
- Easy installation
- DC fan motor with variable speed and a new heat exchanger ensures efficient power consumption
- nanoe™ X : 100x for CAC (100 times more nanoe™ particle for wide commercial space). Inside cleaning by 100x nanoe™ + dry control

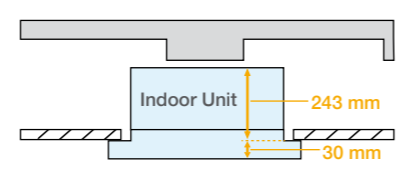
## Compact design

Thanks to advanced Panasonic design the panel is a compact 625 x 625 mm, offering elegant, unobtrusive installation even where space is limited.



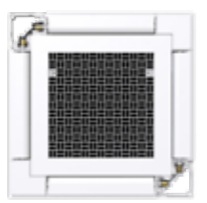
## Lighter and slimmer, easier installation

When only 230 mm of indoor body height, it can easily fit in limited spaces and tight spots. (Required 243 mm from bottom of panel to top of the unit)



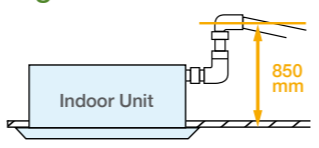
## Individual flap control

Keep everyone comfortable by directing air where it's needed and away from where it isn't with individual flap control.



## A drain height of up to 850 mm from the ceiling surface

The internal pump allows the drain pipe to be elevated up to 850 mm above the base of the unit.



Model Name	S-22MY3E	S-28MY3E	S-36MY3E	S-45MY3E	S-56MY3E	
Power source	220/230/240 V, 1 phase - 50Hz/60Hz					
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6
	BTU/h	7,500	9,600	12,300	15,400	19,100
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3
	BTU/h	8,500	10,900	14,300	17,100	21,500
Power input	Cooling kW	0.020	0.021	0.022	0.030	0.042
	Heating kW	0.018	0.019	0.020	0.028	0.040
Running amperes	Cooling A	0.25   0.24   0.23	0.26   0.25   0.24	0.27   0.26   0.25	0.35   0.34   0.33	0.44   0.43   0.42
	Heating A	0.22   0.21   0.20	0.23   0.22   0.21	0.24   0.23   0.22	0.32   0.31   0.30	0.41   0.40   0.39
Fan motor	Type	Turbo fan		Turbo fan		
	Airflow rate (H/M/L)	522/420/360	540/450/360	570/468/360	690/540/390	810/630/480
	Output kW	0.03	0.03	0.03	0.03	0.03
	Sound power level (H/M/L)	48/45/43	49/45/43	50/46/43	54/49/45	57/52/48
Sound pressure level (H/M/L)	Cooling dB(A)	33/30/28	34/30/28	35/31/28	39/34/30	42/37/33
	Heating dB(A)	33/30/28	34/30/28	35/31/28	39/34/30	42/37/33
Dimensions*	H x W x D mm	243(+30) x 575(625) x 575(625)	243(+30) x 575(625) x 575(625)	243(+30) x 575(625) x 575(625)	243(+30) x 575(625) x 575(625)	243(+30) x 575(625) x 575(625)
	Liquid mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)
	Gas mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)
Pipe connections	Drain piping	VP-20	VP-20	VP-20	VP-20	VP-20
	Net weight*	15(+2.8)	15(+2.8)	15(+2.8)	15(+2.8)	15(+2.8)

\* The values in ( ) for external dimensions and Net weight are the values for the optional ceiling panel. Specifications are subject to change without notice.

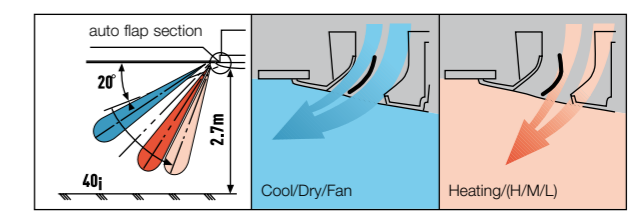
Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature 27°C DB / 19°C WB	20°C DB / 15°C WB
Outdoor air temperature 35°C DB / 24°C WB	7°C DB / 6°C WB	

## Technical focus

- Airflow and distribution is automatically altered depending on the operational mode of the unit
- Drain up is possible up to 500mm via the built-in drain pump
- Simple maintenance

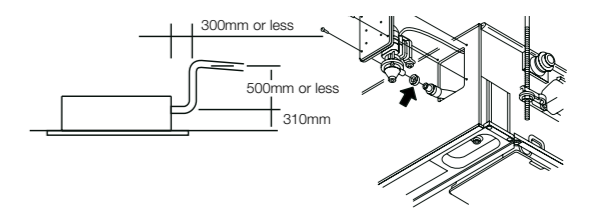
## Auto flap control

Airflow and distribution is automatically altered depending on the operational mode (cooling or heating) of the unit.



## Drain up is possible up to 500mm via the built-in drain pump.

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



## Simple 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.

Model Name	S-22ML1E5	S-28ML1E5	S-36ML1E5	S-45ML1E5	S-56ML1E5	S-73ML1E5	
Power source	220/230/240V, 1 phase - 50 / 60Hz						
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.3
	BTU/h	7,500	9,600	12,000	15,000	19,000	25,000
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000
Power input	Cooling kW	0.086/0.090/0.095	0.086/0.092/0.097	0.088/0.093/0.099	0.091/0.097/0.103	0.091/0.097/0.103	0.135/0.145/0.154
	Heating kW	0.055/0.058/0.062	0.055/0.060/0.064	0.057/0.061/0.066	0.060/0.065/0.070	0.060/0.065/0.070	0.100/0.109/0.117
Running current	Cooling A	0.45/0.45/0.45	0.44/0.45/0.45	0.44/0.45/0.45	0.45/0.45/0.45	0.45/0.45/0.45	0.64/0.65/0.66
	Heating A	0.29/0.29/0.30	0.28/0.29/0.30	0.28/0.29/0.30	0.29/0.29/0.30	0.29/0.29/0.30	0.46/0.48/0.49
Fan	Type	Sirocco fan		Sirocco fan		Sirocco fan	
	Air flow rate (H/M/L)	480/420/360	540/480/420	580/520/460	660/540/480	660/540/480	1,140/960/840
	Motor output kW	0.03	0.03	0.03	0.03	0.03	0.05
	Sound power level (H/M/L)	40/38/35	44/40/37	45/42/39	46/44/40	46/44/40	49/46/44
Sound pressure level (H/M/L)	Cooling dB(A)	30/27/24	33/29/26	34/31/28	35/33/29	35/33/29	38/35/33
	Heating dB(A)	30/27/24	33/29/26	34/31/28	35/33/29	35/33/29	38/35/33
Dimensions*	H x W x D mm	350+8x840 (1,060) x600 (680)	350+8x840 (1,060) x600 (680)	350+8x840 (1,060) x600 (680)	350+8x840 (1,060) x600 (680)	350+8x1,140 (1,360) x600 (680)	
	Liquid mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	
	Gas mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)
Pipe connections	Drain piping	VP-25	VP-25	VP-25	VP-25	VP-25	
	Net weight*	23 (+5.5)	23 (+5.5)	23 (+5.5)	23 (+5.5)	23 (+5.5)	30 (+9)

\* The values in ( ) for external dimensions and Net weight are the values for the optional ceiling panel. Specifications are subject to change without notice.

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature 27°C DB / 19°C WB	20°C DB
Outdoor air temperature 35°C DB / 24°C WB	7°C DB / 6°C WB	

# D1 TYPE 1-WAY Cassette



Semi concealed slim cassette



Optional accessory



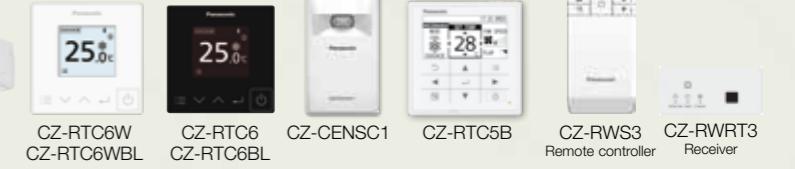
# T2 TYPE Ceiling Mounted



Optional accessory



ECONAVI  
ECONAVI ready

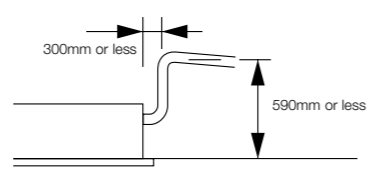


## Technical focus

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

### Drain height

A built-in drain pump provides up to 590mm lift from ceiling height for flexible install options.

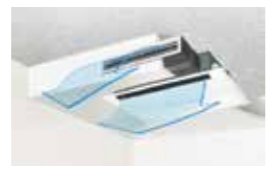


With 3 types of air-blow systems, the units can be used in various ways.



**(1) One-direction "down-blow" system**

Powerful one-direction "down-blow" system reaches the floor even from high ceilings (up to 4.2m).



**(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.



**(3) One-direction ceiling-mounted system**

This powerful ceiling-mounted "front-blow" system efficiently air-conditions the space in front of the unit. (Additional accessories required)

Model Name		S-28MD1E5	S-36MD1E5	S-45MD1E5	S-56MD1E5	S-73MD1E5
Power source		220/230/240 V, 1 phase - 50 / 60 Hz				
Cooling capacity	kW	2.8	3.6	4.5	5.6	7.3
	BTU/h	9,600	12,000	15,000	19,000	25,000
Heating capacity	kW	3.2	4.2	5.0	6.3	8.0
	BTU/h	11,000	14,000	17,000	21,000	27,000
Power input	Cooling kW	0.050/0.051/0.052	0.050/0.051/0.052	0.050/0.051/0.052	0.058/0.060/0.061	0.086/0.087/0.089
	Heating kW	0.039/0.040/0.042	0.039/0.040/0.042	0.039/0.040/0.042	0.046/0.048/0.049	0.075/0.076/0.077
Running current	Cooling A	0.40/0.39/0.39	0.40/0.39/0.39	0.40/0.39/0.39	0.46/0.46/0.46	0.71/0.70/0.69
	Heating A	0.36/0.35/0.35	0.36/0.35/0.35	0.36/0.35/0.35	0.42/0.41/0.41	0.66/0.65/0.63
Fan	Type	Sirocco fan				
	Air flow rate (H/M/L) m³/h	720/600/540	720/600/540	720/660/600	780/690/600	1,080/900/780
	(H/M/L) L/s	200/167/150	200/167/150	200/183/167	217/192/167	300/250/217
	Motor output kW	0.05	0.05	0.05	0.05	0.05
Sound power level (H/M/L) dB	(H/M/L)	47/45/44	47/45/44	47/46/45	49/47/45	56/51/47
	dB(A)	36/34/33	36/34/33	36/35/34	38/36/34	45/40/36
Dimensions * H x W x D mm	(mm)	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (800)
	(inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø9.52 (Ø3/8)
Pipe connections	Gas mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)
	Drain piping	VP-25	VP-25	VP-25	VP-25	VP-25
Net weight * kg		21 (+5.5)	21 (+5.5)	21 (+5.5)	21 (+5.5)	22 (+5.5)

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

\* The values in ( ) for external dimensions and Net weight are the values for the optional ceiling panel. Specifications are subject to change without notice.

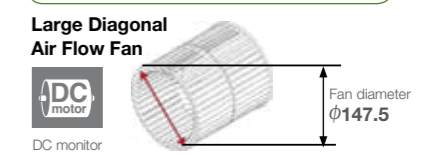
## Technical focus

- Lower sound levels
- Standardised height and depth for all models
- Long and wide air distribution
- Easy to install and maintain
- Fresh air knockout

### Energy-saving technology Delivering top-class efficiency

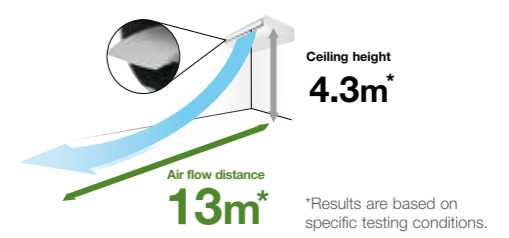
Optimization of the shape of the casing and fan assures bigger air flow and higher efficiency. Energy-saving performance is top class in the industry.

### Top Class Energy Saving



### Comfortable, long-distance air flow distribution

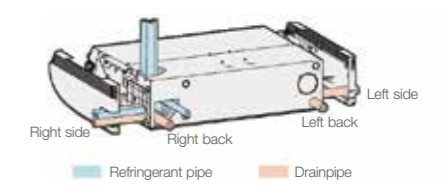
The shape of the outlet has been optimized to provide long-distance air flow distribution. Even in deep spaces, air flow reaches every corner for exceptionally comfortable air conditioning.



High Ceiling Setting *Setting by remote control	Air flow distance		
	112	140	160
4.3m	12m	13m	13m

### Multiple piping directions for flexible installation

The 5-directional drain pipe and 3-directional refrigerant pipe make installation much easier. And the neat fit with walls and ceilings assures more installation flexibility.



Model Name		S-36MT2E5A	S-45MT2E5A	S-56MT2E5A	S-73MT2E5A	S-106MT2E5A	S-140MT2E5A
Power source		220 / 230 / 240 V, 1 phase - 50 / 60 Hz					
Cooling capacity	kW	3.6	4.5	5.6	7.3	10.6	14.0
	BTU/h	12,300	15,400	19,100	24,900	36,200	47,800
Heating capacity	kW	4.2	5.0	6.3	8.0	11.4	16.0
	BTU/h	14,300	17,100	21,500	27,300	38,900	54,600
Power input	Cooling kW	0.035/0.035/0.035	0.040/0.040/0.040	0.040/0.040/0.040	0.055/0.055/0.055	0.080/0.080/0.080	0.100/0.100/0.100
	Heating kW	0.035/0.035/0.035	0.040/0.040/0.040	0.040/0.040/0.040	0.055/0.055/0.055	0.080/0.080/0.080	0.100/0.100/0.100
Running current	Cooling A	0.37/0.36/0.35	0.39/0.38/0.37	0.39/0.38/0.37	0.45/0.44/0.43	0.69/0.67/0.65	0.82/0.79/0.77
	Heating A	0.37/0.36/0.35	0.39/0.38/0.37	0.39/0.38/0.37	0.45/0.44/0.43	0.69/0.67/0.65	0.82/0.79/0.77
Fan	Type	Sirocco fan					
	Air flow rate (H/M/L) m³/h	840/720/630	900/750/630	900/750/630	1,260/1,080/930	1,800/1,500/1,380	1,920/1,680/1,440
	(H/M/L) L/s	233/200/175	250/208/175	250/208/175	350/300/258	500/417/383	533/467/400
	Motor output kW	0.043	0.043	0.043	0.074	0.111	0.111
Sound power level (H/M/L) dB	(H/M/L)	54/50/48	55/51/48	55/51/48	57/53/51	60/55/54	62/58/55
	dB(A)	36/32/30	37/33/30	37/33/30	39/35/33	42/37/36	44/40/37
Dimensions H x W x D mm	(mm)	235 x 960 x 690	235 x 960 x 690	235 x 960 x 690	235 x 1,275 x 690	235 x 1,590 x 690	235 x 1,590 x 690
	(inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)
Pipe connections	Gas mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)
	Drain piping	VP-20	VP-20	VP-20	VP-20	VP-20	VP-20
Net weight kg		27	27	27	33	40	40

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.



# P1 TYPE Floor Standing



Optional accessory



# R1 TYPE Concealed Floor Standing

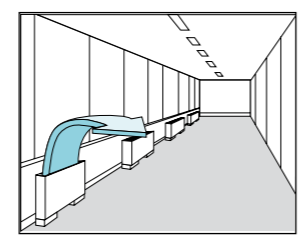


Optional accessory



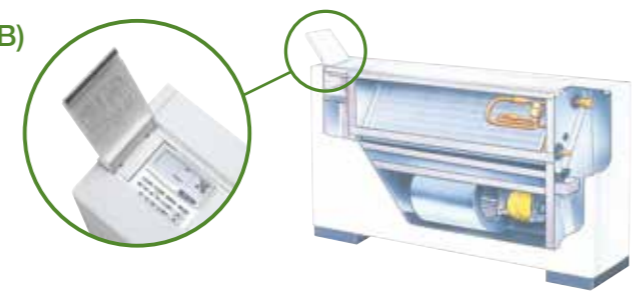
## Technical focus

- 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 air flow



## Effective perimeter air conditioning

## A wired remote control (CZ-RTC4A/CZ-RTC5B) can be installed in the body



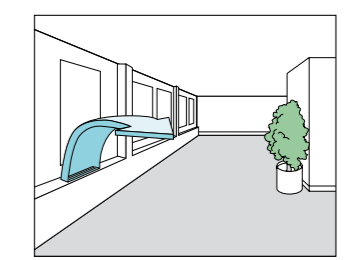
Model Name		S-22MP1E5	S-28MP1E5	S-36MP1E5	S-45MP1E5	S-56MP1E5	S-71MP1E5	
Power source		220/230/240 V, 1 phase - 50 / 60 Hz						
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.1	
	BTU/h	7,500	9,600	12,000	15,000	19,000	24,000	
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0	
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	
Power input	Cooling kW	0.051/0.056/0.061	0.051/0.056/0.061	0.079/0.085/0.091	0.116/0.126/0.136	0.116/0.126/0.136	0.150/0.160/0.170	
	Heating kW	0.036/0.040/0.045	0.036/0.040/0.045	0.064/0.070/0.076	0.079/0.091/0.101	0.079/0.091/0.101	0.110/0.120/0.130	
Running current	Cooling A	0.24/0.25/0.26	0.24/0.25/0.26	0.37/0.38/0.39	0.54/0.56/0.58	0.54/0.56/0.58	0.70/0.72/0.73	
	Heating A	0.17/0.18/0.19	0.17/0.18/0.19	0.30/0.31/0.32	0.37/0.41/0.43	0.37/0.41/0.43	0.52/0.54/0.56	
Fan	Type	Sirocco fan						
	Air flow rate (H/M/L)	m³/h	420/360/300	420/360/300	540/420/360	720/540/480	900/780/660	1,020/840/720
		L/s	117/100/83	117/100/83	150/117/100	200/150/133	250/217/183	283/233/200
	Motor output kW	0.01	0.01	0.02	0.02	0.03	0.06	
Sound power level (H/M/L)	dB	44/41/39	44/41/39	50/46/40	49/46/42	50/47/42	52/49/46	
Sound pressure level (H/M/L)	dB(A)	33/30/28	33/30/28	39/35/29	38/35/31	39/36/31	41/38/35	
Dimensions	H x W x D	615 x 1,065 x 230	615 x 1,065 x 230	615 x 1,065 x 230	615 x 1,380 x 230	615 x 1,380 x 230	615 x 1,380 x 230	
	Liquid	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø9.52 (Ø3/8)
	Gas	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)
	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20	VP-20
Net weight	kg	29	29	29	39	39	39	

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.

## Technical focus

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



## Perimeter air conditioning with high interior quality

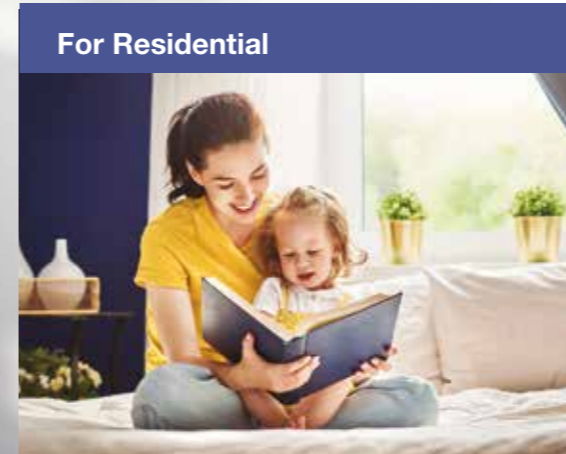
Model Name		S-22MR1E5	S-28MR1E5	S-36MR1E5	S-45MR1E5	S-56MR1E5	S-71MR1E5	
Power source		220/230/240 V, 1 phase - 50, 60 Hz						
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.1	
	BTU/h	7,500	9,600	12,000	15,000	19,000	24,000	
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0	
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	
Power input	Cooling kW	0.051/0.056/0.061	0.051/0.056/0.061	0.079/0.085/0.091	0.116/0.126/0.136	0.116/0.126/0.136	0.150/0.160/0.170	
	Heating kW	0.036/0.040/0.045	0.036/0.040/0.045	0.064/0.070/0.076	0.079/0.091/0.101	0.079/0.091/0.101	0.110/0.120/0.130	
Running current	Cooling A	0.24/0.25/0.26	0.24/0.25/0.26	0.37/0.38/0.39	0.54/0.56/0.58	0.54/0.56/0.58	0.70/0.72/0.73	
	Heating A	0.17/0.18/0.19	0.17/0.18/0.19	0.30/0.31/0.32	0.37/0.41/0.43	0.37/0.41/0.43	0.52/0.54/0.56	
Fan	Type	Sirocco fan						
	Air flow rate (H/M/L)	m³/h	420/360/300	420/360/300	540/420/360	720/540/480	900/780/660	1,020/840/720
		L/s	117/100/83	117/100/83	150/117/100	200/150/133	250/217/183	283/233/200
	Motor output kW	0.01	0.01	0.02	0.02	0.03	0.06	
Sound power level (H/M/L)	dB	44/41/39	44/41/39	50/46/40	49/46/42	49/46/42	52/49/46	
Sound pressure level (H/M/L)	dB(A)	33/30/28	33/30/28	39/35/29	38/35/31	39/36/31	41/38/35	
Dimensions	H x W x D	616 x 904 x 229	616 x 904 x 229	616 x 904 x 229	616 x 1,219 x 229	616 x 1,219 x 229	616 x 1,219 x 229	
	Liquid	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø9.52 (Ø3/8)
	Gas 410 A	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)
	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20	VP-20
Net weight	kg	21	21	21	28	28	28	

Global remarks	Rated conditions:	
	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB
Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.

# Smart Connectivity and Control Solutions

Panasonic offers a range of smart connectivity and control solutions for residential and commercial applications that allows you to conveniently manage and monitor air conditioning units in single or multiple locations from one mobile device.



## Personal Control Solutions Panasonic Comfort Cloud

### Remotely manage and monitor multiple air conditioning units in your home

Easily control and access all features of the air conditioning units with smart centralised control.



#### CZ-CAPWFC1

Network adaptor. Available for all types of VRF indoor units.



#### CZ-RTC6WBLW CZ-RTC6BLW

WLAN remote controller  
\*Available for particular types of VRF indoor units. Please consult with Panasonic sales engineers.



Panasonic Comfort Cloud

## Wide Range of Smart Control Solutions for All Needs

Whether you need to control multiple sites, a single office, or your home, we offer a range of innovative smart control solutions for a variety of needs.



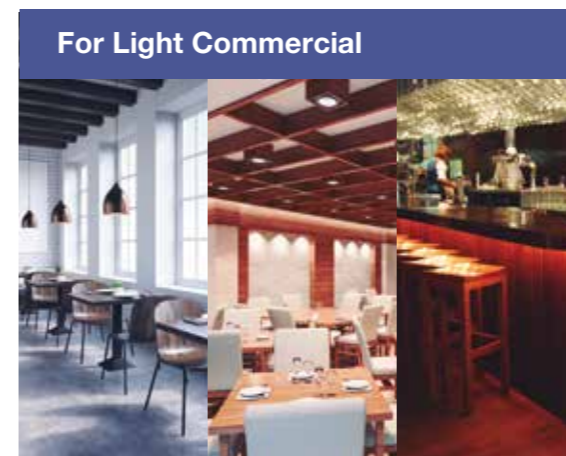
Panasonic Comfort Cloud

Intuitive and scalable air conditioning control solution using a personal mobile device.



VRF Smart Connectivity+

Offers efficient energy management with high indoor air quality (IAQ) control.



## Cost effective Energy Management Solution



### Multiple location control at your convenience with Comfort Cloud

Gain control of multiple zones and sites intuitively adjusting temperature by areas with differentiated user rights settings.

### Indoor Air Quality (IAQ) and efficient energy usage with VRF Smart Connectivity+

- Ultimate cooling comfort with sensing technology and automatic IAQ control.
- Simplified Plug & Play installation with BMS connection for better energy consumption.



Panasonic Comfort Cloud

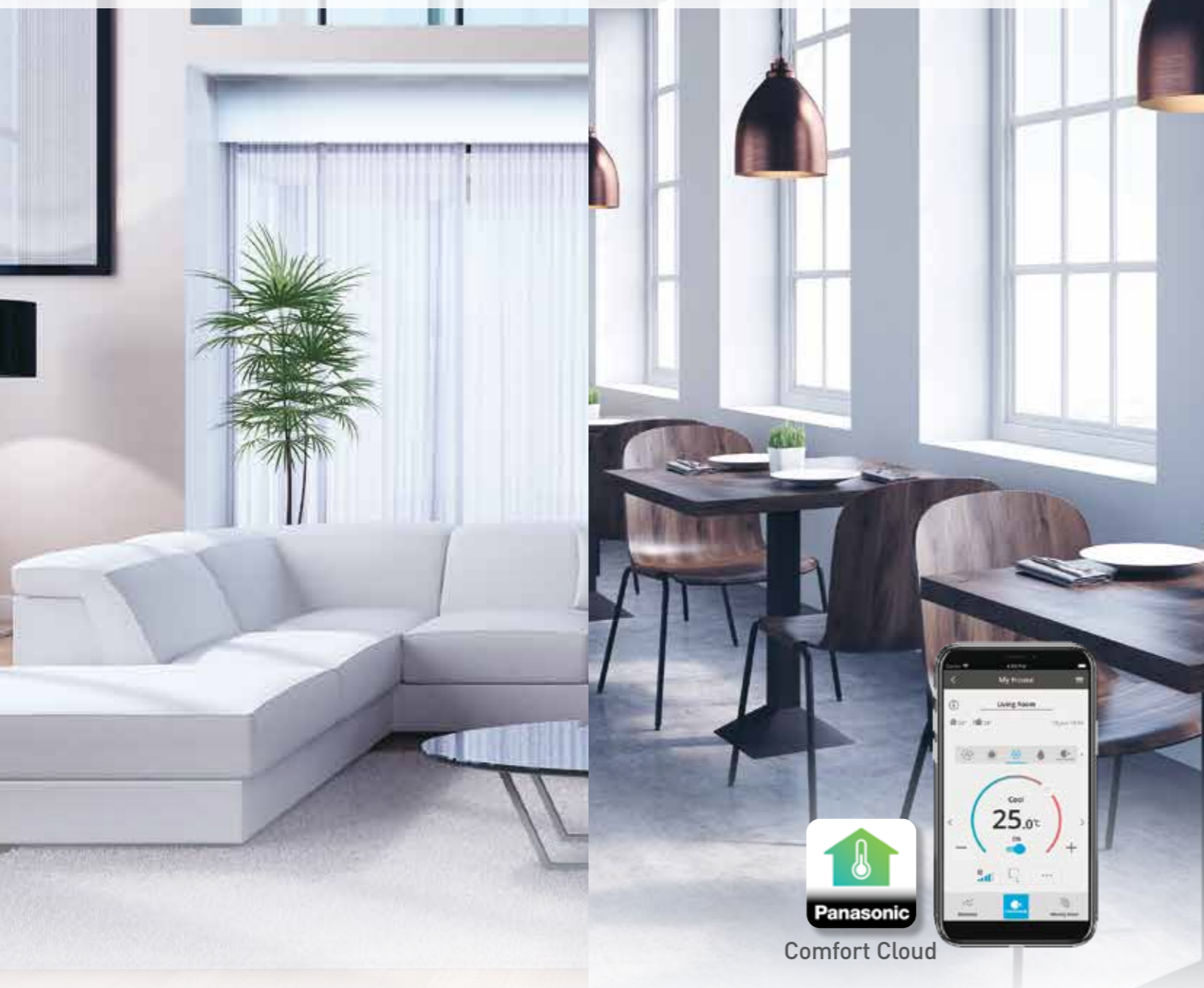


VRF Smart Connectivity+



# Panasonic Comfort Cloud

Control air conditioning units from wherever and whenever with your smartphone, by using Panasonic Comfort Cloud and WLAN smart adaptor. This scalable solution is ideal for one system, one site or multiple locations. Coupling the adaptor with the already feature rich systems, makes it an ideal solution for both residential and commercial applications.



**For Residential**  
Remotely manage and monitor air conditioning units from anywhere anytime.

**For Light Commercial**  
Gain control of multiple zones and sites intuitively up to 200 indoor units.

## Panasonic Comfort Cloud features

### From 1 to 200 units

User can control up to 200 indoor units. 10 different sites, with up to 20 units / groups per site.



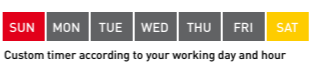
### Multiple User

The Panasonic Comfort Cloud App allows multiuser access control. Restrict user access to specific units.



### Easy Scheduling

Complex weekly scheduling made simple. Not only for one units, but across multiple sites and from a smartphone.



### Error Codes

Error code notification through the App, provides early notification and allows for faster repair.



## Application examples

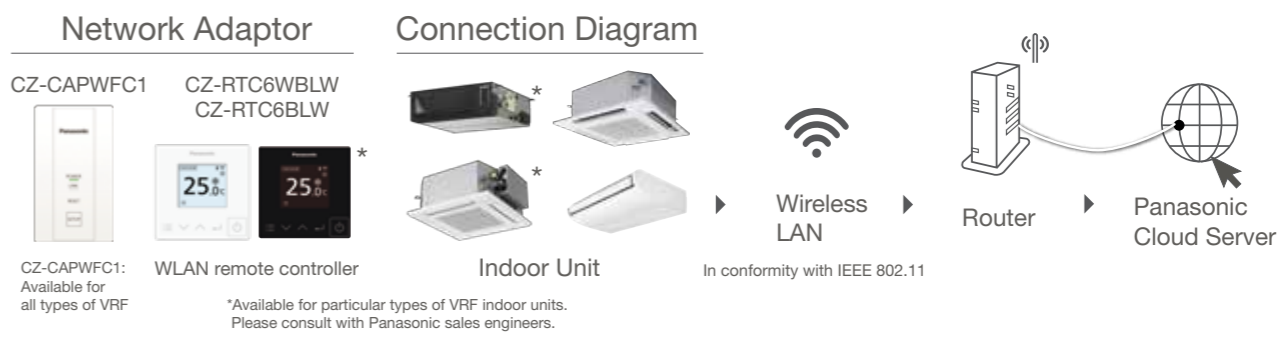


Centralised control from reception.



Multiple location control for small businesses.

## System configuration



## WLAN smart adaptor specification

CZ-CAPWFC1	
Input Voltage	DC 12V (Supplied from indoor unit)
Power Consumption	Maximum 2.4W
Size [H x W x D]	120 x 70 x 25mm
Weight	190g (including communications lines)
Interface	Wireless LAN
Wireless LAN Standard	IEEE 802.11 b/g/n
Frequency range	2.4GHz band
Encryption	WPA2-PSK(TKIP/AES)
Operation range	0-55°C, 20 - 80RH%



Comfort Cloud App



Scan QR code to download free Panasonic Comfort Cloud App

Compatible Device and Browsers

1. IOS 9.0 or above
2. Android™ 4.4 or above



# VRF Smart Connectivity+

Through thorough energy management, Panasonic's VRF Smart Connectivity+ is a completely new, state-of-the-art solution providing energy saving and comfort as well as simple installation, operation and running.



**Dramatic reduction of OpEx with outstanding IAQ.**  
 3 built-in sensors: Temperature, RH and occupancy.  
 ZigBee wireless sensors: CO<sub>2</sub> / temperature / RH%, window / door, ceiling / wall / water leakage.  
 Relay Pack, Hotel Room Controller.



**User-/owner-friendly.**  
 Colour touch screen.  
 Simple and easy to use.  
 22 languages.  
 Easy-to-understand error description.



**Ultimate customisation.**  
 Customisable colour background.  
 Custom display/icons, messages.  
 Programmable logic (also stand alone).  
 Various controls and various external connection devices.



**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.



VRF Smart Connectivity+ offers efficient energy management and a new air conditioning control solution with high IAQ (indoor air quality).

Energy management system for rooms.

**Each room is monitored by high-precision sensors, making it possible to make every room's temperature comfortable without wasting energy.**

Management system for the entire building.

**A Building Energy Management System (BEMS) can also be connected for Plug & Play centralised control of the building's entire energy consumption.**

## 1 Quality air control

Optimum IAQ is realized using the CO<sub>2</sub> and humidity sensors. The interior environment remains comfortable, while heating and cooling costs are minimized. The CO<sub>2</sub> sensor can control ventilation systems, which contribute to improving the room's air quality.

## 2 Easy installation and integration

A remote controller is all that's required for occupancy control and optimum automatic indoor air quality (IAQ) control. Simple operation with a rented interface further contributes to increased energy efficiency and productivity for reduced capital expenditure (CapEx) and operating expense (OpEx).

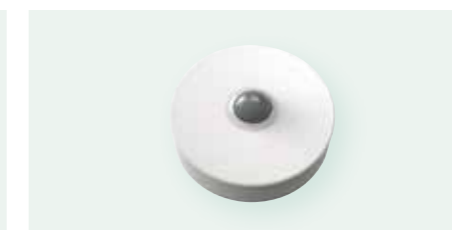
## 3 Other equipment control

One room controller manages various devices including lighting and the blinds. A ventilation system and other external connection devices can be connected by using HRC or SE8350 so that various control is possible with this controller alone, even without BMS.

VRF Smart Connectivity+: SER8150.



**Door/window 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<sub>2</sub> /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).

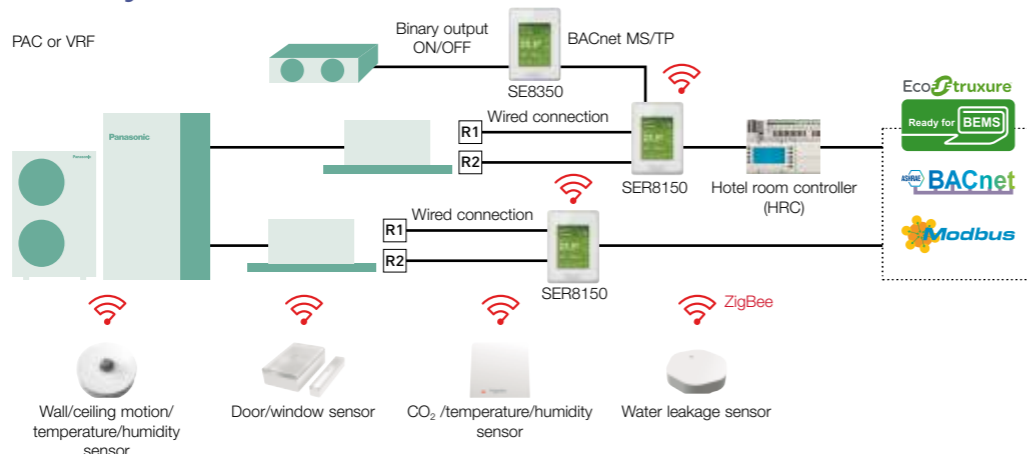


**Hotel Room Controller (HRC).**  
 The Hotel Room Controller controls connected guest room devices and aggregates data, making it visible to guest room and property management systems.



## Energy management system for rooms

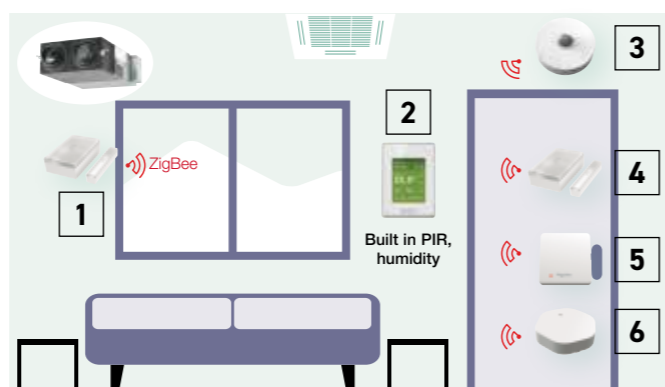
By installing a wall/ceiling motion temperature sensor, window/door sensor, and CO<sub>2</sub> sensor in the room, ideal, waste-free air conditioning is achieved.



## Sensing and control technology

Using sensors from Schneider Electric, high-quality occupancy control 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 for 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<sub>2</sub> 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<sub>2</sub> 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.  
HRCBPBG28R



Hotel room controller w/display 42 indoor units.  
HRCPDG42R

\* Those accessories require system integrator support on site.



Sensor with room CO<sub>2</sub>,  
temperature and humidity.  
SED-CO2-G-5045



Sensor with room temperature  
and humidity.  
SED-TRH-G-5045



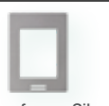
Door/window sensor.  
SED-WDC-G-5045



Wall/ceiling motion/temperature/  
humidity sensor.  
SED-MTH-G-5045



Water leakage sensor.  
SED-WLS-G-5045



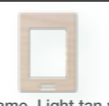
Cover frame. Silver.  
FAS-00



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<sub>2</sub> sensor up to 10 years. Battery level data point.

## 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 operation costs.



### 2 Small and medium offices

CO<sub>2</sub> sensors (option) and humidity sensors. CO<sub>2</sub> sensors (option) 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, employees, and products themselves.

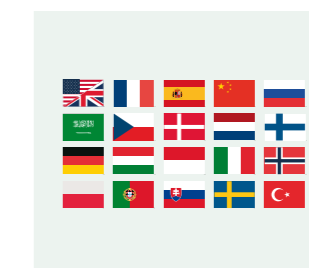
## Innovative and unrivalled advantages



**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 of remote controller logic possible, and updating to match conditions.

# FSV Controllers

A wide variety of control options to meet the requirements of different applications.

**ECONAVI**  
**ECONAVI Sensor**  
 CZ-CENSC1



Utilises ECONAVI Sensor and Control Program technologies to detect where energy is normally wasted and self-adjusts cooling power to reduce energy waste.

- Activity detection
- Absence detection

Operation system	Individual control systems			
Requirements	Simplified high-spec operation	High-spec operation	Normal operation	Operation from anywhere in the room
External appearance				
Type, model name	Simplified high-spec Wired Remote Controller with Bluetooth CZ-RTC6W/CZ-RTC6WBL/ *CZ-RTC6WBLW (White) CZ-RTC6/CZ-RTC6BL/ *CZ-RTC6BLW (Black) <small>*Available for particular types of VRF indoor units.</small>	High-spec Wired Remote Controller CZ-RTC5B	Timer Remote Controller (Wired) CZ-RTC4A	Wireless Remote Controller Controller: CZ-RWS3 Receiver: CZ-RWRU3 CZ-RWRY3 CZ-RWRL3 CZ-RWRD3 CZ-RWRT3 CZ-RWRC3
Built-in thermostat	●	●	●	—
nanoe™ X on/off control	●	●	●	●
ECONAVI ON/OFF control	●	●	●	●
Number of indoor units which can be controlled	1 group, 8 units	1 group, 8 units	1 group, 8 units	1 group, 8 units
Use limitations	<ul style="list-style-type: none"> <li>· CZ-RTC6(W) : Up to 2 controllers can be connected per group (only combination possible with CZ-RTC6(W))</li> <li>· CZ-RTC6(W)BL/CZ-RTC6(W)BLW : Up to 1 controller can be connected per group</li> </ul>	<ul style="list-style-type: none"> <li>· Up to 2 controllers can be connected per group (When using ECONAVI sensor, only one remote controller is possible to connect at indoor unit)</li> </ul>	<ul style="list-style-type: none"> <li>· Up to 2 controllers can be connected per group (When using ECONAVI sensor, only one remote controller is possible to connect at indoor unit)</li> </ul>	<ul style="list-style-type: none"> <li>· Up to 2 controllers can be connected per group.</li> </ul>
Function ON/OFF	●	●	●	●
Mode setting	●	●	●	●
Fan speed setting	●	●	●	●
Temperature setting	●	●	●	●
Air flow direction	●	●	●	●
Permit/Prohibit switching	—	—	—	—
Weekly program*	●	●	●	—

All specifications are subject to change without notice.  
 \*(CZ-RTC6(W)BL/CZ-RTC6(W)BLW with H&C Control App)

Timer operation	Centralised control systems				BMS System PC Base	Connection with 3rd Party Controller
Daily and weekly program	Operation with various functions from a central location	Only ON/OFF operation from a central location	Simplified load distribution ratio (LDR) for each tenant 10.4 in. touch screen panel color LCD			
Schedule Timer	System Controller	ON/OFF Controller	Intelligent Controller	<b>P-AIMS Software</b> Up to 1024 units  CZ-CSWKC2	<b>Seri-Para I/O unit for outdoor unit</b>  CZ-CAPDC2	
CZ-ESWC2	CZ-64ESMC3	CZ-ANC3	CZ-256ESMC3 (CZ-CFUNC2)	<b>Optional software</b>  CZ-CSWAC2 for Load distribution CZ-CSWWC2 for Web application CZ-CSWGC2 for Object layout display CZ-CSWBC2 for BACnet software interface <small>*PC required (field supply)</small>	<b>Interface Adaptor</b>  CZ-CAPC3	
—	—	—	—		<b>Seri-Para I/O unit for each indoor unit</b>  CZ-CAPBC2	
—	—	—	—		<b>Communication Adaptor</b>  CZ-CFUNC2	
—	●	—	●		<b>LonWorks Interface</b>  CZ-CLNC2	
64 groups, max. 64 units	64 groups, max. 64 units	16 groups, max. 64 units	64 units x 16 systems, max. 256 units			
<ul style="list-style-type: none"> <li>· Required power supply from the system controller</li> <li>· When there is no system controller, connection is possible to the T10 terminal of an indoor unit.</li> </ul>	<ul style="list-style-type: none"> <li>· Up to 10 controllers, can be connected to one system.</li> <li>· Main unit/sub unit (1 main unit + 1 sub unit) connection is possible.</li> <li>· Use without remote controller is possible.</li> </ul>	<ul style="list-style-type: none"> <li>· Up to 8 controllers (4 main units + 4 sub units) can be connected to one system.</li> <li>· Use without remote controller is impossible.</li> </ul>	<ul style="list-style-type: none"> <li>· A communication adaptor (CZ-CFUNC2) must be installed for three or more links.</li> </ul>			
—	●	●	●			
—	●	—	●			
—	●	—	●			
—	●	—	●			
—	●	—	●			
—	●	●	●			
●	●	—	●			



# Panasonic Total Air Conditioning Management System P-AIMS

## P-AIMS basic software / CZ-CSWKC2

Up to 1024 indoor units can be controlled by one PC

### Functions of basic software

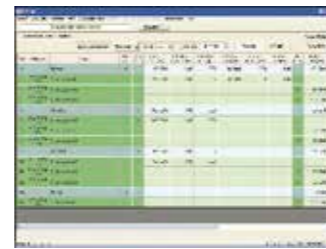
- Standard remote control for all indoor units
- Many timer schedule programs can be set on the calendar
- Detailed information display for alarms
- CSV file output with alarm history, operating status.
- Automatic data backup to HDD



With 4 upgrade packages the basic software can be upgraded to suit individual requirements. For Load Distribution software, digital power meter c/w pulse require (field supply)



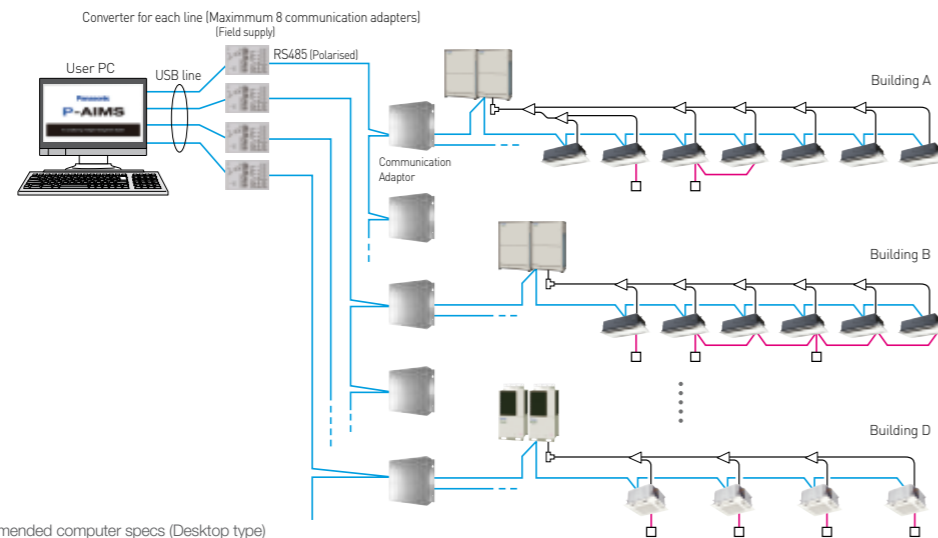
CZ-CFUNC2



The P-AIMS is ideal for large areas/buildings such as shopping centers, universities and office buildings.

Each line can have max.8 communication adaptors units, and control max.512 units.

In total, 1024 indoor units can be controlled by 1 "P-AIMS" PC.



### Recommended computer specs (Desktop type)

Operating system	Windows 10 Pro 64bit
CPU	Intel Core™ i5-6500 3.20GHz or higher (Recommended computer) Intel Core™ i7-7700 3.60GHz or higher (When installing Layout Display Software or using 512 or more indoor units)
Memory	8GB or larger
HDD	SSD (Solid State Drive) 250GB or larger
Monitor	1920 x 1080 (full HD) Recommended (1280 x 1024 (SXGA) minimum)
(Built-in speaker)	1920 x 1080 (full HD) Required (when installing Layout Display Software)
External HDD	500GB or larger (An external power supply type is preferable because the HDD will be used for backing up data.)
LAN	Network adaptor equipped machine (when Web Software or BACnet Communication Software installed)
UPS (Field Supply)	Select a UPS with a sine output wave form

## Intelligent Controller (CZ-256ESMC3)



Touch panel

Dimensions  
H 240 x W 280 x D 85 mm  
Power supply AC 100 to 240 V (50/60 Hz)  
LCD: 10.4 in. TFT, XGA(1024 x 768), LED backlight  
UPS (Field Supply):select UPS with a sine output wave form

### Product features

- 10.4 in., large, easy-to-use color LCD
  - With smartphone like operations, such as swiping and flicking
- Enhanced energy-saving control functions
  - Packed with demand functions
  - Set temperature auto return settings, Auto shutoff, Set temperature range limit settings
- Energy visualization
  - Displays electricity & gas usage distribution
  - Supports energy-saving plans with graph display function

### Limitation contents (Limitations can be user defined)

Individual	There is no limitation for the operation of the remote controller. However, the contents will be changed to the contents of the controller operated last. (Last-pressed priority.)
Prohibition 1	The remote controller cannot be used for ON/OFF. (All other operations are possible from the remote controller.)
Prohibition 2	The remote controller cannot be used for ON/OFF, operation mode change and temperature setting. (All other operations are possible from the remote controller.)
Prohibition 3	The remote controller cannot be used for operation mode change and temperature setting. (All other operations are possible from the remote controller.)
Prohibition 4	The remote controller cannot be used for operation mode change. (All other operations are possible from the remote controller.)

### New features

- Max 256 indoor unit [4 links x 64 units] can be controlled. In case of three or more links [more than 128 units], a communication adaptor CZ-CFUNC2 must be installed for three or more links.
- Operation is possible as batch, in zone units, and in group units.
- ON/OFF, operation mode setting, temperature setting, for fan speed setting, air flow direction setting (when used without a remote controller) and remote controller local operation prohibition [prohibition 1,2,3,4] can be done
- Graph display [trends, comparisons]
- ECONAVI ON/OFF
- Outdoor unit quiet operation ON/OFF
- Energy-saving functions
- Event control [such as equipment linkage]
- Limitation contents for prohibited operation

Prohibition means limitation of the operation contents from the remote controller. It is also possible to change the prohibition items.

### Remote control

The LAN terminal on this unit enables you to connectit to a network. Connecting to internet will enable you to operate the unit and check the status using a PC from remote location.

### Power Distribution function

You can view cumulative electrical consumption per indoor unit or in a area. Digital power meter with pulse require (Field Supply) for this function



# Panasonic VRF Global Project References

Panasonic air conditioning systems provides comprehensive solutions to businesses around the world. Harnessing our advanced technology and extensive on-site expertise, we serve clients in a diverse range of environments throughout the world.

## HOTEL

**Australia** Travelodge Hobart



Air Conditioning System:  
VRF 3-way FSV MF2 series 8 systems  
Indoor Units: 116 units  
Cooling Capacity:  
302 kW / 86 USRT

**Indonesia** Patra Jasa Hotel



Air Conditioning System:  
VRF 2-way FSV ME1 series 14 systems  
Indoor Units: 132 units  
Cooling Capacity:  
677 kW / 193 USRT

**Spain** Hotel Claris 5 GL



Air Conditioning System:  
VRF 2-way ME1&LE1 series 11 systems  
VRF 3-way MF1 series 14 systems  
Indoor Units: 233 units  
Cooling Capacity: 769 kW / 218 USRT

**Spain** Monument Hotel



Air Conditioning System:  
VRF 2-way ME1 series 4 systems,  
VRF 3-way 12 systems  
Indoor Units: 171 units  
Cooling Capacity:  
592 kW / 168.33 USRT

**Spain** LAVIDA Hotel PGA Catalunya Resort



Air Conditioning System:  
VRF 2-way FSV ME2 series 2 systems  
Indoor Units: 54 units  
Cooling Capacity: 236 kW / 67 USRT

**Russia** River Park Hotel



Air Conditioning System:  
VRF 2-way ME1 series 47 systems  
Indoor Units: 96 units  
Cooling Capacity: 788 kW / 224 USRT

**Germany** The LEGOLAND Castle Hotel



Air Conditioning System:  
VRF 3-way MF2 12 systems  
Indoor Units: 144 units  
Cooling Capacity:  
592 kW / 168.33 USRT

**Ireland** K Club, Co. Kildare



Air Conditioning System: VRF 3-way FSV MF2  
Indoor Units: 70 units  
Cooling Capacity: 200 kW / 56.87 USRT

## OFFICE

**Malaysia** Gapruna project



Air Conditioning System:  
VRF 2-way FSV ME1 series 109 systems  
Indoor Units: 537 units  
Cooling Capacity:  
5,370 kW / 1,526 USRT

**Malaysia** Plaza 33 Office Block A



Air Conditioning System:  
VRF 2-way FSV ME1 series 99 systems  
Indoor Units: 153 units  
Cooling Capacity:  
3,667 kW / 1,042 USRT

**Thailand** Areeya



Air Conditioning System:  
VRF 2-way FSV ME1 series 19 systems  
Single split system 67 systems  
Indoor Units: 85 units  
Cooling Capacity:  
1,519 kW / 432 USRT

**HongKong** King Yip Road



Air Conditioning System:  
VRF FSM LA1 series 136 systems  
Indoor Units: 294 units  
Cooling Capacity:  
2,108 kW / 599 USRT

**England** Soapworks



Air Conditioning System:  
VRF 3-way MF2 77 systems  
with ERV 167 systems

**Spain** PTA Malaga



Air Conditioning System:  
VRF 2-way ME1 series 20 systems  
Indoor Units: 74 units  
Cooling Capacity:  
908 kW / 258 USRT

**Russia** Russian Government Building



Air Conditioning System:  
VRF 2-way ME1 series 42 systems  
Indoor Units: 277 units  
Cooling Capacity:  
2,045 kW / 581 USRT

**New Zealand** IAG Christchurch



Air Conditioning System:  
VRF 3-PIPE FSV MF2 series: 25 systems  
Indoor Units: 132 units  
Cooling Capacity:  
976 kW / 278 USRT

## RETAIL

**Italy** Le Centurie CENTRO COMMERCIALE



Air Conditioning System:  
VRF 3-way ME1 series 18 systems  
Indoor Units: 57 units  
Cooling Capacity:  
656 kW / 186 USRT

**India** Sai Aarav Motors, Mehsana



Air Conditioning System:  
VRF 2-way FSV ME1 series 3 systems  
Indoor Units: 19 units  
Cooling Capacity: 156 kW / 44 USRT

**Russia** Sun City Mall



Air Conditioning System:  
VRF 2-way ME1 series 47 systems,  
VRF 3-way 12 systems  
Indoor Units: 283 units  
Cooling Capacity:  
1,605 kW / 456 USRT

## SCHOOL

**United States** Shippensburg University



Air Conditioning System:  
VRF 3-Way MF1 series 55 systems  
Indoor Units: 530 units  
Cooling Capacity:  
1,498 kW / 426 USRT

## SCHOOL

**Malaysia** Xiamen University



Air Conditioning System:  
VRF FSV Systems 110 systems  
Indoor Units: 1,349 units  
Cloud adapter: CZ-CFUSCC1 17 pcs

**Russia** Technopark of Nobosibirsk Academgorodok



Air Conditioning System:  
VRF 2-way ME1 series 38 systems,  
VRF 3-way 12 systems  
Indoor Units: 234 units  
Cooling Capacity:  
1,487 kW / 422 USRT

## HOSPITAL

**Indonesia** Bekasi Hospital



Air Conditioning System:  
VRF 2-way FSV ME1 series 42 systems  
Indoor Units: 283 units  
Cooling Capacity:  
1,834 kW / 524 USRT

**Indonesia** Persada Hospital



Air Conditioning System:  
VRF 2-way FSV ME1 series 21 systems  
Indoor Units: 116 units  
Cooling Capacity:  
989 kW / 281 USRT

## HOSPITAL

**France** Clinique Dentaire Ablis (Dental Clinic)



Air Conditioning System:  
mini VRF 2-way mini FSV LE1 series 3 systems  
Cooling Capacity:  
36.3 kW / 10.3 USRT

## RESIDENTIAL

**China** Star River Group Luxury Condominium



Air Conditioning System:  
VRF Master series 966 systems  
Indoor Units: 3,948 systems  
Cooling Capacity:  
16,737 kW / 4,755 USRT

**Singapore** Punggol Eco-Town



Air Conditioning System:  
Inverter multi-split room air conditioner  
Indoor Units:  
Wall mounted S series (with Ecovavi)  
Control System: Panasonic HEMS

**Hong Kong** Gloucester Road Project



Air Conditioning System:  
VRF FSM LA1 series 67 systems  
Twenty series 105 systems  
Indoor Units: 255 units  
Cooling Capacity: 1,391 kW / 395 USRT

**Hong Kong** The Green Project



Air Conditioning System:  
VRF FSM LA1 series 239 systems  
Twenty series 538 systems  
Indoor Units: 999 units  
Cooling Capacity:  
6,425 kW / 1,825 USRT

**India** Royal Orchids Eco-Green Homz



Air Conditioning System:  
VRF 2-way FSV ME1 series 22 systems,  
Indoor Units: 139 units  
Cooling Capacity:  
802 kW / 228 USRT

**India** Heera Windfaire



Air Conditioning System:  
VRF 2-way FSV ME1 series 96 systems,  
VRF 3-way 12 systems  
Indoor Units: 479 units  
Cooling Capacity: 2,184kW / 620 USRT

**Panama** Mosaic Building PANAMA PACIFICO



Air Conditioning System:  
VRF 2-way FSV LE1 series 156 systems  
Indoor Units: 357 units  
Cooling Capacity: 2,338 kW / 664 USRT