Panasonic

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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 May 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 Manufacturer is not responsible to a safety due to usage of other refrigerant.

Authorised Dealer

FSV Mini FSV SINGAPORE_MAY_2023

FSV VRF SYSTEMS 2023/2024











Panasonic Singapore

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GAME CHANGER





VRF with Extraordinary Energy-Saving **Performance and Powerful Operation EER 4.7** (U-8ME2R8)

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

It represents a true paradigm shift in air conditioning solutions. Taking quality to the extreme — that's the Panasonic challenge.





Extraordinary In the case of U-8ME2R8

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MINI GAME CHANGER

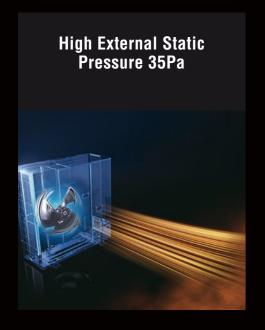




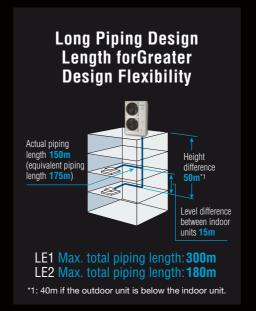
Mini VRF LE Series

Cooling & Heating Type 8/10 HP [LE1] 4/5/6 HP [LE2]

Mini-FSV with Extraordinary Energy-Saving Performance and High External Static Pressure(35Pa)









FSV-EX Advantages

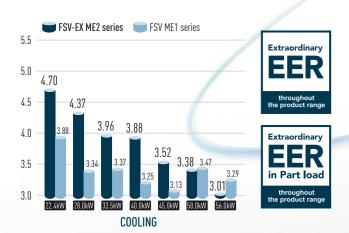


The most efficient, powerful and quiet system in Panasonic's history. There has never been a VRF system like it. It's the story of a true game changer.

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.

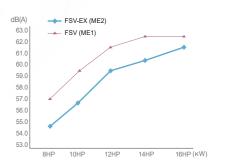
This shows the extraordinary energy-saving performance the FSV-EX is capable of providing.





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

(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.

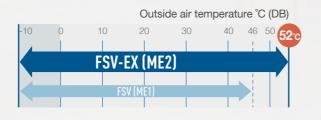


Extended Operation Range Up to 52°C

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%.

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

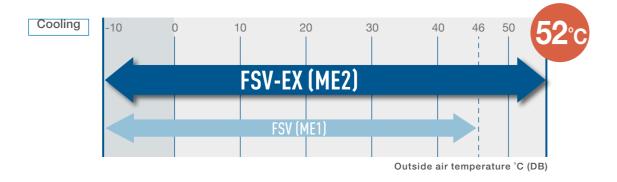
Extended Operation Range up to 52°C

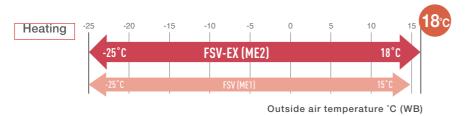


High reliability even under high temperature conditions

Designed to be durable enough to withstand extreme heat, FSV EX ensures reliable cooling operation over an extended operation range up to 52°C.

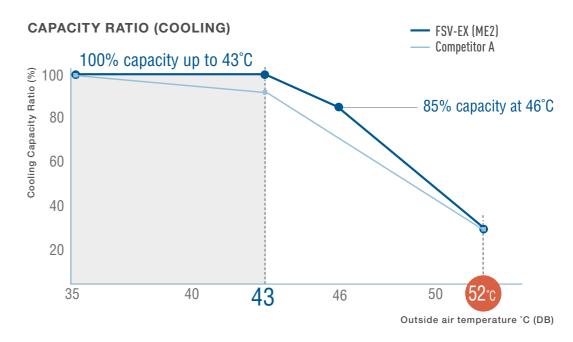
OPERATING RANGE





Full-capacity Operation up to 43°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.



<Test Condition> 12HP model, IU/OU capacity ratio:100%, Indoor Condition:27°C [DB]/19°C [WB] Competitor A spec is from technical data book.



Extraordinary Energy-Saving Performance

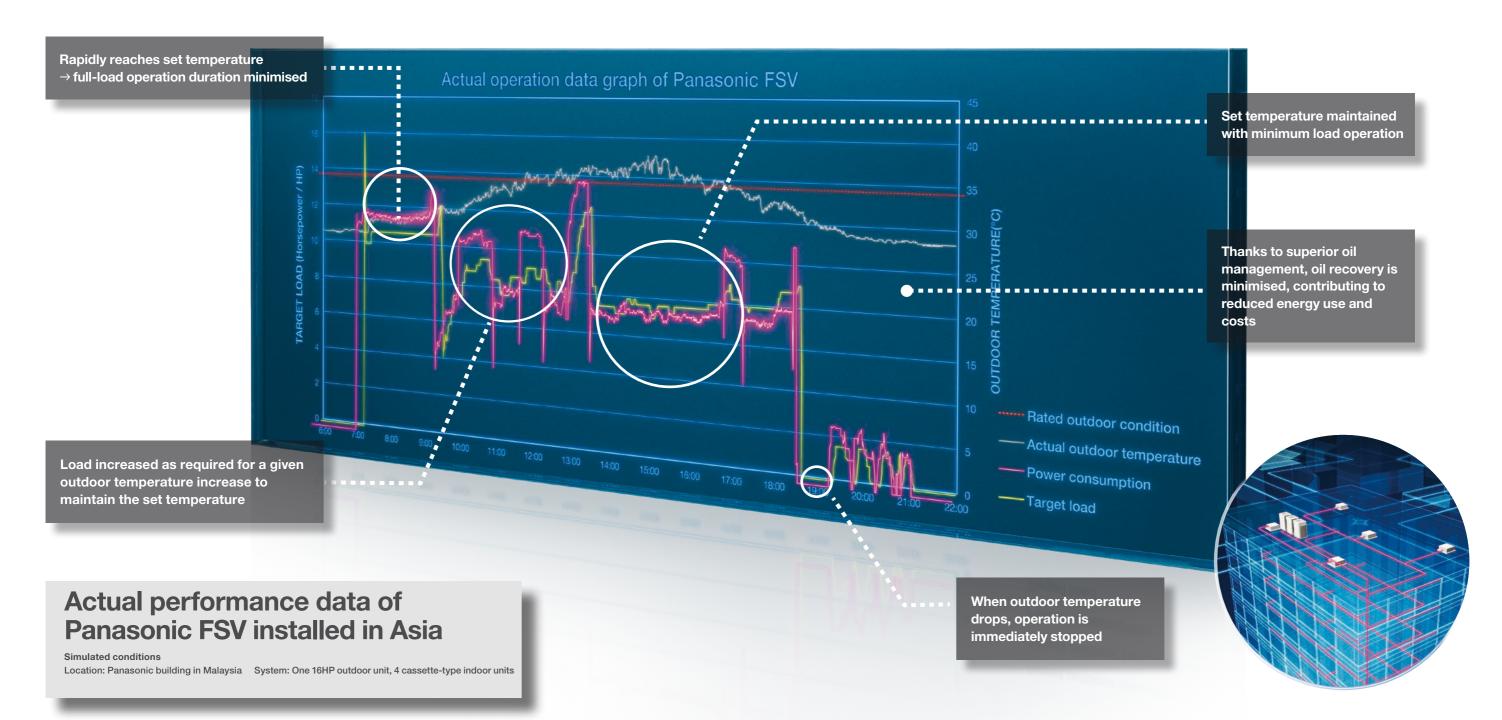


Practical Design for Actual Operation

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

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

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



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 FSV-EX systems, a sensor for detecting oil levels is mounted on the pipe of 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.



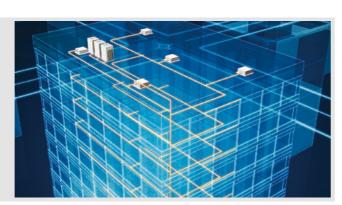
STAGE-2

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



STAGE-3

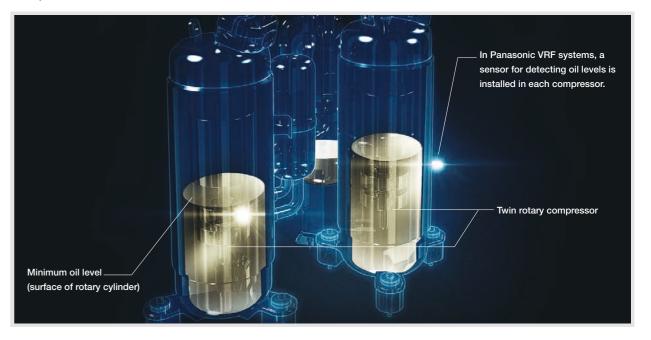
Forced oil recovery is implemented only if oil levels become insufficient in spite of above measures. The Panasonic system's design concept is radically different from conventional oil systems.



Features of 3-stage oil recovery design

Oil sensors mounted on each compressor

Oil sensors mounted on each Panasonic compressor precisely monitor oil levels, eliminating unnecessary oil recovery.



Highly functional oil separator

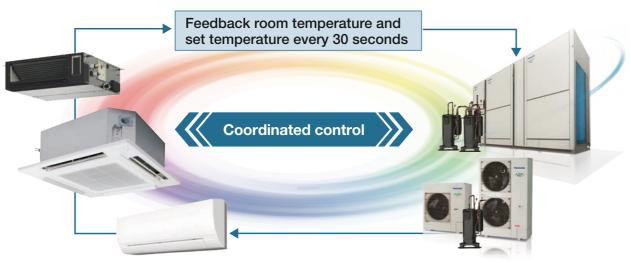
Thanks to extended separate piping, oil recovery efficiency reaches 90%, minimising the oil to be discharged from the compressor.



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.

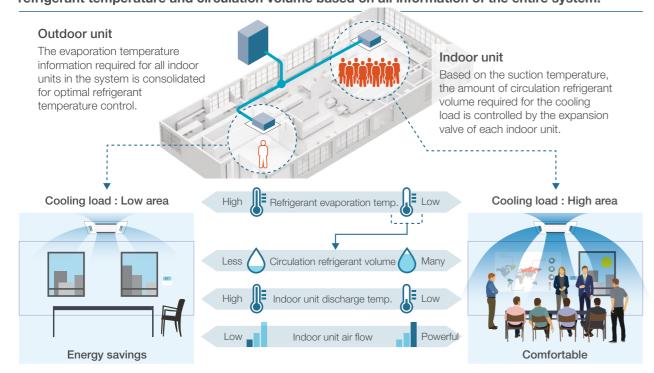


Calculate indoor refrigerant temperature and control the airflow automatically based on the difference between the setting temperature and actual indoor temperature.

Determine system refrigerant temperature and control compressor speed.

* When fan speed is Auto.

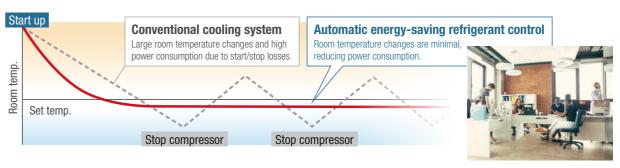
Achieves room-by-room comfort and overall system energy savings by controlling optimal refrigerant temperature and circulation volume based on all information of the entire system.



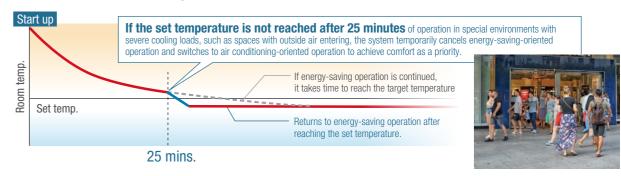
Combination of VET technology and inverter compressor achieves both energy savings and comfort by smoothly controlling the compressor to match the air conditioning load without stopping the compressor for optimum performance.

Image of room temperature change during cooling operation by scene.

1) Normal environment

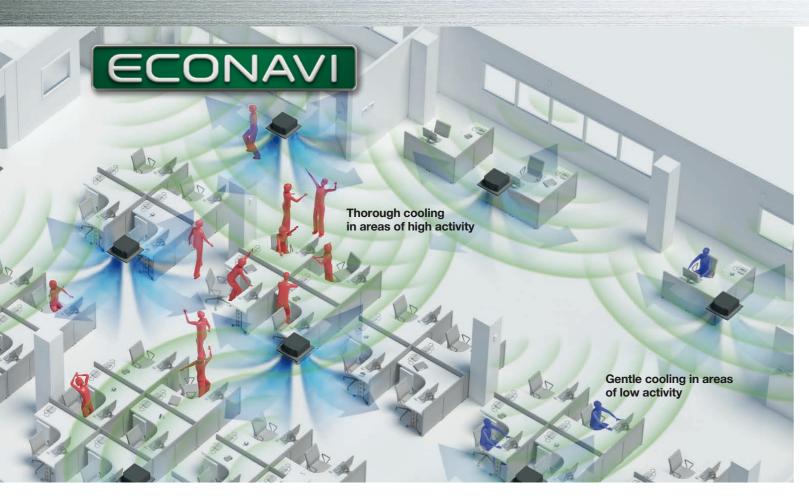


2) Environment with severe cooling load





ECONAVI Detects Inefficiencies and Saves Energy





Detection of the level of activity enables precise power saving.

Presence or absence of people at their desks and the level of activity in the office are detected in real time. Set temperature is automatically adjusted to optimise the lower power consumption.



In the morning Thorough cooling when there is a high level of



In the afternoon Reduced cooling when



At night Automatic Thermo Off depending on conditions at the end of

Human activity and presence detection

Activity	detection

HIGHER ACTIVITY	LOWER ACTIVITY
Cooling Set Temp. +/-0°C	Cooling Set Temp. +1°C
Heating Set Temp1°C	Heating Set Temp. +/-0 °C
Every 2 min	Every 2 min
1 4.444	

大家,

Presence detection

After 20 mins absence	After 3 hours absence							
Cooling Set Temp. +2°C	Cooling Thermo OFF*							
Heating Set Temp2°C	Heating Thermo OFF*							
After 3 hours the setting can change to Stop								

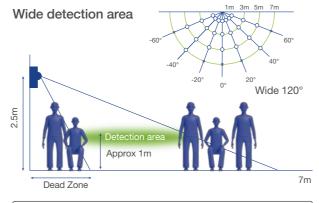
or Temperature Shift



ECONAVI

Remote ECONAVI sensor allows optimum energy operation

Pillars, walls, cabinets and other fittings obstruct the sensor, reducing the area of detection and lowering the energy-saving effect. Taking into consideration blind spots, Panasonic enables the optimum layout for sensors in any office.



A sensor is remotely set to maximise the detection area.

Installation flexibility ready for indoor unit replacement and layout changes

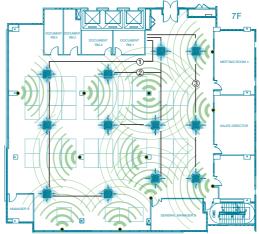


ECONAVI sensor CZ-CENSC1

Panasonic enables use with various types of indoor units

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 VRF Field Test



- Indoor units (12)
- Sensors (12)
- Trial term: 11 Apr 16 May 2014
- Location: Panasonic Malaysia Building■ Office floor: Cooling capacity 112kW
- Testing conditions:
- Remote controller setting temperature 23°C Setting time AM7:00~PM21:00

- Offics us	3CU		
System	Outdoor unit		Indoor unit
		1	S-106MU1E5
1	U-20ME1E8	2	S-106MU1E5
CU-L7-6	U-ZUIVIETEO	3	S-106MU1E5
		4	S-106MU1E5
		5	S-56MU1E5
(2)		6	S-106MU1E5
CU-L7-7	U-20ME1E8	7	S-106MU1E5
00-L1-1		8	S-56MU1E5
		9	S-106MU1E5
(3)		10	S-106MU1E5
CU-L7-7	U-14ME1E8	11	S-56MU1E5
00-L/-/		12	S-106MU1E5







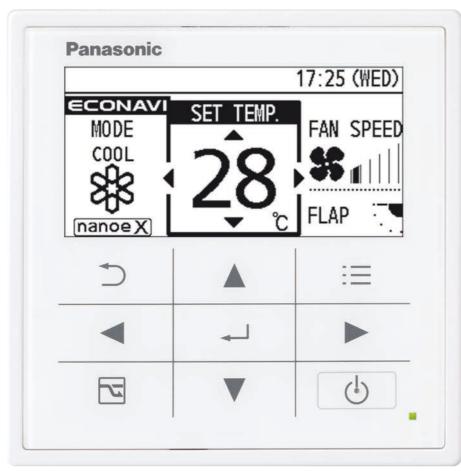
Power consumption



Up to 15% energy saving

Energy-saving effect tested and verified by Field test

High-spec Wired Remote Controller



CZ-RTC5B Actual size

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.

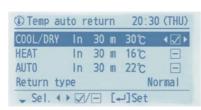


Stylish, Easy-to-use Touch Key Design

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



Multiple control settings to meet a wide range of air conditioning needs



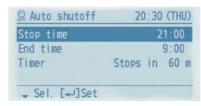
Temperature Auto Return

Even if you change the temperature setting, after a set time it automatically returns to the original temperature setting. You can set temperature auto return time in 10-minute intervals within a period of 4 hours



Temperature Setting Range

You can set the upper and lower temperature limits. Doing this helps reduce power consumption due to over cooling or heating. Setting is possible in the Cooling, Heating and Dry modes.



Auto Shutoff

Air conditioning automatically stops after a set time, so you don't have to worry about forgetting to switch the unit off. Even if you manually switch the unit back on after it has stopped, it automatically switches off again after the set time.

Wide range of controls for extra convenience



Individual Flap Control (Lock individual flap only for 4-way cassette U1 type)

Each of the 4-directional outlets can be selected and locked to provide efficient air distribution that matches the indoor unit layout. Indoor units can be set individually.



Weekly Timer

This lets you specify 8 Start/Stop times and temperature presets for each day of the week.



Service Contact Address

Once you have register service contact details, they are automatically displayed if a problem with the air conditioner occurs. This helps you quickly deal with the situation.

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Convenient Controls



Operation Lock

To prevent operation by anyone other than the supervisor, operation keys can be locked. This prevents unauthorized personnel from changing temperature settings, airflow rate, airflow direction and other settings.



Maintenance Function

Display of outdoor malfunction data, service contact details, filter cleaning remaining time and other data enables at-a-glance verification of maintenance information with the remote controller.



Filter Information

Filter information is indicated for cleaning after a set time of operation period has past. The number of hours can be adjusted.



Repeat OFF Timer

You can stop the operation after a certain period of time each time operation is performed.



Quiet Operation Mode

There's a Quiet mode that reduces the outdoor unit's operating noise. The mode can be switched On/ Off and Start/ End times can be set.



Setting Lists

Information concerning current settings is displayed in the remote controller's LCD for easy confirmation.



Function List

Control Item	((D))	
	"B" model	Non "B" model
Basic instructions	•	•
FLAP	•	•
Individual louver control (Lock individual flap only for 4-way cassette U2 type)	•	•
ON/ OFF timer	•	•
Weekly timer	•	•
Filter information	•	
Outing function	•	•
Quiet operation mode	•	
Energy saving	•	•
Initial settings	•	•
Ventilation	•	•
Temperature auto return	•	•
Temperature setting range	•	•
nergy Saving Auto shutoff	•	•
Schedule peak cut	•	
Repeat off timer	•	•
ECONAVI on/ off	•	
Outdoor unit error data	•	
Service Contact address	•	•
RC setting mode	•	•
Maintenance Test Run	•	•
unction Sensor Information	•	•
Service check	•	•
Simple/ Detailed Settings	•	•
Auto address	•	•

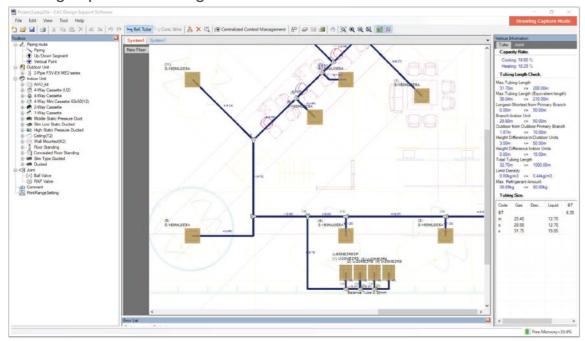
CAC Design Support Software



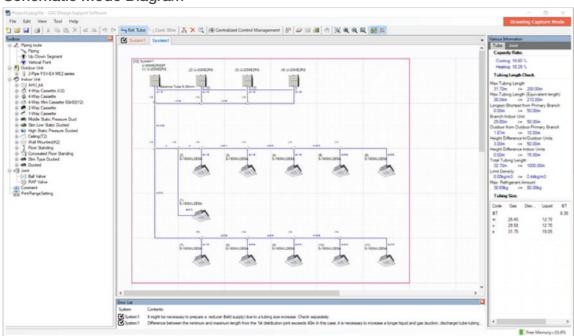


Features the unique Drawing Capture Mode function providing More thorough spec-in and tender quotation support for easier, Faster completion of work.

Drawing Capture Mode Diagram

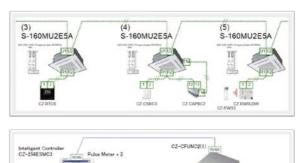


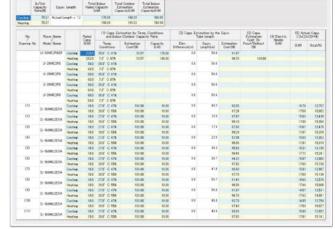
Schematic Mode Diagram



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.







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.





2-WAY FSV-EX ME2 Series

Extraordinary energy-saving performance and powerful operation

Space-saving Combination Model

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

- Wide range of systems from 8HP to 80HP
- Class-leading EER of 4.7 (for 8HP model)
- Industry-leading low noise of 54.0 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
- Suitable for R22 renewal projects





High Efficiency Combination Model

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

- Wide range of systems from 8HP to 64HP
- Class-leading EER of 4.7 (for 8HP model)
- Higher EER than the Space-saving Combination Model e.g., a combination of two 10HP units delivering 20HP reduces compressor load.
- Suitable for R22 renewal projects
 RENEWAL







For small-scale commercial and residential use

Cooling or Heating Type 1/3-phase



- 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: 4.50 EER for 4HP model
- 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.





2-WAY Mini-FSV LE1 Series

For small-scale commercial and residential use

Cooling or Heating Type 3-phase



- · High external static pressure 35Pa
- \bullet 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 RENEWAL



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2-WAY FSV-EX ME2

Participality of the state of t

Remarkable improvement on key components



Extraordinary energy-saving performance

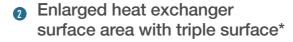
 Multiple large-capacity all inverter compressors (more than 14HP)

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.





FSVEX



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%.





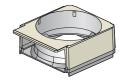


New model [ME2]

Redesigned for smooth and better air discharge

Newly designed curved air discharge bell mouth for better aerodynamics

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



Conventional model [ME1]



New model [ME2]

Large air discharge area with new flush surface top panel

To reduce air resistance, instead of a tubular fan design, a new large flat fan guard design, flush with the top panel, is employed. This design lead to the improvements in air resistance, but also contributed to better appearance designing.



Conventional model [ME1]



New model [ME2]

 $^{^{\}star}$ For 8 & 10HP unit, the heat exchanger is 2 row design.

2-WAY FSV-EX ME2



A large number of indoor units can be connected

Up to 64 indoor units can be connected in a single system for ultimate design flexibility.

*Maximum number of indoor units depends on outdoor unit capacity.



Increased piping length for greater design flexibility

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

(equivalent piping length: 210m)

*Elevation difference of Max. 90m in case of ODU is higher than IDU may be allowed following certain conditions. Please consult with Panasonic sales engineers in case of piping elevation of over 50m is required.

50_m 15 200_m *1: 40 m if the outdoor unit is below the indoor unit.

Max. total piping length:1,000m

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

FSV systems attain maximum indoor unit connection capacity of up to 130 %* 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.

SYSTEM / H	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
MNcIU: 130%	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

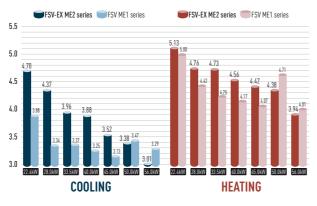
MNcIU: Maximum Number of Connectable Indoor Unit

Note: If more than 100% indoor units are operated with a high load, the units may not perform at the rated capacity. For the details, please consult with an authorised Panasonic dealer

- If the following conditions are satisfied, the effective range is above 130 % up to 200 %.
 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).
 iii) Simultaneous operation is limited to less than 130 % of connectable indoor units.

Excellent energy savings

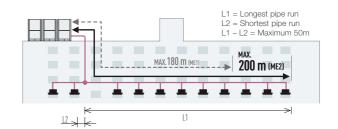
The operation efficiency has been improved using highly efficient R410A refrigerant, new DC inverter compressor, and new heat exchanger design.



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

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

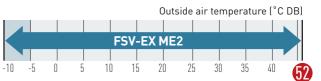
- Up to 64 units can be connected to one system.
- Difference between maximum and minimum pipe runs after first branch can be a maximum of 50m.
- Larger pipe runs can be up to 200m.



Extended operating range

Cooling operation range:

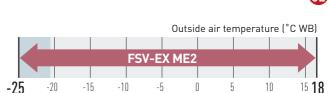
-10°C DB to +52°C DB



Heating operation range:

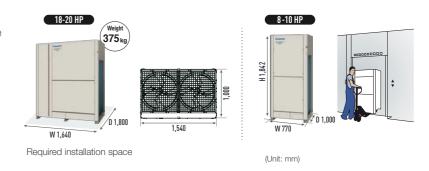
Extended heating operation range enables heating even when the outdoor temperature is as low as -25°C. Using a wired remote control, indoor heating temperature range can be set from 16°C to 30°C*.

* Depending on the type of remote controller.



Compact design

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



Newly designed fan

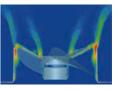
Optimised air flow

Newly designed fan and bell-mouth reduces stress on the fan by dispersing air quickly. Thus, lower air resistance results in lower energy consumption.



Noise reduction

Turbulence (blue) can be suppressed and the unwanted noise can be reduced. Even though a high speed fan is utilised, the noise level is still very



2-WAY FSV-EX ME2

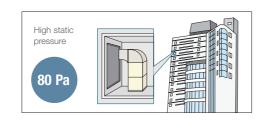


High external static pressure on condensers

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.





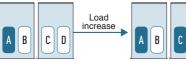


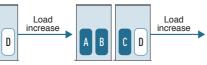
Extended compressor life by uniform compressor operation time

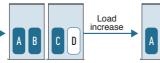
The total run-time of compressors are monitored by a built-in microcomputer, which ensures that operation times of all compressors within the same refrigerant circuit are balanced.

Compressors with histories showing shorter run times are selected first, ensuring equal wear and tear across all units and extended the working life of the system.













- * Depend on accumulated operation time of each compressors
- * Compressor priority has possibility to be changed
- (e.g) Case1: $A \rightarrow C \rightarrow B \rightarrow D$, Case2: $C \rightarrow A \rightarrow D \rightarrow B$, Case3: $A \rightarrow C \rightarrow D \rightarrow B$, Case4: $C \rightarrow A \rightarrow B \rightarrow D$

Automatic backup operation in the case of compressor failure or outdoor unit malfunction

Except for 8, 10 & 12 HP single unit installation

*Backup operation allows uninterrupted cooling or heating to continue whilst waiting for service. Users should contact their authorised service centre as soon as fault occurs.



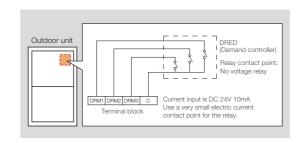
Even if a compressor in a single system fails The other compresso can keep running

Automatic backup operation.

Flexible demand response

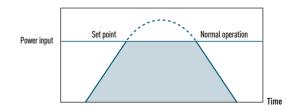
Demand response

Featuring inverter control technology, ME2 series 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 correspond with the local power management for reducing peak power consumption, and to reduce annual power consumption with minimal loss in comfort.



Demand control setting level and unit behavior image

It is possible to limit the operating current of ME2 series system to 3 stages (75%/50%/0%) according to the demand control signal sent from the building.



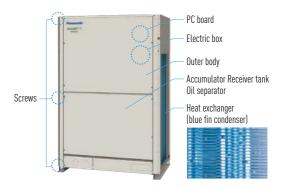
Terminal no. for demand section	Description
DRM3	Approx. 75% of rated current
DRM2	Approx. 50% of rated current
DRM1	Compressor off

Hi-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.





FSV-EX ME2 Series FSV-EX ME2 Series

2-WAY FSV-EX ME2 Series HIGH EFFICIENCY COMBINATION MODEL

				ı								
Appearance												
kW				22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0
Model name				U-8ME2R8	U-10ME2R8	U-12ME2R8	U-14ME2R8	U-16ME2R8	U-8ME2R8 U-10ME2R8	U-10ME2R8 U-10ME2R8	U-10ME2R8 U-12ME2R8	U-12ME2R8 U-12ME2R8
Power supply						1	40	0/415V, 3 phase	- 50Hz		I	ı
	0 "		kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0
D14 .	Cooling		BTU/h	76,500	95,600	114,300	136,500	153,500	170,600	191,100	209,900	232,100
Capacity		k		25.0	31.5	37.5	45.0	50.0	56.0	63.0	69.0	76.5
	Heating		BTU/h	85,300	107,500	128,000	153,600	170,600	191,100	215,000	235,500	261,100
	Cooling		W/W	4.70	4.37	3.96	3.88	3.52	4.55	4.38	4.13	3.93
ER / COP	Heating		W/W	5.13	4.76	4.73	4.56	4.42	4.96	4.77	4.76	4.69
Dimensions	HxWx	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 1,600 x 1,000	1,842 x 1,600 x 1,000	1,842 x 2,010 x 1,000	1,842 x 2,420 x 1,000
Net weight			kg	220	220	270	315	315	440	440	490	540
	Running current		rrent A	7.40 / 7.14	10.2 / 9.80	13.0 / 12.5	16.5 / 15.9	20.1 / 19.4	17.3 / 16.6	20.3 / 19.6	23.1 / 22.3	26.6 / 25.6
	Cooling -	Power inp	out kW	4.77	6.41	8.47	10.3	12.8	11.0	12.8	14.9	17.3
Electrical ratings		Running cur	rrent A	7.56 / 7.29	10.5 / 10.1	12.3 / 11.9	15.8 / 15.2	17.9 / 17.3	17.7 / 17.1	20.9 / 20.2	22.7 / 21.9	25.3 / 24.4
	Heating -	Power inp	out kW	4.87	6.62	7.92	9.86	11.3	11.3	13.2	14.5	16.3
Starting current			А	1	1	1	2	2	2	2	2	2
			m³/h	13,440	13,440	13,920	13,920	13,920	26,880	26,880	27,360	27,840
Air flow rate		_	L/s	3,733	3,733	3,866	3,866	3,866	7,466	7,466	7,600	7,733
Refrigerant amo	unt at ship	ment	kg	11.1	11.1	11.3	11.3	11.3	22.2	22.2	22.4	22.6
xternal static p	ressure		Pa	80	80	80	80	80	80	80	80	80
	Gas pipe	e r	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
Piping connections	Liquid pi	pe r	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)
OF IT IECTIONS	Balance	pipe r	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 temper	ature oper	ating rang	je			Coolin	g: -10°C (DB)~ +	52°C (DB). Heating	g: -25°C (WB)~ +	18°C (WB)		
Sound	Normal r		dB (A)	54.0	56.0	59.0	60.0	61.0	58.5	59.0	61.0	62.0
oressure level	Silent mo	ode (2)	dB (A)	49.0	51.0	54.0	55.0	56.0	53.5	54.0	56.0	57.0
Sound power level	Normal r	node	dB	75.0	77.0	80.0	81.0	82.0	79.5	80.0	82.0	83.0
1												

				7	w.	w.	W	W		W		
Appearance												
HP				140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	
Model name				U-10ME2R8 U-12ME2R8 U-12ME2R8 U-16ME2R8	U-12ME2R8 U-12ME2R8 U-12ME2R8 U-16ME2R8	U-10ME2R8 U-12ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-12ME2R8 U-16ME2R8 U-16ME2R8	U-10ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	
Power supply							400/415V, 3	phase - 50Hz				
	Cooling		kW	140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	
Conneity			BTU/h	477,800	494,900	515,400	532,400	552,900	573,400	593,600	614,300	
Capacity			kW	155.0	160.0	169.0	175.0	182.0	189.0	195.0	201.0	
	Heating		BTU/h	529,000	546,100	576,800	597,300	621,200	645,100	665,500	686,000	
EER / COP	Cooling		W/W	3.87	3.82	3.75	3.71	3.65	3.60	3.60	3.52	
EER / COP	Heating		W/W	4.65	4.66	4.56	4.56	4.47	4.47	4.45	4.42	
Dimensions	H x W x D mr		mm	1,842 x 4,490 x 1,000	1,842 x 4,900 x 1,000	1,842 x 4,490 x 1,000	1,842 x 4,900 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	1,842 x 4,900 x 1,000	
Net weight			kg	1,075	1,125	1,120	1,170	1,165	1,215	1,260	1,260	
	Running cu		ent A	56.2 / 54.2	59.0 / 56.8	63.2 / 60.9	65.3 / 63.0	69.7 / 67.1	73.3 / 70.6	75.8 / 73.0	80.3 / 77.4	
Electrical ratings	Cooling	Power inpu	ıt kW	36.2	38.0	40.3	42.1	44.4	46.7	48.3	51.2	
Electrical ratings	Hooting	Running curre	ent A	52.2 / 50.4	53.8 / 51.9	58.8 / 56.7	60.2 / 58.1	64.6 / 62.2	67.1 / 64.7	69.5 / 67.0	72.2 / 69.6	
	Heating	Power inpu	ıt kW	33.3	34.3	37.1	38.4	40.7	42.3	43.8	45.5	
Starting current			Α	5	5	6	6	7	7	8	8	
Air flow rate			m³/h	55,200	55,680	55,200	55,680	55,200	55,680	55,680	55,680	
All llow rate			L/s	15,333	15,466	15,333	15,466	15,333	15,466	15,466	15,466	
Refrigerant amou	ınt at shi	pment	kg	45.0	45.2	45.0	45.2	45.0	45.2	45.2	45.2	
External static pr	essure		Pa	80	80	80	80	80	80	80	80	
-	Gas pip	e m	m (inches)	Ø38.10 (Ø1-1/2)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)						
Piping connections	Liquid p	pipe m	m (inches)	Ø19.05 (Ø3/4)								
	Balance	pipe m	m (inches)	Ø6.35 (Ø1/4)								
Ambient tempera	ature ope	rating range				Cooling: -10°C (DB)~ +52°C (DB).	Heating: -25°C (WB)~ +18°C (WB)		
Sound	Normal	mode	dB (A)	65.5	66.0	66.0	66.5	66.5	67.0	67.0	67.0	
pressure level	Silent m	node (2)	dB (A)	60.5	61.0	61.0	61.5	61.5	62.0	62.0	62.0	
Sound power level	Normal	mode	dB	86.5	87.0	87.0	87.5	87.5	88.0	88.0	88.0	



73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
U-10ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8	U-10ME2R8 U-12ME2R8 U-12ME2R8	U-12ME2R8 U-12ME2R8 U-12ME2R8	U-10ME2R8 U-12ME2R8 U-16ME2R8	U-12ME2R8 U-12ME2R8 U-16ME2R8	U-10ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-16ME2R8
					400/415V, 3	phase - 50Hz					
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
249,100	267,900	290,100	307,200	327,600	344,700	365,200	385,700	402,700	423,200	443,700	460,800
81.5	87.5	95.0	100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
278,200	298,600	324,200	341,300	368,600	385,700	406,100	433,400	450,500	471,000	494,900	511,900
3.80	3.69	3.68	3.52	4.05	3.95	3.84	3.75	3.69	3.62	3.62	3.52
4.55	4.56	4.48	4.42	4.72	4.73	4.61	4.57	4.49	4.50	4.46	4.42
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 2,420 x 1,000	1,842 x 3,250 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,250 x 1,000	1,842 x 3,660 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 3,660 x 1,000
535	585	630	630	760	810	805	855	850	900	945	945
30.1 / 29.0	33.1 / 31.9	36.6 / 35.3	40.2 / 38.7	36.8 / 35.5	39.3 / 37.9	43.8 / 42.2	46.7 / 45.0	50.2 / 48.4	53.2 / 51.3	56.9 / 54.9	60.2 / 58.1
19.2	21.3	23.1	25.6	23.7	25.6	27.9	30.1	32.0	34.3	35.9	38.4
28.4 / 27.4	30.1 / 29.0	33.6 / 32.4	35.8 / 34.6	35.9 / 34.6	37.1 / 35.8	40.5 / 39.0	43.6 / 42.0	46.6 / 44.9	48.2 / 46.4	51.5 / 49.7	53.8 / 51.8
17.9	19.2	21.2	22.6	22.9	23.9	25.8	27.8	29.4	30.7	32.5	33.9
3	3	4	4	3	3	4	4	5	5	6	6
27,360	27,840	27,840	27,840	41,280	41,760	41,280	41,760	41,280	41,760	41,760	41,760
7,600	7,733	7,733	7,733	11,466	11,600	11,466	11,600	11,466	11,600	11,600	11,600
22.4	22.6	22.6	22.6	33.7	33.9	33.7	33.9	33.7	33.9	33.9	33.9
80	80	80	80	80	80	80	80	80	80	80	80
Ø31.75 (Ø1-1/4)	Ø38.10 (Ø1-1/2)	Ø38.10 (Ø1-1/2									
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)				
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)				
				Cooling: -10°C (I	DB)~ +52°C (DB).	Heating: -25°C (WB)~ +18°C (WB))			
62.5	63.5	63.5	64.0	63.0	64.0	64.0	64.5	65.0	65.5	65.5	66.0
57.5	58.5	58.5	59.0	58.0	59.0	59.0	59.5	60.0	60.5	60.5	61.0
83.5	84.5	84.5	85.0	84.0	85.0	85.0	85.5	86.0	86.5	86.5	87.0

OLODAL	Rated conditions:	Cooling	Heating
GLOBAL REMARKS	Indoor air temperature	27°C DB / 19°C WB	20°C DB
TILIVIALIKO	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 the same specifications.

ENERGY EFFICIENCY RATING









E2R8 U-10ME2R8

U-12ME2R8

U-14ME2R8

2R8 U-16MI

22.4 / 28.0 kW

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

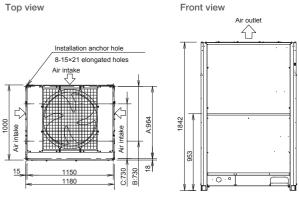
unit: mm

33.5 / 40.0 / 45.0 kW

U-8ME2R8

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



32

unit: mm

FSV-EX ME2 Series FSV-EX ME2 Series

2-WAY FSV-EX ME2 Series SPACE SAVING COMBINATION MODEL

Appearance							7							
kW				22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0		
Model name				U-8ME2R8	U-10ME2R8	U-12ME2R8	U-14ME2R8	U-16ME2R8	U-18ME2R8	U-20ME2R8	U-10ME2R8 U-12ME2R8	U-12ME2R8 U-12ME2R8		
Power supply				400/415V, 3 phase - 50Hz										
	Caalina		kW	22.4	28.0	33.5	40.0	45.0	50.0	56.0	61.5	68.0		
Canacit	Cooling		BTU/h	76,500	95,600	114,300	136,500	153,600	170,600	191,100	209,900	232,100		
Capacity	Lleating		kW	25.0	31.5	37.5	45.0	50.0	56.0	63.0	69.0	76.5		
	Heating		BTU/h	85,300	107,500	128,000	153,600	170,600	191,100	215,000	235,500	261,100		
EER / COP	Cooling		W/W	4.70	4.37	3.96	3.88	3.52	3.38	3.01	4.13	3.93		
EER / COP	Heating		W/W	5.13	4.76	4.73	4.56	4.42	4.38	3.94	4.76	4.69		
Dimensions	HxWx	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	220	220	270	315	315	375	375	490	540		
		Running curre	nt A	7.40 / 7.14	10.2 / 9.80	13.0 / 12.5	16.5 / 15.9	20.1 / 19.4	23.0 / 22.1	28.3 / 27.2	23.1 / 22.3	26.6 / 25.6		
E	Cooling -	Power inpu	t kW	4.77	6.41	8.47	10.3	12.8	14.8	18.6	14.9	17.3		
Electrical ratings		Running curre	nt A	7.56 / 7.29	10.5 / 10.1	12.3 / 11.9	15.8 / 15.2	17.9 / 17.3	20.1 / 19.4	24.6 / 23.7	22.7 / 21.9	25.3 / 24.4		
	Heating -	Power inpu	t kW	4.87	6.62	7.92	9.86	11.3	12.8	16.0	14.5	16.3		
Starting current			А	1	1	1	2	2	2	2	2	2		
A: 0			m³/h	13,440	13,440	13,920	13,920	13,920	24,300	24,300	27,360	27,840		
Air flow rate			L/s	3,733	3,733	3,866	3,866	3,866	6,750	6,750	7,600	7,733		
Refrigerant amou	ınt at ship	ment	kg	11.1	11.1	11.3	11.3	11.3	11.0	11.0	22.4	22.6		
External static pr	essure		Pa	80	80	80	80	80	80	80	80	80		
	Gas pipe	e mr	m (inches)	Ø19.05 (Ø3/4)	Ø22.22 (Ø7/8)	Ø25.40 (Ø1)	Ø25.40 (Ø1)	Ø28.58 (Ø1-1/8)						
Piping connections	Liquid pi	ipe mr	m (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)		
COLLIGECTIONS	Balance	pipe mr	m (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 tempera	ature oper	ating range				Cooling	g: -10°C (DB)~ +5	i2°C (DB). Heating	j: -25°C (WB)~ +1	18°C (WB)	-			
Sound	Normal r	mode	dB (A)	54.0	56.0	59.0	60.0	61.0	59.0	60.0	61.0	62.0		
pressure level	Silent me	ode (2)	dB (A)	49.0	51.0	54.0	55.0	56.0	54.0	55.0	56.0	57.0		
Sound power level	Normal r	mode	dB	75.0	77.0	80.0	81.0	82.0	80.0	81.0	82.0	83.0		

Appearance				H							
kW			140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	185.0
Model name			U-14ME2R8 U-16ME2R8 U-20ME2R8	U-16ME2R8 U-16ME2R8 U-20ME2R8	U-14ME2R8 U-20ME2R8 U-20ME2R8	U-16ME2R8 U-20ME2R8 U-20ME2R8	U-18ME2R8 U-20ME2R8 U-20ME2R8	U-20ME2R8 U-20ME2R8 U-20ME2R8	U-14ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-16ME2R8 U-16ME2R8	U-10ME2R8 U-16ME2R8 U-20ME2R8 U-20ME2R8
Power supply					400/4	415V, 3 phase - 5	50Hz				
	O lin -	kW	140.0	145.0	151.0	156.0	162.0	168.0	174.0	180.0	185.0
Canacity	Cooling	BTU/h	477,800	494,900	515,400	532,400	552,900	573,400	593,900	614,300	631,400
Capacity	I I antina	kW	155.0	160.0	169.0	175.0	182.0	189.0	195.0	201.0	207.0
	Heating	BTU/h	529,000	546,100	576,800	597,300	621,200	645,100	665,500	686,000	706,500
EER / COP	Cooling	W/W	3.39	3.32	3.21	3.15	3.12	3.01	3.60	3.52	3.28
EER / COP	Heating	W/W	4.29	4.27	4.11	4.08	4.06	3.94	4.45	4.42	4.16
Dimensions	HxWxD	mm	1,842 x 4,020 x 1,000	1,842 x 4,020 x 1,000	1,842 x 4,380 x 1,000	1,842 x 4,380 x 1,000	1,842 x 4,740 x 1,000	1,842 x 4,740 x 1,000	1,842 x 4,900 x 1,000	1,842 x 4,900 x 1,000	1,842 x 5,210 x 1,000
Net weight		kg	1,005	1,005	1,065	1,065	1,125	1,125	1,260	1,260	1,285
	Running	current A	64.1 / 61.8	67.8 / 65.4	72.2 / 69.6	76.0 / 73.3	79.8 / 77.0	84.8 / 81.7	75.8 / 73.0	80.3 / 77.4	86.6 / 83.5
	Cooling Power	input kW	41.3	43.7	47.0	49.5	52.0	55.8	48.3	51.2	56.4
Electrical ratings	Runnina	current A	56.6 / 54.6	58.8 / 56.7	63.8 / 61.5	66.6 / 64.2	69.5 / 67.0	73.7 / 71.0	69.5 / 67.0	72.2 / 69.6	77.1 / 74.3
	Heating Power	input kW	36.1	37.5	41.1	42.9	44.8	48.0	43.8	45.5	49.7
Starting current		А	6	6	6	6	6	6	8	8	7
A : 41		m³/h	52,140	52,140	62,520	62,520	72,900	72,900	55,680	55,680	75,960
Air flow rate		L/s	14,483	14,483	17,366	17,366	20,250	20,250	15,466	15,466	21,100
Refrigerant amou	unt at shipment	kg	33.6	33.6	33.3	33.3	33.0	33.0	45.2	45.2	44.4
External static pr	ressure	Pa	80	80	80	80	80	80	80	80	80
	Gas pipe	mm (inches)	Ø38.10 (Ø1-1/2)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)					
Piping connections	Liquid pipe	mm (inches)	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)						
Ambient tempera	ature operating ra	nge		Cooling: -1	0°C (DB)~ +52°C	(DB). Heating: -2	5°C (WB)~ +18°C	(WB)			
Sound	Normal mode	dB (A)	65.5	65.5	65.0	65.5	64.5	65.0	67.0	67.0	66.0
pressure level	Silent mode (2)	dB (A)	60.5	60.5	60.0	60.5	59.5	60.0	62.0	62.0	61.0
Sound power level	Normal mode	dB	86.5	86.5	86.0	86.5	85.5	86.0	88.0	88.0	87.0



				7				F			
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
U-10ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8	U-14ME2R8 U-20ME2R8	U-16ME2R8 U-20ME2R8	U-18ME2R8 U-20ME2R8	U-20ME2R8 U-20ME2R8	U-10ME2R8 U-16ME2R8 U-16ME2R8	U-12ME2R8 U-16ME2R8 U-16ME2R8	U-14ME2R8 U-16ME2R8 U-16ME2R8	U-16ME2R8 U-16ME2R8 U-16ME2R8
					400/415V, 3	phase - 50Hz					
73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
249,100	267,900	290,100	307,200	327,600	344,700	365,200	385,700	402,700	423,200	443,700	460,800
81.5	87.5	95.0	100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
278,200	298,600	324,200	341,300	368,600	385,700	406,100	433,400	450,500	471,000	494,900	511,900
3.80	3.69	3.68	3.52	3.32	3.22	3.16	3.00	3.69	3.62	3.62	3.52
4.55	4.56	4.48	4.42	4.17	4.14	4.13	3.92	4.49	4.50	4.46	4.42
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 2,420 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 3,250 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,660 x 1,000	1,842 x 3,660 x 1,000
535	585	630	630	690	690	750	750	850	900	945	945
30.1 / 29.0	33.1 / 31.9	36.6 / 35.3	40.2 / 38.7	44.9 / 43.2	48.2 / 46.5	52.1 / 50.2	57.3 / 55.2	50.2 / 48.4	53.2 / 51.3	56.9 / 54.9	60.2 / 58.1
19.2	21.3	23.1	25.6	28.9	31.4	33.9	37.7	32.0	34.3	35.9	38.4
28.4 / 27.4	30.1 / 29.0	33.6 / 32.4	35.8 / 34.6	40.6 / 39.2	42.4 / 40.8	44.7 / 43.1	49.8 / 48.0	46.6 / 44.9	48.2 / 46.4	51.5 / 49.7	53.8 / 51.8
17.9	19.2	21.2	22.6	25.9	27.3	28.8	32.4	29.4	30.7	32.5	33.9
3	3	4	4	4	4	4	4	5	5	6	6
27,360	27,840	27,840	27,840	38,220	38,220	48,600	48,600	41,280	41,760	41,760	41,760
7,600	7,733	7,733	7,733	10,616	10,616	13,500	13,500	11,466	11,600	11,600	11,600
22.4	22.6	22.6	22.6	22.3	22.3	22.0	22.0	33.7	33.9	33.9	33.9
80	80	80	80	80	80	80	80	80	80	80	80
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)				
Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)	Ø19.05 (Ø3/4)								
Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)								
				Cooling: -10°C (DB)~ +52°C (DB).	Heating: -25°C (WB)~ +18°C (WB)			
62.5	63.5	63.5	64.0	63.0	63.5	62.5	63.0	65.0	65.5	65.5	66.0
57.5	58.5	58.5	59.0	58.0	58.5	57.5	58.0	60.0	60.5	60.5	61.0
83.5	84.5	84.5	85.0	84.0	84.5	83.5	84.0	86.0	86.5	86.5	87.0

				H		
190.0	196.0	202.0	208.0	213.0	219.0	224.0
U-12ME2R8 U-16ME2R8 U-20ME2R8 U-20ME2R8	U-10ME2R8 U-20ME2R8 U-20ME2R8 U-20ME2R8	U-16ME2R8 U-16ME2R8 U-20ME2R8 U-20ME2R8	U-16ME2R8 U-18ME2R8 U-20ME2R8 U-20ME2R8	U-16ME2R8 U-20ME2R8 U-20ME2R8 U-20ME2R8	U-18ME2R8 U-20ME2R8 U-20ME2R8 U-20ME2R8	U-20ME2R8 U-20ME2R8 U-20ME2R8 U-20ME2R8
400/415V, 3 phase - 50Hz						
190.0	196.0	202.0	208.0	213.0	219.0	224.0
648 500	668 000	680 400	700 000	727 000	747 400	764 500

		400/415V, 3 ph	nase - 50Hz			
190.0	196.0	202.0	208.0	213.0	219.0	224.0
648,500	668,900	689,400	709,900	727,000	747,400	764,500
213.0	219.0	226.0	233.0	239.0	245.0	252.0
727,000	747,400	771,300	795,200	815,700	836,200	860,100
3.26	3.15	3.22	3.19	3.10	3.08	3.01
4.18	4.05	4.14	4.12	4.03	4.03	3.94
1,842 x 5,620 x 1,000	1,842 x 5,570 x 1,000	1,842 x 5,620 x 1,000	1,842 x 5,980 x 1,000	1,842 x 5,980 x 1,000	1,842 x 6,340 x 1,000	1,842 x 6,340 x 1,000
1,335	1,345	1,380	1,440	1,440	1,500	1,500
89.4 / 86.1	95.5 / 92.1	96.4 / 92.9	100.3 / 96.6	105.3 / 101.5	108.0 / 104.1	113.0 / 109.0
58.2	62.2	62.8	65.3	68.6	71.1	74.4
79.2 / 76.3	83.1 / 80.1	84.7 / 81.7	87.7 / 84.5	92.0 / 88.7	93.4 / 90.0	98.3 / 94.7
51.0	54.1	54.6	56.5	59.3	60.8	64.0
7	7	8	8	8	8	8
76,440	86,340	76,440	86,820	86,820	97,200	97,200
21,233	23,983	21,233	24,116	24,116	27,000	27,000
44.6	44.1	44.6	44.3	44.3	44.0	44.0
80	80	80	80	80	80	80
Ø41.28 (Ø1-5/8)	Ø41.28 (Ø1-5/8)	Ø44.45 (Ø1-3/4)				
Ø22.22 (Ø7/8)						
Ø6.35 (Ø1/4)						
	Cooling: -10°C ([DB)~ +52°C (DB).	Heating: -25°C (\	NB)~ +18°C (WB)		
66.5	65.5	66.5	66.5	66.5	66.0	66.0
61.5	60.5	61.5	61.5	61.5	61.0	61.0
87.5	86.5	87.5	87.5	87.5	87.0	87.0

GLOBALREMARKS

GLOD/ ILI ILIVI/ II II IO		
Rated conditions:	Cooling	Heating
Indoor air temperature	27°C DB / 19°C WB	20°C DB
Outdoor air temperature	35℃ DB	7°C DB / 6°C WB

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

ENERGY EFFICIENCY RATING







OIVIEZNO U

14647 30982×Wh

15422 361444Wh

U-16ME2R8 U-18ME2R8

U-20ME2R8

34 35

FSV-EX ME2 Series FSV-EX ME2 Series

2-WAY FSV-EX ME2 Series SPACE SAVING COMBINATION MODEL



22.4 / 28.0kW

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 pipe forward B: (Installation hole pitch) For removing the pipe downward

22.4 / 28.0 / 33.5 / 40.0 / 45.0kW

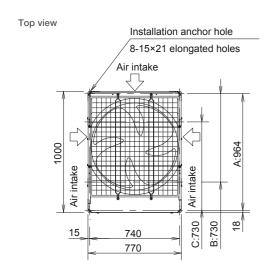
According to the installation site, you may choose the setting position in the depth direction of the anchor bolt from A, B or C.

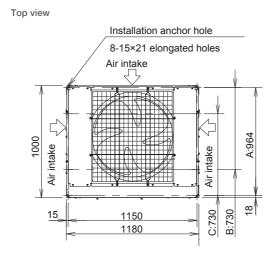
- A: (Installation hole pitch) For removing pipe forward B: (Installation hole pitch) For removing the pipe downward

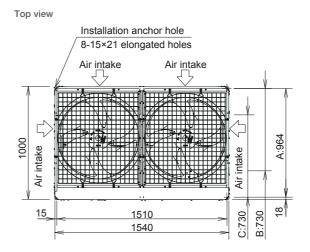
50.0 / 56.0kW

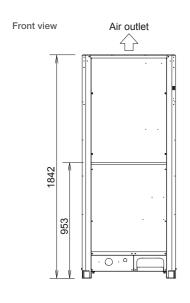
According to the installation site, you may choose the setting position in the depth direction of the anchor bolt from A, B or C.

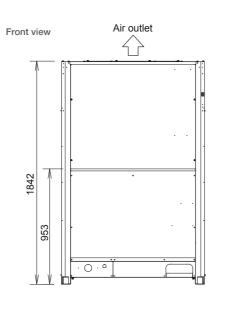
- A: (Installation hole pitch) For removing pipe forward B: (Installation hole pitch) For removing the pipe downward

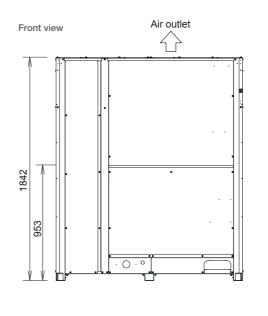








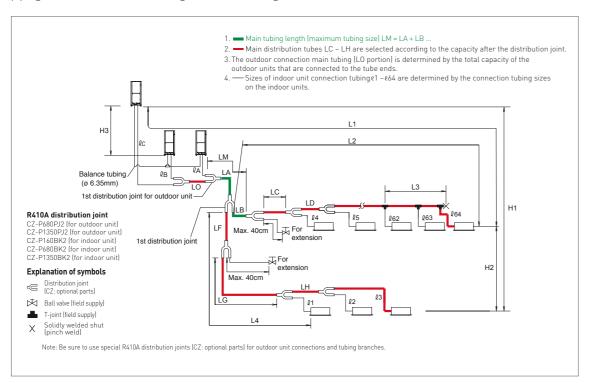




FSV-EX ME2 Series FSV-EX ME2 Series

Piping Design

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



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

Items	Mark Contents			Length (m)
	14	May tuleing langth	Actual length	≤200*2
	L1	Max. tubing length	Equivalent length	≤210*2
	Δ L (L2-L4)	Difference between max. length and min. len	ngth from the 1st distribution joint	≤50*5
Allowable tubing length	LM	Max. length of main tubing (at maximum siz * Even after 1st distribution joint, LM is allowed if at r	— *3	
	l1, l2~ l64	Max. length of each distribution tube	≤50*7	
	L1+ l1+ l2~ l63+ lA+ lB+LF+LG+LH	Total max. tubing length including length of	≤1000	
	ℓA, ℓB+LO, ℓC+LO	Maximum tubing length from outdoor's 1st	≤10	
	H1	When outdoor unit is installed higher than in	≤50	
Allowable elevation		When outdoor unit is installed lower than inc	≤40	
difference	H2	Max. difference between indoor units	≤15*6	
	НЗ	Max. difference between outdoor units	≤4	
Allowable length of joint tubing	L3	T-joint tubing (field-supply); Max. tubing leng welded-shut end point	≤2	

L = Length, H = Height

- 1: The outdoor connection main tubing (LO portion) is determined by the total capacity of the outdoor units that are connected to the tube ends.

 2: If the longest tubing length (L1) exceeds 90 m (equivalent length), increase the sizes of the main tubes (LM) by 1 rank for gas tubes and liquid tubes. Use a field supply reducer. Select the tube size from the table of main tubing sizes (Table 3) and from the table of refrigerant tubing sizes (Table 8) on the
- 3: If the longest main tubing length (LM) exceeds 50 m, increase the main tubing size at the portion before 50 m by 1 rank for the gas tubes. Use a field supply reducer. Determine the length less than the limitation of allowable maximum tubing length. For the portion that exceeds 50 m, set based on the main tubing size (LA) listed in Table 3.

 4: If the size of the existing tubing is already larger than the standard tubing size, it is not necessary to further increase the size.

 * If the existing tubing is used, and the amount of on-site refrigerant charge exceeds the value listed below, then change the size of the tubing to reduce the amount of

- refrigerant.

 Total amount of refrigerant for the system with 1 outdoor unit: 50 kg
 Total amount of refrigerant for the system with 2 outdoor units: 80 kg
 Total amount of refrigerant for the system with 3 outdoor units in 4 outdoor units: 105 kg
 S: When the tubing length exceeds 40 m, increase a longer liquid or gas tubing by 1 rank. Refer to the Technical Data for the details.

 6: If the total distribution tubing length exceeds 500m, maximum allowable elevation difference (H2) between the indoor units is calculated by the following formula. Make sure the indoor units actual elevation difference should fall within the figure calculated as follows. Unit of account (meter): 15 x (2 - total tubing length(m) + 500)

 7: If any of the tubing length exceeds 30m, increase the size of the liquid and gas tubes by 1 rank.

Necessary amount of additional refrigerant charge per outdoor unit

U-8ME2R8(E)	U-10ME2R8(E)	U-12ME2R8(E)	U-14ME2R8(E)	U-16ME2R8(E)	U-18ME2R8(E)	U-20ME2R8(E)
-	-	4.0 kg	4.0 kg	4.0 kg	5.5 kg	5.5 kg

System limitations

Max. No. allowable connected outdoor units	4 *2		
Max. capacity allowable connected outdoor units	224 kW (80 HP)		
Max. connectable indoor units	64 *1		
Max. allowable indoor/outdoor capacity ratio	50-130 % *3		

- *1: In the case of 38 HP or smaller units, the number is limited by the total capacity of the connected indoor units.
- *2: Up to 4 units can be connected if the system has been extended.
 *3: If the following conditions are satisfied, the effective range is above 130 % and below 200 %.
- 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).
- iii) Simultaneous operation is limited to less than 130 % of connectable indoor units.

Additional refrigerant charge

Liquid tubing size mm (inches)	Amount of refrigerant charge/m (g/m)
ø6.35 (ø1/4)	26
ø9.52 (ø3/8)	56
ø12.7 (ø1/2)	128
ø15.88 (ø5/8)	185
ø19.05 (ø3/4)	259
ø22.22 (ø7/8)	366
ø25.4 (ø1)	490

Refrigerant piping (Existing piping can be used.)

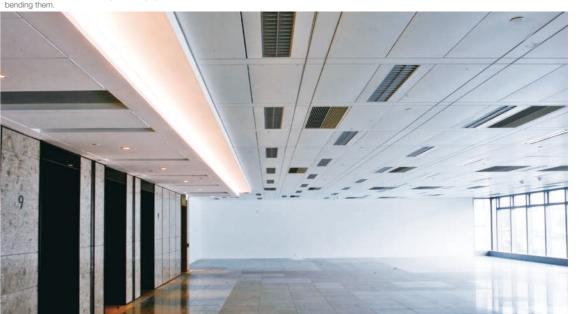
High Efficiency Combination Model

Piping size (mm)						
Material Temper	- O	Material Temper - 1/2 H, H				
ø6.35	t 0.8	ø22.22	t 1.0			
ø9.52	t 0.8	ø25.4	t 1.0			
ø12.7	t 0.8	ø28.58	t 1.0			
ø15.88	t 1.0	ø31.75	t 1.1			
ø19.05	t 1.2	ø38.1	over t 1.35			
		ø41.28	over t 1.45			
		ø44.45	over t1.55			

Space Saving Combination Model

Piping size (mm)							
Material Tempe	r - O	Material Temper	- 1/2 H, H				
ø6.35	t 0.8	ø22.22	t 1.0				
ø9.52	t 0.8	ø25.4	t 1.0				
ø12.7	t 0.8	ø28.58	t 1.0				
ø15.88	t 1.0	ø31.75	t 1.1				
ø19.05	t 1.2	ø38.1	over t 1.35				
		ø41.28	over t 1.45				
		ø44.45	over t1.55				
		ø50.8	over t1.8				

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



Refrigerant Branch Pipes (optional accessories) for 2-WAY ME2 Series

Optional Distribution Joint Kits

See the installation instructions packaged with the distribution joint kit for the installation procedure.

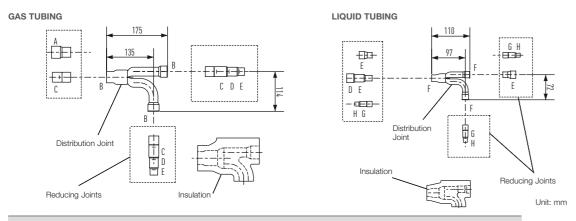
* In case the total capacity of indoor units connected after distribution exceeds the total capacity of the outdoor units, select the distribution tubing size for the total capacity of the outdoor units.

Model name	Cooling capacity after distribution	Remarks
1. CZ-P680PJ2	68.0 kW or less	For outdoor unit
2. CZ-P1350PJ2	more than 68.0 kW	For outdoor unit
3. CZ-P160BK2	22.4 kW or less *	For indoor unit
4. CZ-P680BK2	68.0 kW or less *	For indoor unit
5. CZ-P1350BK2	more than 68.0 kW *	For indoor unit

Tubing size (with thermal insulation)

1. CZ-P680PJ2

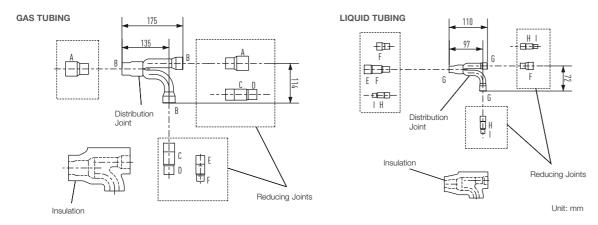
For outdoor unit (Capacity after distribution joint is 68.0 kW or less.)



Size of con	Size of connection point on each part (Shown are inside diameters of tubing)										
Size		Part A	Part B	Part C	Part D	Part E	Part F	Part G	Part H		
Dimension	(mm)	ø31.75	ø28.58	ø25.40	ø22.22	ø19.05	ø15.88	ø12.70	ø9.52		
	(inches)	Ø1-1/4	Ø1-1/8	Ø1	Ø7/8	Ø3/4	Ø5/8	Ø1/2	Ø3/8		

2. CZ-P1350PJ2

For outdoor unit (Capacity after distribution joint is more than 68.0 kW.)

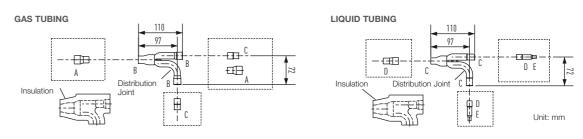


Size of connection point on each part (Shown are inside diameters of tubing)										
Size		Part A	Part B	Part C	Part D	Part E	Part F	Part G	Part H	Part I
Dimension -	(mm)	ø38.10	ø31.75	ø28.58	ø25.40	ø22.22	ø19.05	ø15.88	ø12.70	ø9.52
	(inches)	Ø1-1/2	Ø1-1/4	Ø1-1/8	Ø1	Ø7/8	Ø3/4	Ø5/8	Ø1/2	Ø3/8

 $^{^{\}star}$ If the tube diameter is more than ø38.1, use field-supply reducer.

3. CZ-P160BK2

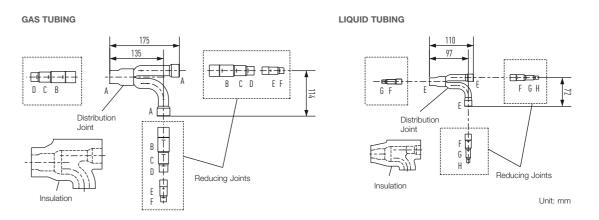
Use: For indoor unit (Capacity after distribution joint is 22.4 kW or less.)*



Size of connection point on each part (Shown are inside diameters of tubing)										
Size		Part A	Part B	Part C	Part D	Part E				
Dimension	(mm)	Ø19.05	Ø15.88	Ø12.70	Ø9.52	Ø6.35				
Dimension	(inches)	Ø3/4	Ø5/8	Ø1/2	Ø3/8	Ø1/4				

4. CZ-P680BK2

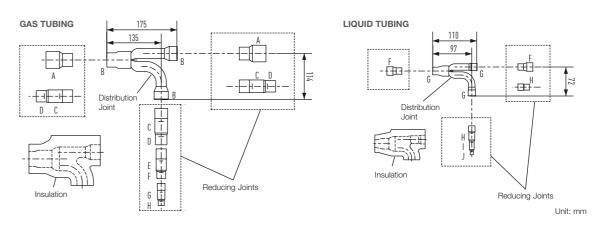
Use: For indoor unit (Capacity after distribution joint is more than 22.4 kW and no more than 68.0 kW.)*



Size of connection point on each part (Shown are inside diameters of tubing)											
Size		Part A	Part B	Part C	Part D	Part E	Part F	Part G	Part H		
Dimension	(mm)	Ø28.58	Ø25.40	Ø22.22	Ø19.05	Ø15.88	Ø12.70	Ø9.52	Ø6.35		
	(inches)	Ø1-1/8	Ø1	Ø7/8	Ø3/4	Ø5/8	Ø1/2	Ø3/8	Ø1/4		

5. CZ-P1350BK2

Use: For indoor unit (Capacity after distribution joint is more than 68.0 kW.)*

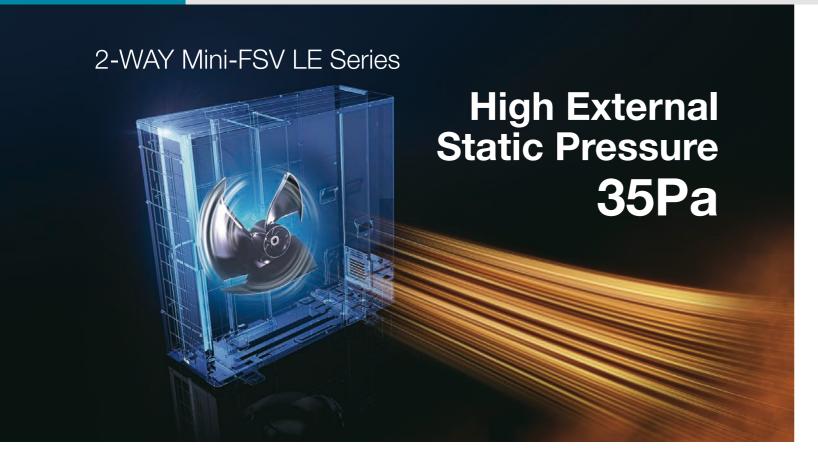


Size of connection point on each part (Shown are inside diameters of tubing)											
Size		Part A	Part B	Part C	Part D	Part E	Part F	Part G	Part H	Part I	Part J
Dimension	(mm)	Ø38.10	Ø31.75	Ø28.58	Ø25.40	Ø22.22	Ø19.05	Ø15.88	Ø12.70	Ø9.52	Ø6.35
	(inches)	Ø1-1/2	Ø1-1/4	Ø1-1/8	Ø1	Ø7/8	Ø3/4	Ø5/8	Ø1/2	Ø3/8	Ø1/4

^{*}If the tube diameter is more than ø38.1, use field-supply reducer.

^{*} In case the total capacity of indoor units connected after distribution exceeds the total capacity of the outdoor units, select the distribution tubing size for the total capacity of the outdoor units.

Mini-FSV LE Series Mini-FSV LE Series



Long piping design length for greater design flexibility LE1 LE2 building types and sizes Heiaht Actual piping length 150m Actual piping length 150m (equivalent piping length 175m) 50m* (equivalent piping length 175m) Level difference Level difference between indoor units 15m between indoor Max. total piping length:180m Max. total piping length:300m units 15m

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

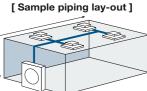
Refrigerant chargeless up to 50m

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.

Max. total piping length: 50m

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



LE1 LE2

High external static pressure 35Pa

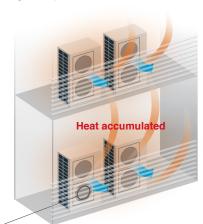
LE1 LE2

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.

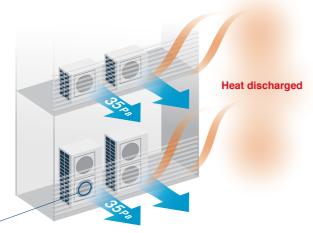


Previous model - Low pressure

When the pressure is low, hot air will accumulate in the unit thus



LE series - High pressure But with a high pressure of 35Pa, hot air is sent further away



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 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

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.



Single Split

Can be installed in the small space

[LE1] 1330mm

Mini-FSV

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.
- * 6 HP only; 4 HP for 7 units, 5 HP for 8 units.

Mini-FSV LE Series

LE1 LE2

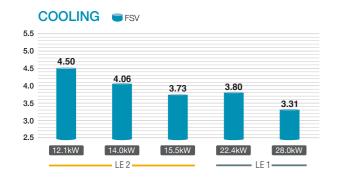
LE1 LE2

LE1 LE2

2-WAY Mini-FSV LE Series

LE1 LE2 High efficiency

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





Energy savings design

LE1 LE2





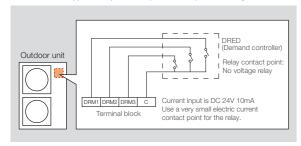
reduce refrigerant pressure loss.

Flexible demand response with the optional terminal block

Demand Response

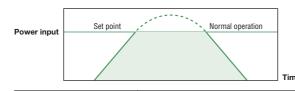
Featuring inverter control technology, all Panasonic Mini FSV systems are Demand Response Management (DRM) ready. With this control, power consumption at times of peak load can be set in three steps to deliver optimum performance. This helps to reduce annual power consumption with minimal loss in comfort.

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



Demand control setting level and unit behavior image

A maintenance remote controller for service and special connection wiring are required for setting up the outdoor unit after installation of the kit, please contact your dealer for details.



Terminal no. for demand section	Description
DRM3	Approx. 75% of rated current
DRM2	Approx. 50% of rated current
DRM1	Compressor off

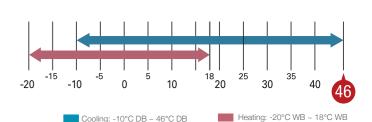
Wide operating range

• 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.
- Heating operation is possible even when outdoor temperature is as low as -20°C WB.

The remote controller temperature can be set from 18°C up to 30°C (Cooling), 16°C up to 30°C (Heating)*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.

Blue fin condenser

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

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





Quiet operation mode

• 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).



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LE1

Mini-FSV LE Series Mini-FSV LE Series

2-WAY Mini-FSV LE2 Series

kW				12	2.1	12	2.1	14	.0	14	1.0	15	5.5	15	.5		
Model nan	ne			U-4L	E2R5	U-4L	E2R8	U-5L	E2R5	U-5L	E2R8	U-6L	E2R5	U-6L	E2R8		
Power suppl	у			230/240V/1-	phase/50Hz	400/415V/3-	-phase/50Hz	230/240V/1-	phase/50Hz	400/415V/3	-phase/50Hz	230/240V/1	-phase/50Hz	400/415V/3-	phase/50Hz		
Voltage				230V	240V	400V	415V	230V	240V	400V	415V	230V	240V	400V	415V		
	0 - 1		kW	12	1.1	12	12.1		14.0		14.0		15.5		.5		
	Cooling		BTU/h	41,	300	41,	300	47,	300	47,	800	52,	900	52,9	900		
Capacity	11		kW	12.5		12	2.5	16	i.0	16	6.0	16	3.5	16	.5		
	Heating		BTU/h	42,	700	42,700		54,	600	54,	600	56,	300	56,0	300		
EER/COP	Cooling		W/W	4.5	50	4.	50	4.	06	4.	06	3.	73	3.7	73		
EER/COP	Heating W/W		W/W	5.	19	5.	19	4.	60	4.	60	4.	27	4.2	27		
Dimensions	(H/W/D)		mm	996 x 98	30 x 370	996 x 98	30 x 370	996 x 98	30 x 370	996 x 9	30 x 370	996 x 9	80 x 370	996 x 980 x 370			
Net weight			kg	10	06	10	06	10	06	1	106		106		106		16
	0 - 1	Running current	A	12.70	12.20	4.17	4.02	16.30	15.60	5.30	5.11	19.40	18.60	6.37	6.14		
Electrical	Cooling	Power input	kW	2.69	2.69	2.69	2.69	3.45	3.45	3.45	3.45	4.15	4.15	4.15	4.15		
ratings	11	Running current	А	11.60	11.20	3.78	3.64	16.60	15.90	5.34	5.15	18.20	17.50	5.93	5.71		
	Heating	Power input	kW	2.41	2.41	2.41	2.41	3.48	3.48	3.48	3.48	3.86	3.86	3.86	3.86		
Starting curr	ent		Α	-		-	1		I		1		1	1			
Air flow rate			m^3/h	4,1	40	4,1	40	4,3	20	4,3	320	4,4	140	4,4	40		
Air ilow rate			L/s	1,1	50	1,1	50	1,2	100	1,2	200	1,2	233	1,2	33		
Refrigerant a at shipment	mount		kg	R410/	A 6.70	R410/	A 6.70	R410/	A 6.70	R410	A 6.70	R410	A 6.70	R410A	4 6.70		
Piping	Gas pip	е	mm (inches)	Ø15.88	3 (Ø5/8)	Ø15.88	3 (Ø5/8)	Ø15.88	(Ø5/8)	Ø15.88	3 (Ø5/8)	Ø15.88	3 (Ø5/8)	Ø15.88	(Ø5/8)		
connection	Liquid p	ipe	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°Cl Heating:-20°Cl		Cooling:-10°Cl Heating:-20°Cl		Cooling:-10°C Heating:-20°C	DB~+46°CDB, WB~+18°CWB		DB-+46°CDB, WB-+18°CWB	Cooling:-10°C Heating:-20°C	DB~+46°CDB, WB~+18°CWB				
Sound	Normal	mode	dB(A)	52	1.0	52	2.0	53	1.0	50	3.0	54	1.0	54	.0		
pressure level (Cooling)	Silent m	ode	dB(A)	45	i.0	45	i.0	46	i.0	46	6.0	47	7.0	47	.0		
Sound power level (Cooling)	Normal	mode	dB	69	1.0	69	0.0	71	.0	7	1.0	73	3.0	73	.0		

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

Air intake \Rightarrow

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

ENERGY EFFICIENCY RATING











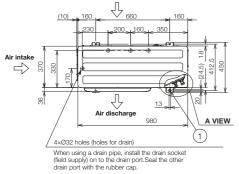
U-6LE2R5

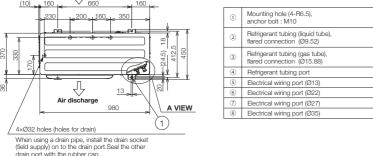
U-6LE2R8

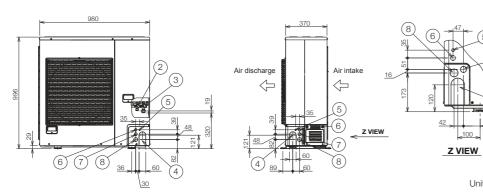
Dimensions

U-4LE2R5 / U-4LE2R8 U-5LE2R5 / U-5LE2R8 U-6LE2R5 / U-6LE2R8









2-WAY Mini-FSV LE1 Series

kW			22	4	25.	0	
Model nan	ne		U-8LE	1R8	U-10LE	E1R8	
Power supp	oly		400/415V/3-phase/50Hz	380/400V/3-phase/60Hz	400/415V/3-phase/50Hz 3	380/400V/3-phase/60Hz	
Voltage			400V	415V	400V	415V	
		kW	22.	.4	25.	0	
	Cooling	BTU/h	76,5	500	85,3	00	
Capacity		kW	25.	.0	28.	0	
	Heating	BTU/h	85,3	800	95,6	00	
	Cooling	W/W	3.8	30	3.3	1	
EER/COP	Heating	W/W	4.0	02	3.9	3	
Dimensions	(H/W/D)	mm	1,500 x 9	80 x 370	1,500 x 98	30 x 370	
Net weight		kg	13	2	133	3	
Cod	Cooling Running curren	: A	9.15	8.80	11.70	11.30	
	Power input	kW	5.89	5.89	7.55	7.55	
ratings	Heating Running current	: A	9.65	9.30	11.10	10.70	
	Power input	kW	6.22	6.22	7.13	7.13	
Starting cur	rent	A	1		1		
Air flow rate		m³/h	9,0	00	9,60	00	
Air ilow rate		L/s	2,5	00	2,66	66	
Refrigerant	amount at shipment	kg	R410A	6.30	R410A	6.60	
Piping	Gas pipe	mm (inches)	Ø19.05	(Ø3/4)	Ø22.22	(Ø7/8)	
connection	Liquid pipe	mm (inches)	Ø9.52	(Ø3/8)	9,600 2,666 R410A 6.60 Ø22.22 (Ø7/8) Ø9.52 (Ø3/8)		
Ambient ter	mperature operating rang	Э	Cooling:-10°CE Heating:-20°CV		Cooling:-10°CD Heating:-20°CW		
Sound pressure leve	Normal mode	dB(A)	60.	.0	62.	0	
(Cooling)	Silent mode	dB(A)	53	.0	55.	0	
Sound powe level (Cooling	Normal mode	dB	81.	.0	83.	0	

	Rated conditions:	Cooling	Heating
Global remarks	Indoor air temperature	27°C DB / 19°C WB	20°C DB
TOTTICATES	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 the same specifications.

ENERGY EFFICIENCY RATING

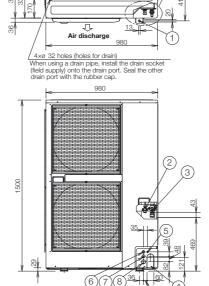




U-8LE1R8

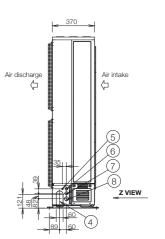
Dimensions U-8LE1R8 / U-10LE1R8



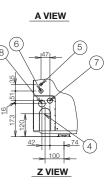


1	Mounting hole (4-R6.5), anchor bolt : M10
2	Refrigerant tubing (liquid tube), flared connection (ø9.52) for 8-10 HP finally.
3	Refrigerant tubing (gas tube), flared connection (ø19.05)
4	Refrigerant tubing port
(5)	Electrical wiring port (ø13)
6	Electrical wiring port (ø22)
7	Electrical wiring port (ø27)
8	Electrical wiring port (ø35)
For	U-10LE1H7

For U-10.LE1H7 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 (braze).







Unit: mm

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A VIEW

Unit: mm

Mini-FSV LE Series Mini-FSV LE Series

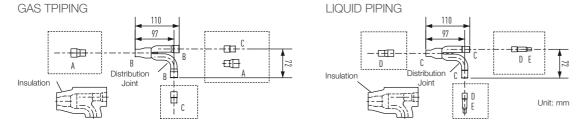
2-WAY Mini-FSV LE2 Series

Distribution Joint Kits

CZ-P160BK2

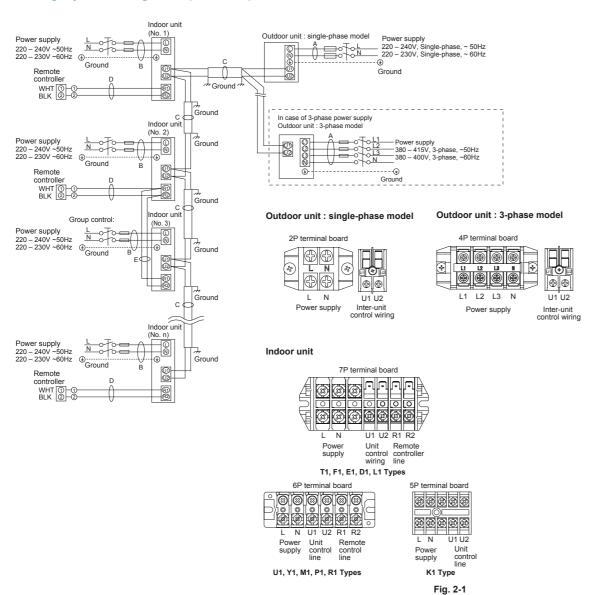
Use: For indoor unit (Capacity after distribution joint is 22.4 kW or less.)*

* In case the total capacity of indoor units connected after distribution exceeds the total capacity of the outdoor units, select the distribution piping size for the total capacity of the outdoor units.



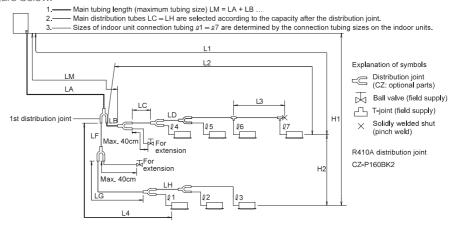
Size of conne	Size of connection point on each part (Shown are inside diameters of piping)										
Size		Part A	Part B	Part C	Part D	Part E					
Dimension	(mm)	Ø19.05	Ø15.88	Ø12.70	Ø9.52	Ø6.35					
	(inches)	Ø3/4	Ø5/8	Ø1/2	Ø3/8	Ø1/4					

Wiring System Diagrams (LE2/LE1)



Piping Design

Select the installation location so that the length and size of refrigerant piping are within the allowable range shown in the figure below.



Ranges that Apply to Refrigerant Piping Lengths and to Differences in Installation Heights

Mark	Contents	Length (m)	
	Many minima langula	Actual length	≤150
L1	Max. piping length	Equivalent length	≤175
ΔL (L2 – L4)	Difference between max. length and from the 1st distribution joint	min. length	≤50
LM	Max. length of main piping (at maximum size) *Even after 1st distribution joint, LM is allowed if at maximum piping length.		_
l1, l2~ l7	Max. length of each distribution pipe	≤50	
L1+11+12~ 16 + LF + LG + LH	Total max. piping length including ler liquid piping)	≤180	
114	When outdoor unit is installed higher	than indoor unit	≤50
П	When outdoor unit is installed lower	≤40	
H2	Max. difference between indoor units	3	≤15
L3	T-joint piping (field-supply); Max. pipil solidly welded-shut end point	≤2	
	L1 ΔL (L2 – L4) LM 11, 12~ 17 L1+11+12~ 16+ LF+ LG + LH H1 H2	L1 Max. piping length Difference between max. length and from the 1st distribution joint Max. length of main piping (at maxin "Even after 1st distribution joint, LM length. Q1, Q2~Q7 Max. length of each distribution pipe L1+Q1+Q2~Q6+LF+LG Total max. piping length including ler liquid piping) When outdoor unit is installed higher When outdoor unit is installed lower. H2 Max. difference between indoor units T-joint piping (field-supply); Max. pipi	L1 Max. piping length Actual length Equivalent length Difference between max. length and min. length from the 1st distribution joint Max. length of main piping (at maximum size) "Even after 1st distribution joint, LM is allowed if at maximum piping length. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1

Piping Size

Main Piping Size (LA)

	12.1 kW	15.5 kW					
Cook thing man (inches)	ø15.88 (ø5/8)						
Gas tubing mm (inches)	Flare connection						
Lieurid tubing game (in about)	ø9.52 (ø3/8)						
Liquid tubing mm (inches)	Flare connection						
Nata -The refrigerent piping	امممن مطالمان مطم	with DATOA refer					

Note: The refrigerant piping should be used with R410A refrigerant.

Indoor Unit Piping Connection (\$1,\$2...\$n-1)

Indoor unit type	22 28 36 45 56				60 71/73 90 106 14					160
Gas piping mm (inches)	ø12.7 (ø1/2)				ø15.88 (ø5/8)					
Liquid piping mm (inches)	ø6.35 (ø1/4)				ø9.52 (ø3/8)					

System Limitations

Outdoor units	12.1 kW	14.0 kW	15.5 kW
Number of max. connectable indoor units	7	8	9
Max. allowable indoor/ outdoor capacity ratio	50 – 130%		
			kW – kilowatts

Main Piping Size After Distribution (LB, LC...)

Total	Below kW		7.1 (2.5HP)	_
capacity after distribution	Over kW		_	7.1 (2.5HP)
	Can minima	(mm)	ø12.7	ø15.88
Dining size	Gas piping	(inches)	ø1/2	ø5/8
Piping size	I to a del colorio	(mm)	ø9.52	ø9.52
	Liquid piping	(inches)	ø3/8	ø3/8

Note: In case the total capacity of indoor units connected after distribution exceeds the capacity of the outdoor unit, select the main piping size for the capacity of the outdoor unit.

Mini-FSV LE Series Mini-FSV LE Series

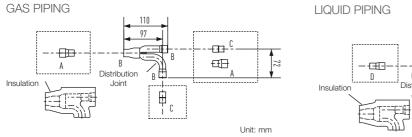
2-WAY Mini-FSV LE1 Series

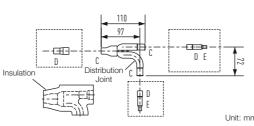
Distribution Joint Kits

CZ-P160BK2

Use: For indoor unit (Capacity after distribution joint is 22.4 kW or less.)*

* In case the total capacity of indoor units connected after distribution exceeds the total capacity of the outdoor units, select the distribution piping size for the total capacity of the outdoor units.





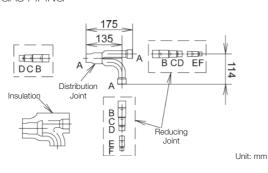
Size of connection point on each part (Shown are inside diameters of tubing)								
Size		Part A	Part B	Part C	Part D	Part E		
Dimension	(mm)	Ø19.05	Ø15.88	Ø12.70	Ø9.52	Ø6.35		
Dimension	(inches)	Ø3/4	Ø5/8	Ø1/2	Ø3/8	Ø1/4		

CZ-P680BK2

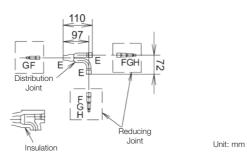
Use: For indoor unit (Capacity after distribution joint is greater than 22.4 kW and no more than 68.0 kW.)*

* In case the total capacity of indoor units connected after distribution exceeds the total capacity of the outdoor units, select the distribution piping size for the total capacity of the outdoor units.

GAS PIPING



LIQUID PIPING



Size of connection point on each part (Shown are inside diameters of piping)									
	Part A	Part B	Part C	Part D	Part E	Part F	Part G	Part H	
(mm)	Ø28.58	Ø25.4	Ø22.22	Ø19.05	Ø15.88	Ø12.7	Ø9.52	Ø6.35	
(inches)	Ø1-1/8	Ø1	Ø7/8	Ø3/4	Ø5/8	Ø1/2	Ø3/8	Ø1/4	
((mm)	Part A (mm) Ø28.58	Part A Part B (mm) Ø28.58 Ø25.4	Part A Part B Part C (mm) Ø28.58 Ø25.4 Ø22.22	Part A Part B Part C Part D (mm) Ø28.58 Ø25.4 Ø22.22 Ø19.05	Part A Part B Part C Part D Part E (mm) Ø28.58 Ø25.4 Ø22.22 Ø19.05 Ø15.88	Part A Part B Part C Part D Part E Part F (mm) Ø28.58 Ø25.4 Ø22.22 Ø19.05 Ø15.88 Ø12.7	Part A Part B Part C Part D Part E Part F Part G (mm) Ø28.58 Ø25.4 Ø22.22 Ø19.05 Ø15.88 Ø12.7 Ø9.52	

Piping design

Select the installation location so that the length and size of refrigerant piping are within the allowable range shown in the figure below.

1.— Main tubing length (maximum tubing size) LM = LA + LB ...

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

3.— Sizes of indoor unit connection tubing £1 – £13 are determined by the connection tubing sizes on the indoor units.

L1

L2

Explanation of symbols

Distribution joint

(CZ: optional parts)

Ball valve (field supply)

X Solidly welded shut (pinch weld)

R410A distribution joint

CZ-P160BK2

Ranges that Apply to Refrigerant Piping Lengths and to Differences in Installation Heights

Items	Mark	Contents		Length (m)
			Actual length	≤150
	L1	Max. piping length	Equivalent length	≤175
	ΔL (L2 – L4)	Difference between max. length and r from the 1st distribution joint	min. length	≤50
Allowable piping length	LM	Max. length of main piping (at maximum size) *Even after 1st distribution joint, LM is allowed if at maximum piping length.		_
Q1, Q2~ Q13		Max. length of each distribution pipe	≤50	
	L1+11+12~ 112 + LF + LG + LH	Total max. piping length including lengliquid piping)	≤300	
		When outdoor unit is installed higher	than indoor unit	≤50
Allowable elevation difference	H1	When outdoor unit is installed lower the	han indoor unit	≤40
a	H2	Max. difference between indoor units		≤15
Allowable length of joint piping	L3	T-joint piping (field-supply); Max. pipin solidly welded-shut end point	≤2	

L = Length, H = Height

Piping Size

Main Piping Size (LA)

	22.4 kW	28.0 kW								
Outdoor unit horsepower	8 HP	10 HP								
Con mining man (inches)	ø19.05 (ø3/4)	ø22.22 (ø7/4)								
Gas piping mm (inches)	Flare connection	Brazing connection								
Liquid pining page (inches)	ø9.52 (ø3/8)									
Liquid piping mm (inches)	Flare connection									

Note: If future extension is planned, select the piping diameter based on the total horsepower after extension. The refrigerant piping should be used with R410A refrigerant.

Main Piping Size After Distribution (LB, LC...)

CZ-P680BK2

-	_				-	-		
Total	Below kW		Below kW		7.1 (2.5HP)	16.0 (6 HP)	22.5 (8.1 HP)	_
capacity after distribution	Over kW		_	7.1 (2.5 HP)	16.0 (6 HP)	22.5 (8.1 HP)		
	0	(mm)	ø12.7	ø15.88	ø19.05	ø22.22		
Dining size	Gas tubing	(inches)	ø1/2	ø5/8	ø3/4	ø7/8		
Piping size	Lieusiel tudeie e	(mm)	ø9.52	ø9.52	ø9.52	ø9.52		
	Liquid tubing		ø3/8	ø3/8	ø3/8	ø3/8		

kW = kilowatts

51

Note :In case the total capacity of connected indoor units exceeds the total capacity of the outdoor units, select the main piping size for the total capacity of the outdoor units.

Indoor Unit Piping Connection (\$1,\$2...\$n-1)

Indoor unit type	22	28	36	45	56	60	71/73	90	106	140	160	180	224	280
Gas tubing mm (inches)	ø12.7 (ø1/2)			ø15.88 (ø5/8)					ø19.05 (d	o3/4)	ø22.22 (ø7/8)			
Liquid tubing mm (inches)	ø6.35	(ø1/4)				ø9.52	(ø3/8)							

System Limitations

Outdoor units	22.4 kW (8 HP)	28.0 kW (10 HP)			
Number of max. connectable indoor units	13	13			
Max. allowable indoor/ outdoor capacity ratio	50 – 130%				

nanoe™ X



*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



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.

- nanoeTM 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.



Please refer to the nanoe™ X website.



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

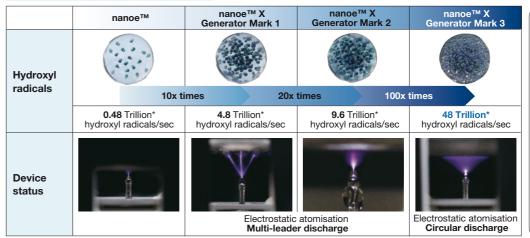
After business hours, nanoe™ X keeps cleaning indoor air in fan mode

*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.

C•nanoe[™]X

nanoe™ X device evolution





Changed from 4-point discharge to circular discharge

nanoe™ X technology inhibits novel coronavirus

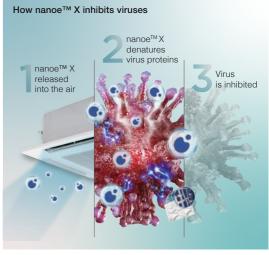
Our nanoeTM X technology has shown to suppress the activity of viurses & bacteria. Enjoy cleaner and quality air at home. Stay safer indoors with nanoeTM X.



Overview

The objective of this test was to determine if nanoeTM X inhibit the activity of the SARS-CoV-2 virus. Gauze saturated with SARS-CoV-2 virus solution was exposed to a generator of nanoeTM X from a distance of 15 cm in a 45-liter box for 2 hours. Over 99.999%* of the activity of the SARS-CoV-2 virus was inhibited.

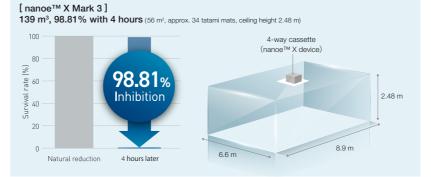
Device type: 10 x nanoe™ X (Mark 1) Subject: Novel coronavirus (SARS-CoV-2) Test Institute: TEXCELL (France) Test duration: 2 hours



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

Notes: VRF 4-way cassette with nanoe™ Mark 3 is not released in the market yet.

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

Indoor Units

Wide choice of models depending on the indoor requirements

Key Indoor Units Equipped DC motors

















Simplified Wired Remote Controller



CZ-RTC6

Simple and Sophisticated Design In-and-Out

User friendly interface with stylish design measuring just 86 x 86 mm, this is an extremely compact remote controller which looks great in any room.



High-spec Wired Remote Controller



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

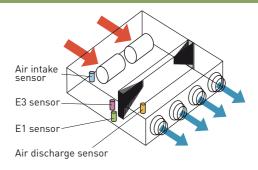
The elegant, flat design features large touch keys in a simple layout enabling easy, intuitive operation.



All Ducted Series / F3, M1, Z1, E2, E1, H1, type

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 (22~36), K2 (45~106) 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) Ø6.35 - (Gas) Ø12.7, please use CZ-P56SVK2.

Remote Temperature Sensor



- 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.

CZ-RTC5B

54

Indoor Units Indoor Units

Cooling/Heating

36,200/38,900

10.6/11.4

Cooling/Heating

38,200/42,700

11.2/12.5

NEW ///

Cooling/Heating

S-140MF3E5AN

14.0/16.0

NEW ///

Cooling/Heating

54,600/61,400

16.0/18.0

NEW ///

FSV Indoor Units Range

Wide choice of models depending on the indoor requirements

Class	22	28	36	45	56	60	73	90
	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating
Capacity kW Type BTU/h	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
Generator Mark3 F3 type ECONAVI Mid Static Adaptive Ducted	NEW /// S-22MF3E5AN	NEW /// S-28MF3E5AN	NEW /// S-36MF3E5AN	NEW /// S-45MF3E5AN	NEW /// S-56MF3E5AN	NEW /// S-60MF3E5AN	NEW /// S-73MF3E5AN	NEW /// S-90MF3E5AN
M1 type ECONAVI Slim Low Static Ducted	S-22MM1E5A	S-28MM1E5A	S-36MM1E5A	S-45MM1E5A	S-56MM1E5A			
Z1 type ECONAVI 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 ECONAVI Wall Mounted	S-22MK2E5A	S-28MK2E5A	S-36MK2E5A	S-45MK2E5A	S-56MK2E5A		S-73MK2E5A	
nance™ X as an option 102 type	S-22MU2E5A	S-28MU2E5A	S-36MU2E5A	S-45MU2E5A	S-56MU2E5A	S-60MU2E5A	S-73MU2E5A	S-90MU2E5A
Y2 type ECONAVI 4-Way Mini Cassette Panel No. CZ-KPY3AW	S-22MY2E5A	S-28MY2E5A	S-36MY2E5A	S-45MY2E5A	S-56MY2E5A			
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 ECONAVI 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	

S-180ME2E5 * S-106ME1E5 S-140ME1E5 High Fresh Air S-140MH1H5 S-106MK2E5A S-140MU2E5A S-160MU2E5A S-106MU2E5A S-140MT2E5A S-106MT2E5A

self-diagnosis Auto fan

Auto restart

Drain pump self-diagnosis Auto fan Auto fan

DC motor

art DC motor S-224ME2E5 S-280ME2E5 S-224ME1E5 S-280ME1E5 High Fresh Air High Fresh Air S-224MH1H5 S-280MH1H5 DRY Dry mode Drain pump DRY Dry mode Drain pum DRY Dry mode Drain pump

Self-diagnosis function | Self-diagnosis | Automatic fan operation | DRY | Dry mode | DRY | Dry mode | Automatic restart function | Air swing | DRY | Dry mode | DRY | Dry mode

Cooling/Heating

18.0/20.0

224

Cooling/Heating

76,400/85,300

22.4/25.0

Cooling/Heating

Functions

Auto fan

Drain pump

57

28.0/31.5

^{*} High flesh air system is not allowed for 18 kW model. ** Only for CZ-KPU3A

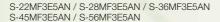
Indoor Unit / F3 Type Indoor Unit / F3 Type

NEW ///

F3 TYPE Mid Static Adaptive Ducted

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



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





Fan Operation



Restart Function



Optional accessory



ECONAVI

CZ-CENSC1



CZ-RWS3 CZ-RWRC3

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Technical focus

For short

ducting such as hotels

- 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.

Optimal Control by DC Motor

10Pa 150Pa

For long ducting or for usage with high efficiency filter

* Please refer to technical databook for detail.

Powerful 150Pa external static pressure in an industryleading horizontal/vertical installation design

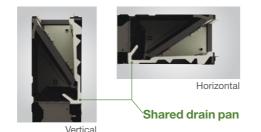
Delivering static pressure up to 150Pa external static pressure, the industry-leading horizontal/vertical design offers the power you need in a compact form factor.



Improved drain pan design

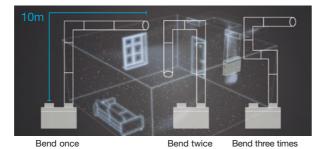
Drain pan is shared in both cases horizontal and vertical installation.

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.



C•nanoe X

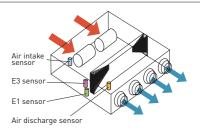
As the experiments demonstrate: even with a total ductwork length of up to 10 m, effectiveness of nanoe™ X is maintained.

Built-in Drain pump External electrical equipment box (DC motor pump) makes maintenance easy Space saving height of 250mm for all models 250mm standardised height provides Built-in filter easy and uniform installation for models with different capacities, especially when ceiling heights are restricted

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.



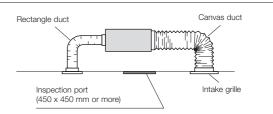
Selectable air inlet position

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



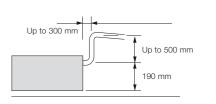
System example

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.



Indoor Unit / F3 Type Indoor Unit / F3 Type

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					
0	-16.	kW	2.2	2.8	3.6	4.5	5.6	
Cooling capa	ICITY	BTU/h	7,500	9,600	12,300	15,400	19,100	
I I a a tila a a a a a a	-14	kW	2.5	3.2	4.2	5.0	6.3	
Heating capa	CITY	BTU/h	8,500	10,900	14,300	17,100	21,500	
D	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	
Power input	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	Cooling	Α	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	
current	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	
	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	
	Cooling Air flow rate (H/M/L)	m³/h	768/660/480	768/660/480	840/720/480	840/720/480	960/840/600	
		L/s	213/183/133	213/183/133	233/200/133	233/200/133	267/233/167	
Fan motor	Heating Air flow rate (H/M/L)	m³/h	840/720/480	840/720/480	840/720/480	840/720/480	960/840/600	
		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)	30 (10-150)	30 (10-150)	30 (10-150)	30 (10-150)	
Sound power	r level (H/M/L)	dB	54/51/43	54/51/43	54/51/43	54/51/43	58/55/47	
Sound pressi	ure sound (H/M/L)	dB(A)	31/28/20	31/28/20	31/28/20	31/28/20	35/32/24	
Dimensions	HxWxD	mm	250 x 800 x 730	250 x 800 x 730	250 x 800 x 730	250 x 800 x 730	250 x 800 x 730	
	Liquid	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	
Pipe connections	Gas	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	
CONTRECTIONS	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20	
Net weight		kg	26	26	26	26	26	

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB	20°C DB
I ILIVII II II CO	Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.



S-60MF3E5AN	S-73MF3E5AN	S-90MF3E5AN	S-112MF3E5AN	S-140MF3E5AN	S-160MF3E5AN
		22	0/230/240 V, 1 phase - 5	0/60 Hz	
6.0	7.3	9.0	11.2	14.0	16.0
20,500	24,900	30,700	38,200	47,800	54,600
7.1	8.0	10.0	12.5	16.0	18.0
24,200	27,300	34,100	42,700	54,600	61,400
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
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
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
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
Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
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
350/300/250	350/300/250	417/383/267	617/533/433	617/533/433	667/567/467
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
350/300/250	350/300/250	417/383/267	617/533/433	617/533/433	667/567/467
0.165	0.165	0.165	0.259	0.259	0.259
30 (10-150)	30 (10-150)	40 (10-150)	50 (10-150)	50 (10-150)	50 (10-150)
54/51/46	54/51/46	58/56/48	64/59/55	64/59/55	66/60/56
31/28/23	31/28/23	35/33/25	41/36/32	41/36/32	43/37/33
250 x 1,000 x 730	250 x 1,000 x 730	250 x 1,000 x 730	250 x 1,400 x 730	250 x 1,400 x 730	250 x 1,400 x 730
Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)
Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)
VP-20	VP-20	VP-20	VP-20	VP-20	VP-20
31	31	31	40	40	40

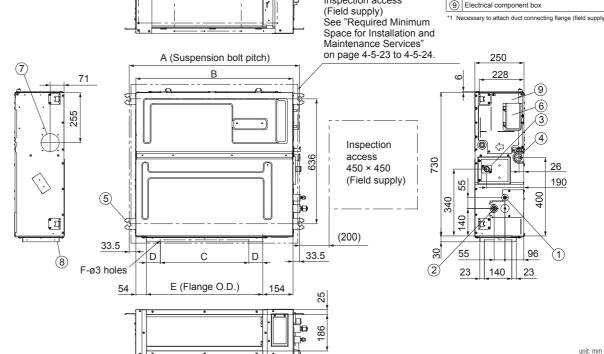
F3 TYPE MID STATIC DUCTED Dimensions

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

① S-22/28/36/45/56MF3E5AN : Φ6.35 (flared) S-60/73/90/112/140/160MF3E5AN : Φ9.52 (flared) Refrigerant tubing joint (gas tube)
S-22/28/36/45/56MF3E5AN: Ф12.7 (flared)
S-60/73/90/112/140/160MF3E5AN: Ф15.88 (flared) Upper drain port VP20 (ø26 mm) 200 mm flexible hose supplied (4) Bottom drain port VP20 (ø26 mm) Suspension lug (4 – 12 × 30 mm) 6 Power supply outlet
7 Fresh air intake port (ø100 mm) 8 Flange for flexible air outlet duct

Refrigerant tubing joint (liquid tube)

 Electrical component box *1 Necessary to attach duct connecting flange (field supply).



Inspection access

Indoor Unit / M1 Type Indoor Unit / M1 Type

M1_{TYPE} Slim Low Static Ducted

Concealed duct

The ultra slim M1 type is one of the leading products of its type in the industry. With a height of only 200 mm, it provides greater flexibility and adaptability for various applications. In addition, high efficiency and extreme low noise level make it highly suitable for hotels and small offices.



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

Optional accessory

CZ-RTC6

ECONAVI ECONAVI ready







* With booster cable.







Function



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.

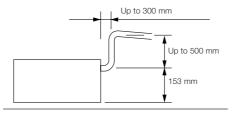
Ultra-slim profile for all models

200mm 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.

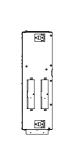


Model Name			S-22MM1E5A	S-28MM1E5A	S-36MM1E5A	S-45MM1E5A	S-56MM1E5A		
Power source			220/230/240 V, 1 phase - 50/60 Hz						
0 "		kW	2.2	2.8	3.6	4.5	5.6		
Cooling capac	city	BTU/h	7,500	9,600	12,300	15,400	19,100		
Hartin	· ·	kW	2.5	3.2	4.2	5.0	6.3		
Heating capac	city	BTU/h	8,500	10,900	14,300	17,100	21,500		
5	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		
Power input	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		
Runnina	Cooling	А	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		
current	Heating	Α	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		
	Туре		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		
Fan		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	52/50/48		
Sound pressu	re 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	HxWxD	mm	200 x 750 x 640	200 x 750 x 640	200 x 750 x 640	200 x 750 x 640	200 x 750 x 640		
	Liquid	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)		
Pipe connections	Gas	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)		
OG II IGGUOI IS	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20		
Net weight		kg	19	19	19	19	19		

M1 TYPE SLIM LOW STATIC DUCTED **Dimensions**

Rated conditions:

Indoor air temperature



Coolina

Outdoor air temperature 35°C DB / 24°C WB

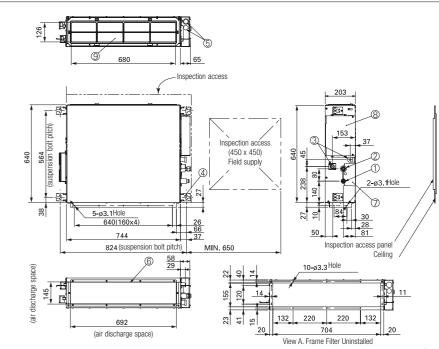
27°C DB / 19°C WB

20°C DB

7°C DB / 6°C WB

- 1 Refrigerant piping joint (narrow tube) 2 Refrigerant piping joint (wide tube)
- 3 Upper and bottom drain port (O.D. 26 mm)
 4 Suspension lug
 5 Power supply outlet (2- Ø30)
 6 Flange for air intake duct

- 7 PI cover 8 Electrical component box
- 9 Frame filter



Specifications are subject to change without notice.

Indoor Unit / Z1 Type Indoor Unit / Z1 Type

Z1 TYPE Slim Low Static Ducted Twenty Series Concealed duct

The ultra slim Z1 type is one of the leading products of its type in the industry. With a height of only 200 mm, it provides greater flexibility and adaptability for various applications. In addition, high efficiency and extreme low noise level make it highly suitable for hotels and small offices.









Operation





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

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



Drain pump with increased power! (optional)

Using the optional high-lift drain pump, the drain piping rise height can be increased to 700 mm from the drain pipe port.



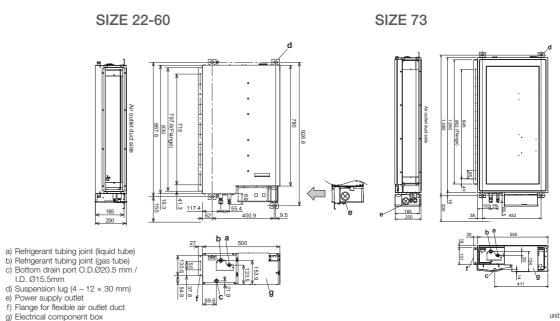
CZ-73DMZ1

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							
		kW	2.2	2.8	3.6	4.5	5.6	6.0	7.3	
Cooling capac	orty	BTU/h	7,500	9,500	12,200	15,300	19,100	20,500	24,900	
		kW	2.5	3.2	4.2	5.1	6.4	7.1	8.0	
Heating capac	orty	BTU/h	8,500	10,900	14,300	17,400	21,800	24,200	27,300	
<u> </u>	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	
Power input	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	Cooling	А	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	
current	Heating	А	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	
	Туре		Sirroco fan	Sirroco fan	Sirroco fan	Sirroco fan	Sirroco fan	Sirroco fan	Sirroco 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	
Fan		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 pressur	re Pa	10-30	10-30	10-30	10-30	10-30	10-30	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 pressu	re 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	HxWxD	mm	200×830×500	200×830×500	200×830×500	200×830×500	200×830×500	200×830×500	200x1,050×550	
	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)	Ø9.52 (Ø3/8)	
Pipe	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)	Ø15.88 (Ø5/8)	
connections	Drain piping		O.D. Ø20.5 mm / I.D. Ø15.5mm	O.D. Ø20.5 mm / I.D. Ø15.5mm	O.D. Ø20.5 mm / I.D. Ø15.5mm	O.D. Ø20.5 mm / I.D. Ø15.5mm	O.D. Ø20.5 mm / I.D. Ø15.5mm	O.D. Ø20.5 mm / I.D. Ø15.5mm	O.D. Ø20.5 mm / I.D. Ø15.5mm	
Net weight		kg	17	17	18	18	18	18	24	

	Rated conditions:	Cooling	Heating	
GLOBAL REMARKS	Indoor air temperature	27°C DB / 19°C WB	20°C DB	
I ILIVIAI II (O	Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB	

Specifications are subject to change without notice.

Z1 TYPE SLIM LOW STATIC DUCTED TWENTY SERIES Dimensions



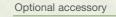
Indoor Unit / E2 Type Indoor Unit / E2 Type

E2 TYPE High Static Ducted

Concealed duct / Air conditioning mode

High static and large airflow ducted for exceptional installation flexibility.











E

CZ-RWS3 CZ-RWRC3

67







Self-diagnosis

Operation

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 80-81)

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. 270 Pa static pressure setting

A maximum static pressure setting of a high 270 Pa 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 ϕ 7mm pipe that increases the heat transfer surface to improve sensible cooling (5-10% improvement)

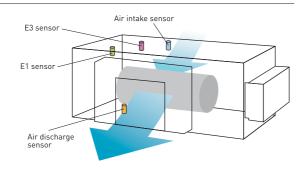
No Rap Valve Kit required

Thanks to improved performance, a Rap Valve Kit (CZ-P160RVK2) is no longer required.



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.

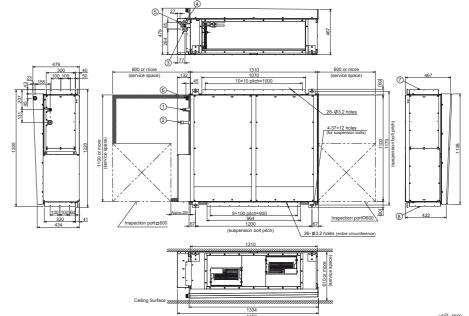


Model Name S-180ME2E5 S-224ME2E5 S-280ME2E5 Power source 220/230/240 V, 1 phase - 50 Hz, 220/230 V, 1 phase - 60 Hz kW 18.0 22.4 28.0 Cooling capacity BTU/h 61,400 76,400 95,500 20.0 25.0 31.5 kW Heating capacity BTU/h 68,200 85,300 107,500 0.400 0.715 kW 0.440 Power input 0.715 kW 0.400 0.440 Heating 2.40/2.30/2.20 2.55/2.45/2.35 3.95/3.85/3.70 Cooling Runnina 2.40/2.30/2.20 2.55/2.45/2.35 3.95/3.85/3.70 Α Heating Sirocco fan Sirocco fan Sirocco fan 2,940/2,640/2,340 3,360/3,060/2,640 4,320/3,780/3,180 Air flow rate (H/M/L) 817/733/650 933/850/733 1,200/1,050/883 0.560 x 2 0.560 x 2 0.750 x 2 Motor output 140 (60/270) 140 (72/270) 140 (60/270) 77/75/73 76/74/72 81/79/75 Sound power level (H/M/L) 44/42/40 45/43/41 49/47/43 Sound pressure level (H/M/L) $H \times W \times D$ 479 x 1,453 x 1,205 479 x 1,453 x 1,205 479 x 1,453 x 1,205 Ø9.52 (3/8) Ø9.52 (3/8) Ø9.52 (3/8) connections Gas Ø19.05 (3/4) Ø19.05 (3/4) Ø22.22 (7/8) VP-25 VP-25 VP-25 Net weight kg 102 102 106

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

E2 TYPE HIGH STATIC DUCTED Dimensions

- 1 Refrigerant piping (liquid pipes) \emptyset 9.52
- 2 Refrigerant piping (gas pipes) 180 & 224 type: Ø19.05, 280 type: Ø22.22 3 Power supply outlet (Ø25 grommet, rubber)
- 4 Power supply outlet (spare) (Ø30 knock-out) 5 Optional outlet for piping
- 6 Drain port 25 A, male thread 7 Duct connection for suction
- 8 Duct connection for discharge



Indoor Unit / E2 Type Indoor Unit / E2 Type

E2 TYPE Energy Saving High Fresh Air Ducted



Concealed duct high-static pressure

High static and large airflow ducted for exceptional installation flexibility.











E

CZ-RWS3 CZ-RWRC3





Technical focus

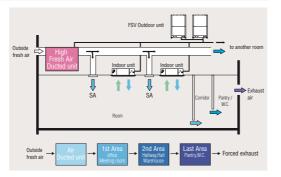
- 100% fresh air intake for ventilation purpose
- Design flexibility with high static pressure and large air volume
- DC motor equipped

- 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.

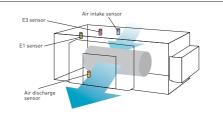


Mix operation unit with standard indoor units

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.



Remark For High Static Ducted Series

Model	Operation	Rap valve kit CZ-P160RVK2	3way control PCB CZ-CAPE2	3way valve kit CZ-P160HR3	Distribution Joint kit <2pipes> CZ-P160BK2 for 22.4kW unit or less CZ-P680BK2 for more than 22.4kW	Distribution Joint kit <pre><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><approx="2"><a< th=""></a<></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></approx="2"></pre>
E2 Type	Cooling Only	-	-	-	-	-
Energy Saving High-Fresh Air	Cool or Heat	2pcs	2pcs	-	2pcs	-
Ducted	Heat Recovery	-	2pcs	2pcs	1pc	1pc

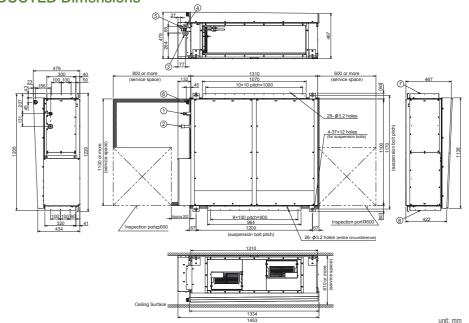
Model Name			S-224ME2E5	S-280ME2E5		
Power source			220/230/240 V, 1 phase - 50 Hz, 220/230 V, 1 phase - 60 Hz			
0	ta.	kW	22.4	28.0		
Cooling capac	ity	BTU/h	76,400	95,500		
Heating conce	·	kW	21.2	26.5		
Heating capac	яцу	BTU/h	72,300	90,400		
Danner innut	Cooling	kW	0.290	0.350		
Power input	Heating	kW	0.290	0.350		
Running	Cooling	А	1.90/1.85/1.80	2.30/2.20/2.10		
current			1.90/1.85/1.80	2.30/2.20/2.10		
	Type		Sirocco fan	Sirocco fan		
	Air flow rate	m³/h	1,700	2,100		
Fan	Air ilow rate	L/s	472	583		
	Motor output	kW	0.560 x 2	0.750 x 2		
	External static pressure	Pa	200	200		
Sound power	level	dB	75	76		
Sound pressur	re level	dB(A)	43	44		
Dimensions	HxWxD	mm	479 x 1,453 x 1,205	479 x 1,453 x 1,205		
	Liquid	inches (mm)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)		
Pipe connections	Gas	inches (mm)	Ø19.05 (Ø3/4)	Ø22.22 (Ø7/8)		
222000110	Drain piping		VP-25	VP-25		
Net weight		kg	102	106		

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

Specifications are subject to change without notice.

E2 TYPE HIGH STATIC DUCTED Dimensions

- 1 Refrigerant piping (liquid pipes) Ø9.52 2 Refrigerant piping (gas pipes) 224 type: Ø19.05, 280 type: Ø22.22 3 Power supply outlet (Ø25 grommet, rubber)
- 4 Power supply outlet (spare) (Ø30 knock-out) 5 Optional outlet for piping
- 6 Drain port 25 A, male thread 7 Duct connection for suction
- 8 Duct connection for discharge



Indoor Unit / E1 Type Indoor Unit / E1 Type

E1 TYPE High Static Ducted

Concealed duct high-static pressure

The E1 range of ducted units offers improved design flexibility for extended duct layouts as a result of their increased external static pressures.



S-73ME1E5/S106ME1E5/S-140MH1H5

Optional accessory







CZ-RWS3 CZ-RWRC3

E







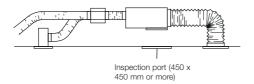


Technical focus

- 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

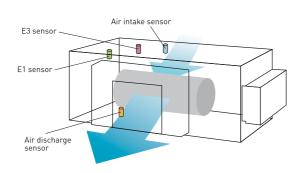
System example

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.



Remark For High Static Ducted Series

Model	Operation	Rap valve kit CZ-P160RVK2	3way control PCB CZ-CAPE2	3way valve kit CZ-P160HR3	Distribution Joint kit <2pipes> CZ-P160BK2 for 22.4kW unit or less CZ-P680BK2 for more than 22.4kW	Distribution Joint kit <3pipes> CZ-P224BH2 for 22.4kW unit CZ-P680BH2 for 28.0kW unit
E1 Type High Static Ducted (Only for S-224,S-280)	Cooling Only	-	-	-	-	-
	Cool or Heat	2pcs	-	-	2pcs	-
	Heat Recovery	-	-	2pcs	1pc	1pc

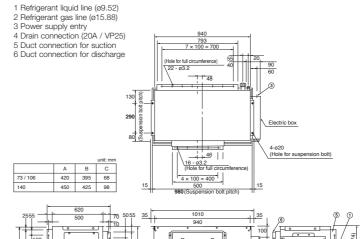
Model Name		S-73ME1E5	S-106ME1E5	S-140ME1E5	S-224ME1E5	S-280ME1E5	
Power source				220/230/240 V, 1 phase - 50 Hz			
Cooling capacity		7.3	10.6	14.0	22.4	28.0	
		BTU/h	25,000	36,000	47,800	76,400	95,500
Heating capacity BTU/h		8.0	11.4	16.0	25.0	31.5	
		BTU/h	27,000	39,000	54,600	85,300	107,500
Power 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	А	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	Α	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	Туре		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		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	479 x 1,428 x 1,23
Pipe connections	Liquid	mm (inches)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)
	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	

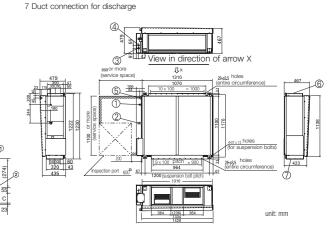
Specifications are subject to be changed without notice.

* With booster cable.

E1 TYPE HIGH STATIC DUCTED Dimensions



- 1 Refrigerant piping (liquid pipes) Ø9.52
- 2 Refrigerant piping (gas pipes) 224 type: Ø19.05, 280 type: Ø22.22
- 3 Power supply outlet (Ø25 grommet, rubber) 4 Power supply outlet (spare) (Ø30 knock-out)
- 5 Drain port 25 A, male thread
- 6 Duct connection for suction



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Indoor Unit / H1 Type Indoor Unit / H1 Type

H1TYPE High-Fresh Air Ducted Concealed duct

High static and large airflow ducted for exceptional installation flexibility.









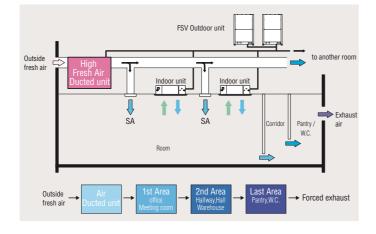
Technical focus

- 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%

Remark For High Static Ducted Series

Model	Operation	Rap valve kit CZ-P160RVK2	3way control PCB	3way valve kit CZ-P160HR3	Distribution Joint kit <2pipes>	Distribution Joint kit <3pipes>
		ā -	Ma		CZ-P160BK2 for 22.4kW unit or less	CZ-P224BH2 for 22.4kW unit
					CZ-P680BK2 for more than 22.4kW	CZ-P680BH2 for 28.0kW unit
H1 Type	Cooling Only	-	-	-	-	-
High-Fresh Air	Cool or Heat	2pcs	-	-	2pcs	-
Ducted	Heat Recovery	-	-	2pcs	1pc	1pc

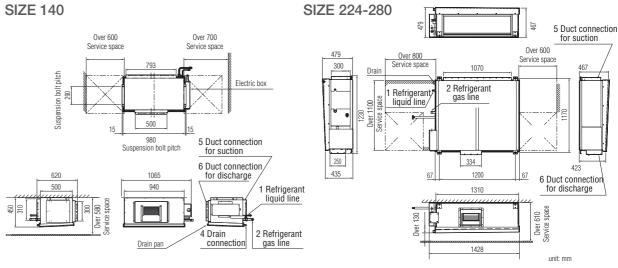
	Model Name		S-140MH1H5	S-224MH1H5	S-280MH1H5
Power source	÷			220/230/240 V, 1 phase - 50 Hz	
0	-14.	kW	14.0	22.4	28.0
Cooling capacity BTU/h		BTU/h	47,800	76,400	95,500
		kW	13.2	21.2	26.5
Heating capa	city	BTU/h	45,000	72,300	90,400
D	Cooling	kW	0.430/0.430/0.430	0.670/0.670/0.670	0.730/0.730/0.730
Power input	Heating	kW	0.430/0.430/0.430	0.670/0.670/0.670	0.730/0.730/0.730
Running	Cooling	A	2.0/1.9/1.9	3.2/3.1/3.0	3.6/3.4/3.3
current Heating		A	2.0/1.9/1.9	3.2/3.1/3.0	3.6/3.4/3.3
	Туре		Sirocco fan	Sirocco fan	Sirocco fan
	Air flow rate	m³/h	1,560	1,800	2,100
Fan		L/s	433	500	583
	Motor output	kW	0.3	0.38	0.38
	External static pressure	Pa	185/190/195	230/260/290	220/240/260
Sound power	level (H/M/L)	dB	75/76/76	78/79/79	79/80/80
Sound pressu	ure level (H/M/L)	dB(A)	43/44/44	46/47/47	47/48/48
Dimensions	HxWxD	mm	420 x 1,065 x 620	479 x 1,428 x 1,230	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)
00111100110113	Drain piping		VP-25	VP-25	VP-25
Net weight		kg	50	110	110

GLOBAL	Rated conditions:	Cooling	Heating	,
REMARKS	Outdoor air temperature	33°C DB / 28°C WB	0°C DB / -2.9°C WB	

Specifications are subject to change without notice.

H1TYPE HIGH-FRESH AIR DUCTED Dimensions

- 1 Refrigerant liquid line
- 2 Refrigerant gas line 3 Power supply entry
- 4 Drain connection
 5 Duct connection for suction 6 Duct connection for discharge



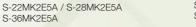
Indoor Unit / K2 Type Indoor Unit /K2 Type

K2_{TYPE} Wall Mounted



The K2 type wall mounted unit has a stylish smooth design with a washable front panel. Small, lightweight and low noise level makes it ideal for small offices and other commercial applications.







S-45MK2E5A / S-56MK2E5A S-73MK2E5A / S-106MK2E5A

Optional accessory

CZ-RTC6



CZ-CENSC1 CZ-RTC5B

36 O V I CZ-RWS3

28 R30

*Receiver is included in the wall mounted indoor unit.















(Auto Flap Control)

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

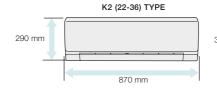
To reduce noise level of expansion valve. (Optional accessory)



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.

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.

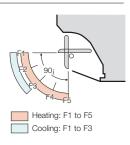
Washable front panel

The indoor unit's front panel can be easily removed and washed for troublefree 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.



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Indoor Unit / K2 Type Indoor Unit / K2 Type

K2TYPE Wall Mounted

Model Name			S-22MK2E5A	S-28MK2E5A	S-36MK2E5A	S-45MK2E5A	
Power source			220/230/240 V, 1 phase - 50/60 Hz				
		kW	2.20	2.80	3.60	4.5	
Cooling capa	city	BTU/h	7,500	9,600	12,300	15,400	
		kW	2.50	3.20	4.20	5.0	
Heating capa	city	BTU/h	8,500	10,900	14,300	17,100	
	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	
Power input	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	
Runnina	Cooling	А	0.21	0.23	0.25	0.33/0.32/0.31	
current	Heating	А	0.21	0.23	0.25	0.33/0.32/0.31	
	Туре		Cross-flow fan	Cross-flow fan	Cross-flow fan	Cross-flow fan	
_		m³/h	540/450/390	570/498/390	654/540/390	870/750/600	
Fan	Air flow rate (H/M/L)	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 pressu	ire level (H/M/L)	dB(A)	36/33/29	37/34/29	40/36/29	38/35/33	
Dimensions	HxWxD	mm	290 x 870 x 214	290 x 870 x 214	290 x 870 x 214	302 x 1,120 x 236	
	Liquid	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	
Pipe connections	Gas	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	
COLIN ICCTION IS	Drain piping	mm	Ø18	Ø18	Ø18	Ø18	
Net weight		kg	9	9	9	13	

GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB	20°C DB
TILIVII II II CO	Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.

SIZE 45-106

S-56MK2E5A

5.6

6.3

19,100

21,500

0.035/0.035/0.035

0.035/0.035/0.035

0.36/0.35/0.34

0.36/0.35/0.34

Cross-flow fan

960/840/720

267/233/200

0.054

55/52/50

40/37/35

Ø6.35 (Ø1/4)

Ø12.7 (Ø1/2)

13

302 x 1,120 x 236

S-73MK2E5A

7.3

24,900

27,300

8.0

220/230/240 V, 1 phase - 50/60 Hz

0.055/0.055/0.055

0.055/0.055/0.055

0.52/0.51/0.50

0.52/0.51/0.50

Cross-flow fan

325/283/233

0.054

62/59/55

47/44/40

Ø9.52 (Ø3/8)

Ø15.88 (Ø5/8) Ø18

14

1,170/1,020/840

302 x 1,120 x 236

S-106MK2E5A

10.6

36,200

11.4

38,900

0.080/0.080/0.080

0.080/0.080/0.080

0.72/0.70/0.68

0.72/0.70/0.68

Cross-flow fan

358/308/250

0.054

64/61/57

49/46/42

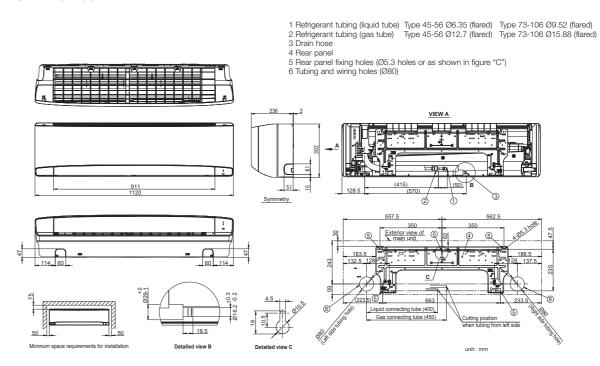
Ø9.52 (Ø3/8) Ø15.88 (Ø5/8)

Ø18

14

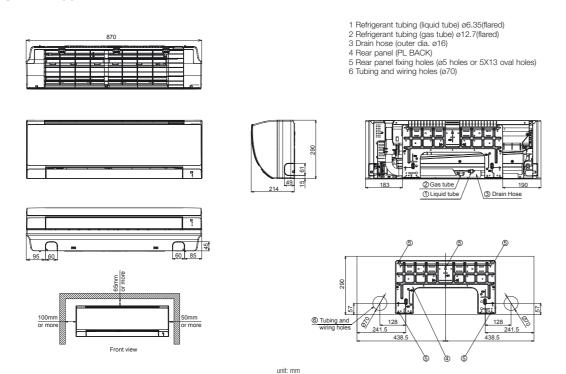
1,290/1,110/900

302 x 1,120 x 236



K2 (22-36) TYPE WALL MOUNTED Dimensions

SIZE 22-36



K2 (45-106) TYPE WALL MOUNTED Dimensions

Indoor Unit / U2 Type Indoor Unit / U2 Type

U2 TYPE 4-WAY Cassette (DC) Conditional (Optional)





Semi concealed cassette



1 [1] Air intake flange (Ø100) (field supply) 2 Air intake box CZ-ATU2 *

3 Air intake plenum CZ-FDU3

* When using Air intake box (CZ-ATU2).

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



ECONAVI Panel: CZ-KPU3A





25.0 CZ-RTC6

Optional accessory







[CZ-RTC5B is required]



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.)

High Ceiling (Factory model 2.2-5.6kW Capacity 6.0-9.0kW 10.6-16.0kW 10.6-16.0kW 4-way discharge high ceiling setting 2 2-way discharge with the optional air-Capacity

Flat horizontal design

• Lower noise in slow fan operation

• Industry top light weight, easy piping

• Easy installation structure of the panel

Technical focus

heat exchanger

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

• New high performance turbo fan, new path system for



• Econavi: Floor temperature and human sensor added.

nanoe[™]X: The first 10x for CAC (10 times more nanoe[™]

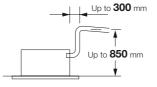
particle for wide commercial space). Inside cleaning by

Activity amount detection and new circulator

10x nanoe™ + dry control

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*)

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



Ample airflow: 36 m³/min Industry's leading in the 140PU class.

Ceiling height guidelines

*1 settings	4-way discha	arge		3-way discharge	2-way discharge (optional air-blocking materials) *2	
Indoor unit	Factory setting 1	High ceiling setting 1	High ceiling setting 2	(optional air-blocking materials)		
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
- *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-KPU3 Econavi panel: CZ-KPU3A





C•nanoe X

nanoe™ X with 10 times the concentration

 $nanoe^{\text{TM}}\,X$ contains plenty of OH radicals that have outstanding effects on various air pollutants, including bacteria and viruses, mould, allergens, pollen, hazadous substances, as well as deodorise odours. It also keeps moisture in your skin and hair. *CZ-CNEXU1 is required to use nanoe $^{\text{TM}}$ X function.



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

Indoor Unit / U2 Type

U2_{TYPE} 4-WAY Cassette

Model Name			S-22MU2E5A	S-28MU2E5A	S-36MU2E5A	S-45MU2E5A	S-56MU2E5A	
Power source			220/230/240 V, 1 phase - 50Hz/60Hz					
0 "		kW	2.2	2.8	3.6	4.5	5.6	
Cooling capac	city	BTU/h	7,500	9,600	12,300	15,400	19,100	
I lanting some	oib.	kW	2.5	3.2	4.2	5.0	6.3	
Heating capa	CILY	BTU/h	8,500	10,900	14,300	17,100	21,500	
D	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	
Power input	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	Cooling	А	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	
current	Heating	А	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	
	Type		Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	
F	A: 0 . 0.040.	m³/h	870/780/690	870/780/690	870/780/690	930/780/690	990/810/690	
Fan	Air flow rate (H/M/L)	L/s	242/217/192	242/217/192	242/217/192	258/217/192	275/225/192	
	Motor output	kW	0.06	0.06	0.06	0.06	0.06	
Sound power	level (H/M/L)	dB	45/44/43	45/44/43	45/44/43	46/44/43	47/45/43	
Sound pressu	ire level (H/M/L)	dB(A)	30/29/28	30/29/28	30/29/28	31/29/28	32/30/28	
Dimensions*	HxWxD	mm		256+(33.5) x 840 (950) x 84	10 (950)		
	Liquid	mm (inches)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	Ø6.35 (Ø1/4)	
Pipe connections	Gas	mm (inches)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	Ø12.7 (Ø1/2)	
ooi ii lootioi ia	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25	
Net weight* (F	Panel)	kg	19 (+5)	19 (+5)	19 (+5)	19 (+5)	19 (+5)	

	Rated conditions:	Cooling	Heating
Global remarks	Indoor air temperature	27°C DB / 19°C WB	20°C DB
TOTTICINO	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.



S-60MU2E5A	S-73MU2E5A	S-90MU2E5A	S-106MU2E5A	S-140MU2E5A	S-160MU2E5A
			220/230/240 V, 1 phas	e - 50Hz/60Hz	
6	7.3	9.0	10.6	14.0	16.0
20,500	24,900	30,700	36,200	47,800	54,600
7.1	8.0	10.0	11.4	16.0	18.0
24,200	27,300	34,100	38,900	54,600	61,400
0.035/0.035/0.035	0.040/0.040/0.040	0.040/0.040/0.040	0.090/0.090/0.090	0.095/0.095/0.095	0.105/0.105/0.105
0.035/0.035/0.035	0.040/0.040/0.040	0.040/0.040/0.040	0.085/0.085/0.085	0.090/0.090/0.090	0.100/0.100/0.100
0.34/0.33/0.32	0.37/0.36/0.35	0.39/0.38/0.37	0.74/0.71/0.68	0.77/0.74/0.71	0.85/0.82/0.79
0.33/0.32/0.31	0.36/0.35/0.34	0.38/0.37/0.36	0.72/0.69/0.66	0.75/0.72/0.69	0.83/0.80/0.77
Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan	Turbo fan
1,260/960/780	1,350/960/780	1,380/1,110/840	2,040/1,500/1,140	2,160/1,560/1,200	2,220/1,680/1,440
350/267/217	375/267/217	383/308/233	567/417/317	600/433/333	617/467/400
0.06	0.06	0.06	0.09	0.09	0.09
51/47/44	52/47/44	53/50/47	59/53/49	60/54/50	61/55/53
36/32/29	37/32/29	38/35/32	44/38/34	45/39/35	46/40/38
				319+(33.5)	x 840 (950) x 840 (950)
Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)	Ø9.52 (Ø3/8)
Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)	Ø15.88 (Ø5/8)
VP-25	VP-25	VP-25	VP-25	VP-25	VP-25
20 (+5)	20 (+5)	20 (+5)	25 (+5)	25 (+5)	25 (+5)



Test report for odours and mould suppression performance

No.	Target Substance	Effectiveness	Testing Institute	Test Report No.	Method	Result
1	Odours	Decrease by 0.7 level	Gunma Research Center	Test Report No. 27055	nance™X was operated in a test space (55m²) and the deodorisation effect on a piece of cloth impregnated with odour components of cigarette smoke was evaluated using 6 level odor intensity indication method.	Decrease in odour intensity by 0.7 level after 2 hour of opera- tion
2	Mould	Inhibit Mould Growth	Institute of Environmental Biology	Test Report No.150901, 150904	Mould sensor was attached at indoor unit inside. In a test space (95m²) at 25 degree and 75% humidity, AC cooling with nanoe™X was operated during 2 hour per day for 9 days.	No Mould Growth after 9 days.

Indoor Unit / Y2 Type Indoor Unit / Y2 Type

Y2_{TYPE} 4-Way Mini Cassette Mini semi concealed cassette



Designed to fit perfectly into a 60 x 60 cm ceiling grid without the need to alter the bar configuration, the Y2 is ideal for small commercial and retrofit applications. In addition, improvements to the Y2's efficiency make this model one of the most advanced units in the industry.





Optional accessory

25.0

CZ-RTC6



CZ-CENSC1

28° N O AI CZ-RTC5B

CZ-RWS3

*Receiver is included in the 4-way mini cassette indoor unit.















Built-in Drain

Dry mode

Intelligent Auto Swing

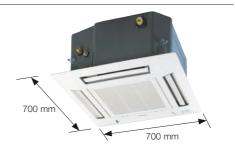
Auto Swing (Auto Flap Control)

Technical focus

- Mini cassette fits into a 60 x 60 cm ceiling grid
- Powerful drain pump gives 750 mm lift
- DC fan motor with variable speed and a new heat exchanger ensures efficient power consumption
- Fresh air knock out
- Multi directional air flow

Compact design

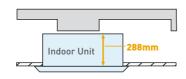
The panel is a compact (70×70 cm) so it can be installed even in a small room where space is limited.



Lighter and slimmer, easier installation

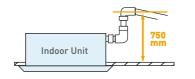
When only 260mm of indoor body height, it can easily fit in limited spaces and tight spots.

(Required 288mm from bottom of panel to top of the unit)



A drain height of up to 750 mm from the ceiling surface

The internal pump allows the drain pipe to be elevated up to 750mm above the base of the unit.



Model Name		S-22MY2E5A	S-28MY2E5A	S-36MY2E5A	S-45MY2E5A	S-56MY2E5A	
Power source 220/230/240 V, 1 phase - 50/60 Hz							
0	-14.	kW	2.2	2.8	3.6	4.5	5.6
Cooling capa	CITY	BTU/h	7,500	9,600	12,300	15,400	19,100
Heating sons	aib.	kW	2.5	3.2	4.2	5.0	6.3
Heating capa	CITY	BTU/h	8,500	10,900	14,300	17,100	21,500
D	Cooling	kW	0.035	0.035	0.040	0.040	0.045
Power input	Heating	kW	0.030	0.030	0.035	0.035	0.040
Running	Cooling	A	0.30	0.30	0.30	0.32	0.35
current	Heating	A	0.25	0.30	0.30	0.30	0.35
	Type		Turbo fan				
F	A:-0	m³/h	546/492/336	558/504/336	582/522/360	600/558/492	624/588/510
Fan motor	Airflow rate (H/M/L)	L/s	152/137/93	155/140/93	162/145/100	167/155/137	173/163/142
	Output	kW	0.04	0.04	0.04	0.04	0.04
Power sound	level (H/M/L)	dB	50/46/40	50/46/40	51/47/41	53/49/43	55/52/49
Sound pressure	e level (H/M/L)	dB(A)	35/31/25	35/31/25	36/32/26	38/34/28	40/37/34
Dimensions*	HxWxD	mm	288 (+31) x 575 (700) x 575 (700)	288 (+31) x 575 (700) x 575 (700)	288 (+31) x 575 (700) x 575 (700)	288 (+31) x 575 (700) x 575 (700)	288 (+31) x 575 (700) x 575 (700)
	Liquid	mm (inches)	Ø6.35 (Ø1/4)				
Pipe connections	Gas	mm (inches)	Ø12.7 (Ø1/2)				
00111100110110	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25
Net weight*		kg	18 (+2.4)	18 (+2.4)	18 (+2.4)	18 (+2.4)	18 (+2.4)

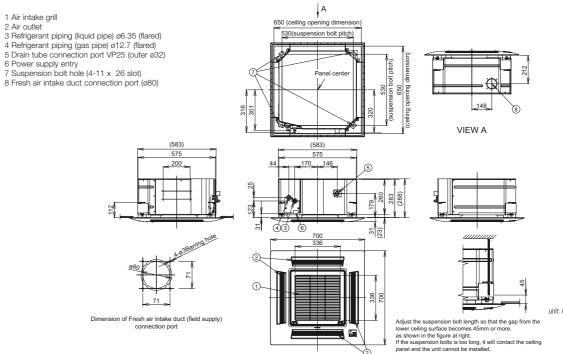
GLOBAL REMARKS	Rated conditions:	Cooling	Heating
	Indoor air temperature	27°C DB / 19°C WB	20℃ DB
112140 4 11 (0	Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

 $^{^{\}star}\,\mbox{The values in () for external dimensions and Net weight are the values for the$ optional ceiling panel. Specifications are subject to change without notice.

Y2 TYPE 4-WAY CASSETTE Dimensions

- 1 Air intake grill

- 5 Drain tube connection port VP25 (outer ø32)
- 6 Power supply entry
 7 Suspension bolt hole (4-11 x 26 slot)
- 8 Fresh air intake duct connection port (Ø80)



Indoor Unit / L1 Type Indoor Unit / L1 Type

L1 TYPE 2-Way Cassette

The L1 is very thin, compact and light, allowing flexible install options. A redesigned fan has been used to achieve this size and weight reduction.

















Self-diagnosis Function

Auto Swing (Auto Flap Control)

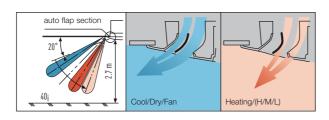
Built-in Drain

Technical focus

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

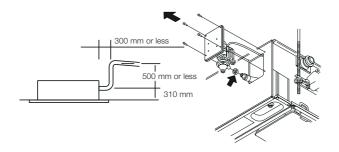
Auto flap control

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



Drain up is possible up to 500 mm 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					220/230/240 V, 1	phase - 50/60 Hz		
		kW	2.2	2.8	3.6	4.5	5.6	7.3
Cooling capacity		BTU/h	7,500	9,600	12,000	15,000	19,000	25,000
Harian and		kW	2.5	3.2	4.2	5.0	6.3	8.0
Heating capacity		BTU/h	8,500	11,000	14,000	17,000	21,000	27,000
5	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
Power input	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
	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
Running current 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
	Туре		Sirocco fan					
-	4: 6	m³/h	480/420/360	540/480/420	580/520/460	660/540/480	660/540/480	1,140/960/840
Fan	Air flow rate (H/M/L)	L/s	133/117/100	150/133/117	161/144/128	183/150/133	183/150/133	317/267/233
	Motor output	kW	0.03	0.03	0.03	0.03	0.03	0.05
Sound power level	(H/M/L)	dB	40/38/35	44/40/37	45/42/39	46/44/40	46/44/40	49/46/44
Sound pressure le	vel (H/M/L)	dB(A)	30/27/24	33/29/26	34/31/28	35/33/29	35/33/29	38/35/33
Dimensions *	HxWxD	mm	350+(8)x840 (1,060) x600 (680)	350+(8)x 1,140 (1,360) x600 (680				
	Liquid	mm (inches)	Ø6.35 (Ø1/4)	Ø9.52 (Ø3/8)				
Pipe connections	Gas	mm (inches)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)				
	Drain piping		VP-25	VP-25	VP-25	VP-25	VP-25	VP-25
Net weight *		kg	23 (+5.5)	23 (+5.5)	23 (+5.5)	23 (+5.5)	23 (+5.5)	30 (+9)

	Rated conditions:	Cooling	Heating
GLOBAL REMARKS	Indoor air temperature	27°C DB / 19°C WB	20°C DB
I ILIVII II II CO	Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

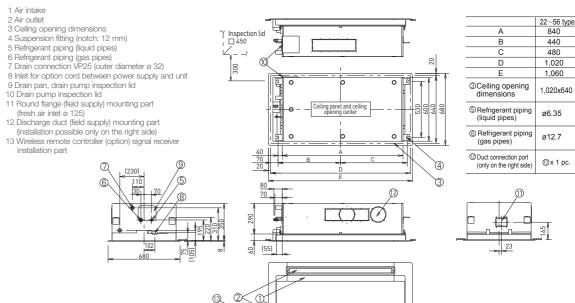
* The values in () for external dimensions and Net weight are the values for the optional ceiling panel.

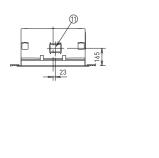
Specifications are subject to change without notice.

L1 TYPE 2-WAY CASSETTE Dimensions

- 1 Air intake 2 Air outlet
- 3 Ceiling opening dimensions 4 Suspension fitting (notch: 12 mm)
- 5 Refrigerant piping (liquid pipes)

- 9 Drain pan, drain pump inspection lid 10 Drain pump inspection lid





unit: mm

ø9.52

ø15.88

②x 2 pc.

Indoor Unit / D1 Type Indoor Unit / D1 Type

D1_{TYPE} 1-Way Cassette Semi concealed slim cassette



Designed for installation within the ceiling void, the D1 range of slimline 1 way cassettes feature a quiet yet powerful fan that can reach the floor up 4.2 m from ceiling height.

















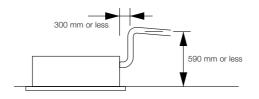
Built-in Drain Pump

Technical focus

- Ultra-Slim profile
- Suitable for standard and high ceilings
- Built-in drain pump provides 590 mm 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 4.2 m).



(2) Two-direction ceiling-mounted system

"Down-blow" and "front-blow" systems are combined in a ceilingmounted unit to blow air over a wide area.



(3) One-direction ceiling-mounted system

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

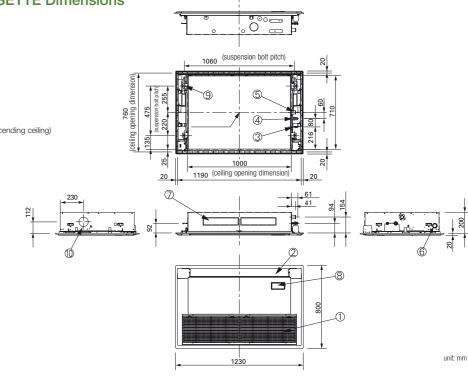
Model Name			S-28MD1E5	S-36MD1E5	S-45MD1E5	S-56MD1E5	S-73MD1E5
Power source	source 220/230/240 V, 1 phase - 50/60 Hz						
		kW	2.8	3.6	4.5	5.6	7.3
Cooling capaci	ty	BTU/h	9,600	12,000	15,000	19,000	25,000
		kW	3.2	4.2	5.0	6.3	8.0
Heating capaci	ity	BTU/h	11,000	14,000	17,000	21,000	27,000
	Cooling	kW	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
Power input	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	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
current Heating		А	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
	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan
_	Air flow rate	m³/h	720/600/540	720/600/540	720/660/600	780/690/600	1,080/900/780
Fan	(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 I	evel (H/M/L)	dB	47/45/44	47/45/44	47/46/45	49/47/45	56/51/47
Sound pressur	e level (H/M/L)	dB(A)	36/34/33	36/34/33	36/35/34	38/36/34	45/40/36
Dimensions *	HxWxD	mm	200+(20) x 1,000 (1,230) x 710 (800)	200+(20) x 1,000 (1,230) x 710 (80			
	Liquid	mm (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)
COLLIGORIOLIS	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)

	Rated conditions:	Cooling	Heating
GLOBAL REMARKS	Indoor air temperature	27°C DB / 19°C WB	20°C DB
1 12141/41 11 (0	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.



- 1 Air intake grille
- 2 Air outlet
- 3 Refrigerant piping (liquid pipes) Size 28 to 56: Ø6.35 (flared) Size 73: Ø9.52 (flared)
- 4 Refrigerant piping (gas pipes) Size 28 to 56: Ø12.7 (flared) Size 73: Ø15.88 (flared)
- 5 Drain connection VP25 (outer Ø32)
- 6 Power supply entry 7 Discharge duct connection port (for descending ceiling)
- 8 Wireless remote control receiver (option)
- 9 Suspension mounting (4-12 x 30 slot) 10Fresh air intake (Ø100)



Indoor Unit / T2 Type Indoor Unit / T2 Type

T2TYPE Ceiling Mounted



Ceiling mounted

Providing outstanding energy-saving performance and comfortable, long-distance air flow distribution, it's recommended for stores and schools.



S-36MT2E5A / S-45MT2E5A S-56MT2E5A

S-73MT2E5A S-106MT2E5A

S-140MT2E5A

Optional accessory









CZ-RWS3 CZ-RWRT3



Self-diagnosis Function





Swing







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

Compact Looking, Stylish, One-Motion Design

With its streamlined, one-motion form, the unit looks slim and compact when installed for a neat appearance in any room. When not operating, the louver closes to provide an elegant look while keeping the unit clean.



Energy-Saving Technology Delivering Top-Class Efficiency

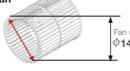
Optimization of the shape of the casing and fan assures bigger air flow and higher efficiency.

Energy-saving performance is top class in the industry.

Top Class Energy Saving

Large Diagonal Air Flow Fan



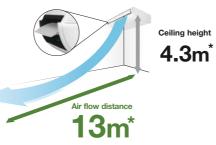


Φ147.5

Comfortable, Long-Distance Air Flow Distribution

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

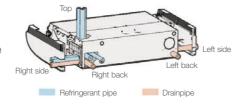
High Ceiling Setting	Air flow distance				
*Setting by remote control	112	140	160		
4.3m	12m	13m	13m		



*Results are based on specific testing conditions.

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						
0	- 14	kW	3.6	4.5	5.6	7.3	10.6	14.0	
Cooling capac	CITY	BTU/h	12,300	15,400	19,100	24,900	36,200	47,800	
		kW	4.2	5.0	6.3	8.0	11.4	16.0	
Heating capa	city	BTU/h	14,300	17,100	21,500	27,300	38,900	54,600	
D	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	
Power input	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	Cooling	А	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	
current	Heating	А	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	
	Туре		Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	Sirocco fan	
_	A: 0 . 0.040.	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	
Fan	Air flow rate (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	54/50/48	55/51/48	55/51/48	57/53/51	60/55/54	62/58/55	
Sound pressu	ire level (H/M/L)	dB(A)	36/32/30	37/33/30	37/33/30	39/35/33	42/37/36	44/40/37	
Dimensions	HxWxD	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	
	Liquid	mm (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)	
00.1.100110110	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	20°C DB
1 121717 11 11 10	Outdoor air temperature	35°C DB / 24°C WB	7°C DB / 6°C WB

Specifications are subject to change without notice.

1.275 235 690 1.269 1.226

T2 TYPE CEILING Dimensions

SIZE 36-56

1 Drain port VP20 (inside diameter Ø26mm, drain hose supplied) 5 Left side drain hose outlet port (cutout)

2 Left drain position 3 Refrigerant piping (liquid pipes)

Size 36 to 56; Ø6.35 (flared) Size 73 to 140: Ø9.52 (flared)

4 Refrigerant piping (gas pipes) Size 36 to 56: Ø12.7 (flared) Size 73 to 140: Ø15.88 (flared

SIZE 73-140

73 type

6 Piping hole on wall surface Ø100mm 7 Upper side piping port

8 Right side drain hose outlet port (cutout) 9 Wireless remote controller receiver installation location

106-140 type | 1.590 235 | 690 | 1.584 1.541

Indoor Unit / P1 Type Indoor Unit / P1 Type

P1 TYPE Floor Standing

The compact floor standing P1 units are the ideal solution for providing perimeter air conditioning. A standard wired controller can be incorporated into the body of the unit.



Optional accessory







CZ-RWS3 CZ-RWRC3





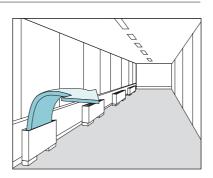




Technical focus

- 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-RTC4/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								
0		kW	2.2	2.8	3.6	4.5	5.6	7.1
Cooling capac	лцу	BTU/h	7,500	9,600	12,000	15,000	19,000	24,000
Hartina ana	-14.	kW	2.5	3.2	4.2	5.0	6.3	8.0
Heating capa	city	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000
D	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
Power input	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
Runnina	Cooling	Α	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
current	9		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
	Туре		Sirocco fan					
Fan		m³/h	420/360/300	420/360/300	540/420/360	720/540/480	900/780/660	1,020/840/720
	Air flow rate (H/M/L)	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 pressu	re 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	HxWxD	mm	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)	Ø9.52 (Ø3/8)				
Pipe connections	Gas	mm (inches)	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

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

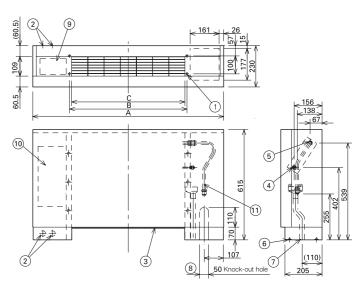
Specifications are subject to change without notice.

P1 TYPE FLOOR STANDING Dimensions

- 1 4 x Ø12 holes (for floor fixing) 2 Power supply outlet 3 Air filter

- 3 Air filter
 4 Refrigerant piping (liquid pipes)
 5 Refrigerant piping (gas pipes)
 6 Level adjustment bolt
 7 Drain outlet VP20 (with vinyl hose)
- Parain outest VP20 (with vinyl nose)
 Refrigerant piping connection port (bottom or rear)
 Operation switch (remote controller RCS-SH80AG) mounting part
 Electric equipment box
 Accessory copper pipe for gas pipe connection

Indoor unit	Α	В	С	Liquid pipes	Gas pipes
22 to 36 type	1,065	665	632		
45 type				Ø6.35	Ø12.7
56 type	1,380	980	947		
71 type				Ø9.52	Ø15.88



Indoor Unit / R1 Type Indoor Unit / R1 Type

R1 TYPE Concealed Floor Standing

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



Optional accessory







臣 CZ-RWS3 CZ-RWRC3

Self-diagnosis Function

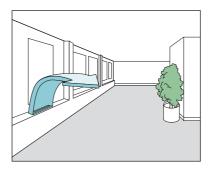




Technical focus

- 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



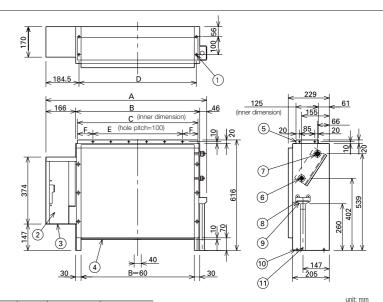
	Model Name		S-22MR1E5	S-28MR1E5	S-36MR1E5	S-45MR1E5	S-56MR1E5	S-71MR1E5
Power source	ver source 220/230/240 V, 1 phase - 50/60 Hz							
0	-14.	kW	2.2	2.8	3.6	4.5	5.6	7.1
Cooling capa	city	BTU/h	7,500	9,600	12,000	15,000	19,000	24,000
		kW	2.5	3.2	4.2	5.0	6.3	8.0
Heating capa	city	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000
	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
Power input	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
Runnina	Cooling	А	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
current	Heating	А	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
	Туре		Sirocco fan					
_		m³/h	420/360/300	420/360/300	540/420/360	720/540/480	900/780/660	1,020/840/720
Fan	Air flow rate (H/M/L)	L/s	117/100/183	117/100/183	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 pressu	ure 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	HxWxD	mm	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)	Ø9.52 (Ø3/8)				
Pipe connections	Gas 410 A	mm (inches)	Ø12.7 (Ø1/2)	Ø15.88 (Ø5/8)				
00111100010113	Drain piping		VP-20	VP-20	VP-20	VP-20	VP-20	VP-20
Net weight		kg	21	21	21	28	28	28

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

Specifications are subject to change without notice.

R1 TYPE CONCEALED **FLOOR STANDING Dimensions**

- 1 4 x Ø12 holes (for floor fixing)
- 2 Electric equipment box 3 Power supply outlet
- 4 Air filter 5 Discharge duct connection flange
- 6 Refrigerant connection outlet (liquid pipes) 7 Refrigerant connection outlet (gas pipes)
- 8 Drain filter
- 9 Drain pan
 10 Level adjustment bolt
 11 Drain outlet VP20 (with vinyl hose)



Indoor unit	А	В	С	D	E	F	Liquid pipes	Gas pipes
22 to 36 type	904	692	672	665	500	86		
45 type							Ø6.35	Ø12.7
56 type	1,219	1,007	1,002	980	900	51		
71 type							Ø9.52	Ø15.88

Indoor Unit Indoor Unit

Remark for High Static Ducted Series







E2 type Energy Saving High-Fresh Air Ducted



High Static Ducted



H1 type
High-Fresh Air Ducted



Model	Operation	Rap valve kit CZ-P160RVK2	3-way control PCB CZ-CAPE2	Distribution Joint kit <2pipes> CZ-P160BK2 for 22.4kW unit or less CZ-P680BK2 for more than 22.4kW
E2 Type High Static	Cooling Only	-	-	-
Ducted	Cool or Heat	-	-	-
E2 Type Energy Saving	Cooling Only	-	-	-
High-Fresh Air Ducted	Cool or Heat	2pcs	2pcs	2pcs
E1 Type High Static	Cooling Only	-	-	-
Ducted (Only for S-224,S-280)	Cool or Heat	2pcs	-	2pcs
H1 Type	Cooling Only	-	-	-
High-Fresh Air Ducted	Cool or Heat	2pcs	-	2pcs



FSV Controllers

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

Operation system	Individual control systems			
Requirements	Simplified operation	High-spec operation	Normal operation	Operation from anywhere in the room
External appearance	25.0c □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	T X ME	126, 16 10 20 20 20 20 20 20 20 20 20 20 20 20 20	**************************************
	Simplified Wired Remote Controller	High-spec Wired Remote Controller	Timer Remote Controller (Wired)	Wireless Remote Controller
Type, model name	CZ-RTC6	CZ-RTC5B	CZ-RTC4	Controller: CZ-RWS3 Receiver: CZ-RWRU3 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	CZ-RTC6 : Up to 2 controllers can be connected per group (only combination possible with CZ-RTC6)	Up to 2 controllers can be connected per group (When using ECONAVI sensor, only one remote controller is possible to connect at indoor unit)	Up to 2 controllers can be connected per group (When using ECONAVI sensor, only one remote controller is possible to connect at indoor unit)	Up to 2 controllers can be connected per group.
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.

Timer operation	Centralised control systems				
Daily and weekly program	Operation with various functions from a central	Only ON/OFF operation from a central location	Simplified load distribution ratio (LDR) for each tenant	BMS System PC Base	Connection with 3rd Party Controller
	location	ITOTT & CETTE AL TOCATION	10.4 in. touch screen panel color LCD		
8 ==== 2 = 2 = = 2 = = 2 = = = = = = = =	The state of the s			P-AIMS Software Up to 1024 units	Seri-Para I/O unit for outdoor unit
Schedule Timer	System Controller	ON/OFF Controller	Intelligent Controller	CZ-CSWKC2	CZ-CAPDC2
CZ-ESWC2	CZ-64ESMC3	CZ-ANC3	CZ-256ESMC3 (CZ-CFUNC2)	Optional software	Interface Adaptor
_	_	_	_	P-AIMS P-AIMS	CZ-CAPC3
_	_	_	_	CZ-CSWAC2 for Load distribution CZ-CSWWC2 for Web application CZ-CSWGC2 for Object layout display CZ-CSWBC2 for BACnet software interface *PC required (field supply)	Seri-Para I/O unit
_	•	_	•		for each indoor unit
64 groups, max. 64 units	64 groups, max. 64 units	16 groups, max. 64 units	64 units x 16 systems, max. 256 units		CZ-CAPBC2
Required power supply from the system controller When there is no system controller, connection is possible to the T10 terminal of an indoor unit.	Up to 10 controllers, can be connected to one system. Main unit/sub unit (1 main unit + 1 sub unit) connection is possible. Use without remote controller is possible.	Up to 8 controllers (4 main units + 4 sub units) can be connected to one system. Use without remote controller is impossible.	A communication adaptor (CZ-CFUNC2) must be installed for three or more links.		Communication Adaptor
_	•	•	•		CZ-CFUNC2
_	•	_	•		
_		_			LonWorks Interface
_		_			
_		_			000/
					CZ-CLNC2
		_			

ECONAVI Sensor

ECONAVI

Utilises ECONAVI Sensor and Control Program technologies to detect where energy is normally

wasted and self-adjusts cooling power to reduce

energy waste.

Activity detectionAbsence detection

FSV Controllers

FSV Controllers

Simplified wired remote controller (CZ-RTC6)



Dimensions H 86 x W 86 x D 25mm

Deluxe wired remote controller (CZ-RTC5B)



Dimensions H 120 x W 120 x D 16 mm

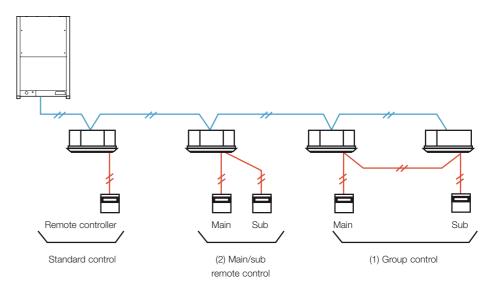
	CZ-RTC6	CZ-RTC5B
Energy Saving		
ECONAVI on/off	•	•
Temperature Auto Return	_	•
Temperature Setting range	_	•
Auto Shutoff	_	•
Schedule peak cut	_	•
Repeat off timer	_	•
Basic Operation		
Individual Louver Control(Lock individual flap for for 4-WAY cassette)	_	•
ON/OFF timer	_	•
Weekly timer	_	•
Filter information	•*	•*
Outing function	•	•
Quiet operation mode	_	•*
Power consumption monitor	_	•*
Energy saving	_	•*
initial settings	_	•
Ventilation	_	•
nanoe TM X	•*	•*
Maintenance Function		
Outdoor unit error data	_	_
Service Contact address	_	_
RC setting mode	•	•
Test run	•	•
Sensor information	•*	•*
Service check	•	•
Simple/Detailed Settings	•	•
Auto address	•	•
Initial Settings		
Rotation operation	_	•
Backup operation	_	•
Support operation		

^{*} Subject to the connected

Individual Control Systems

Control contents	Part name, model No.	Quantity
Standard Control Control of the various operations of the indoor unit by wired or wireless remote controller. Cooling or heating mode of the outdoor unit is decided by the first priority of the remote controller. Switching between remote controller sensor and body sensor is possible.	Wired remote controller CZ-RTC4,CZ-RTC5B,CZ-RTC6 Wireless remote controller + Receiver CZ-RWS3 (Wall Mounted/ Mini Cassette) CZ-RWS3 + CZ-RWRU3 (4-WAY Cassette) CZ-RWS3 + CZ-RWRL3 (2-WAY Cassette) CZ-RWS3 + CZ-RWRD3 (1-WAY Cassette) CZ-RWS3 + CZ-RWRT3 (Ceiling Mounted) CZ-RWS3 + CZ-RWRC3 (All split type)	1 unit each
(1) Group control Batch remote control on all indoor units. Operation of all indoor units in the same mode. Up to 8 units can be connected. The sensor is the body sensor, and thermostat ON/OFF setting in regard to the temperature set by the remote controller is possible for each indoor unit.	Wired remote controller CZ-RTC4,CZ-RTC5B,CZ-RTC6 Wireless remote controller + Receiver CZ-RWS3 (Wall Mounted/ Mini Cassette) CZ-RWS3 + CZ-RWRU3 (4-WAY Cassette) CZ-RWS3 + CZ-RWRL3 (2-WAY Cassette) CZ-RWS3 + CZ-RWRD3 (1-WAY Cassette) CZ-RWS3 + CZ-RWRD3 (1-WAY Cassette) CZ-RWS3 + CZ-RWRT3 (Ceilling Mounted) CZ-RWS3 + CZ-RWRC3 (All split type)	1 unit
(2) Main/sub remote control Max 2 remote controllers per indoor unit. (Main remote controller can be connected) The button pressed last has priority. Timer setting is possible even with the sub remote controller. (When using ECONAVI sensor, only one remote controller is possible to connect at indoor unit)	Wired remote controller CZ-RTC4,CZ-RTC5B,CZ-RTC6 Wireless remote controller + Receiver CZ-RWS3 (Wall Mounted/ Mini Cassette) CZ-RWS3 + CZ-RWRU3 (4-WAY Cassette) CZ-RWS3 + CZ-RWRL3 (2-WAY Cassette) CZ-RWS3 + CZ-RWRD3 (1-WAY Cassette) CZ-RWS3 + CZ-RWRT3 (Ceilling Mounted) CZ-RWS3 + CZ-RWRC3 (All split type)	As required

SYSTEM EXAMPLE FSV



NOTE: Connectable number of controllers, controller combination, connectable indoor units, remote control maximum wiring length are different between the controller. Please confirm the installation Instructions of controller or consult with Panasonic service center.

FSV Controllers

FSV Controllers

Timer remote controller (CZ-RTC4)



Dimensions H 120 x W 120 x D 20 mm

Basic remote controller ON/OFF

- Operation mode changeover (Cooling, Heating, Dry, Auto, Fan).
- Temperature setting (Cooling/Dry: 18-30 deg Heating: 16-30 deg).
- Fan speed setting H/ M/ L and Auto.
- Air flow direction adjustment.
- ECONAVI on/ off*

Time Function 24 hours real time clock

• Day of the week indicator.

Weekly Programme Function

 A maximum of 6 settings/day and 42 settings/week can be programmed.

Outing Function

• This function can prevent the room temperature from dropping or rising when the occupants are out for a long time.

Sleeping Function

• This function controls the room temperature for comfortable sleeping.

Max. 8 indoor units can be controlled from one remote controller

Remote control by main remote controller and sub controller is possible

Max. 2 remote controllers (main remote controller and sub controller) can be installed for one indoor unit.

* Depending on the model, some menus cannot be used.

Wireless remote controller



Remote control by main remote controller and sub controller is possible

 Max. 2 remote controllers (main remote controller and sub controller) can be installed for one indoor unit.

When CZ-RWS3 is used, wireless control becomes possible for all indoor units

- When a separate receiver is set up in a different room, control from that room also becomes possible.
- Automatic operation by means of the emergency operation button is possible even when the remote controller has been lost or the batteries have been exhausted.

In addition, there are other functions such as temperature setting, operation switching, airflow direction/fan speed setting, etc

Ventilation independent operation is possible

When commercial ventilation fans or heat-exchange ventilation fans have been installed, they can be operated with this remote control (interlocked operation with the indoor unit or independent ventilation ON/OFF).

Timer Operation

Schedule timer (CZ-ESWC2)



Dimensions H 120 x W 120 x D 16 mm

Up to 64 groups (max 64 indoor units) can be controlled divided into 8 timer groups

- Six program operations (Operation/Stop/ Local permission/ Local prohibition) per day can be set in a program for one week
- Only operation or stop, remote controller local permission or remote controller local prohibition, and their respective combinations are possible.
 (Operation + local permission, stop + local prohibition, only local permission, etc.)
- Local prohibition and the combination of the three items of temperature setting, mode change, and operation/stop can be set at the time of installation.

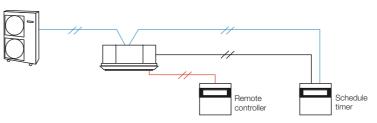
- A function for pausing the timer in case of national holidays has been added, and timer operation also can be stopped for a long time
- · By setting holidays or operation stop within one week, the timer can be paused just for that week.
- All timer settings can be stopped with the timer "ON/OFF effective" button. (Return to timer operation is made by pressing the button again.)

The power supply for the schedule timer is taken from one of the following.

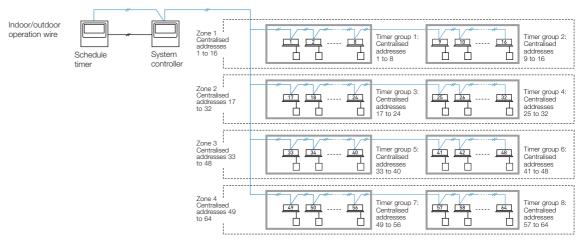
- Control circuit board (T10) of a nearby indoor unit (power supply wiring length: within 200m from the indoor unit).
- System controller (power supply wiring length: within 100 m from the indoor unit).

When the power supply for the schedule timer is taken from the control circuit board of the indoor unit, that indoor unit cannot be used with other control devices using the T10 terminal. As operation mode and temperature settings are not possible with the schedule timer, it must be used together with a remote controller, a system controller, an intelligent controller, etc. Also, as it does not have an address setting function, the control function of a system controller etc. must be used for address setting.

Connection example 1 (POWER SUPPLY FROM THE INDOOR UNIT)



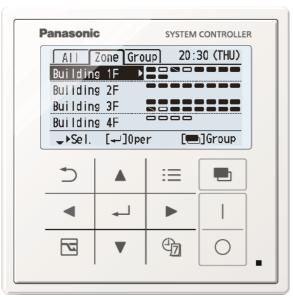
 $\textbf{Connection example 2} \ (\texttt{POWER SUPPLY FROM THE SYSTEM CONTROLLER } \ \texttt{AND ON/OFF CONTROLLER})$



FSV Controllers

Centralised Control Systems

System controller (CZ-64ESMC3)



Dimensions
H 120 x W 120 x D 16 + 52
(embedding dimension mm)

Power supply: AC 100 to 240 V I/O part:
Remote input part (effective voltage:DC24V) All operation,All stop,Demand 1,Demand 2
Remote output part (non voltage contact) Operation, Alarm (external power supply within DC 30V, max 0.5A)
Total wiring length: 1 km

Individual control is possible for max 64 groups, 64 indoor units.

- Control of 64 indoor units divided into 4 zones. (One zone can have up to 16 groups, and one group can have up to 8 units.)
- Control is possible for ON/OFF, operation mode, fan speed, air flow direction, operation monitoring, alarm monitoring, ventilation, remote controller local operation prohibition, etc.

Prohibition setting for Remote controller operation

Setting mode	ON/OFF	Mode	Temperature	Fan speed	Flap
Permit					
Prohibit 1	_				
Prohibit 2	_	_	_		
Prohibit 3		_	_	•	•
Prohibit 4		_			

In case of joint use with a wireless remote controller, there are limitations for the control mode. Please use only with setting "Permit" and "Prohibit1 (prohibition for ON/OFF)".

*Contents for Prohibit 1~4 can be modified.

- : Operation from the remote controller is possible.
 : Operation from the remote controller is prohibited.
- Operation from the remote controller is prohibited
- Joint use with a remote controller, an intelligent controller, etc. is possible

(The maximum number of connectable system controllers is 10, including other central controllers on the same circuit.)
(In case of joint use with a wireless remote controller, there are limitations for the control mode. Please use only with setting "Permit" and "Prohibit1 (prohibition for ON/OFF)".)

- Control of systems without a remote controller and of main/sub systems (a total of up to 2 units) is possible
- Weekly timer function
- 8 programs per day (with ON/OFF/Mode/Temperature/Central control setting items) for 1week (7days) can be set.
- Special holiday setting can ignore the timer operation temporary by keeping original timer setting. (Special holiday setting can be removed by same setting display.)
- 5 types of Energy saving function

Set temperature automatic return / Set temperature range limitation / Off remind / Off timer operation / Demand control timer

A control mode corresponding to the use condition can be selected from 10 patterns

A: Operation mode: Central control mode or remote control mode can be selected

Central control mode: The system controller is used as centralised control device. (Setting from a remote controller can be prohibited by prohibiting local operation from the system controller.)

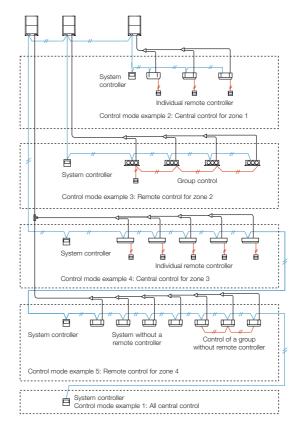
Remote control mode: The system controller is used as a remote controller. (Setting from the system controller can be prohibited by prohibiting local operation from another central control unit.)

B: Controlled unit number mode: All mode or zone 1, 2, 3, 4 mode can be selected

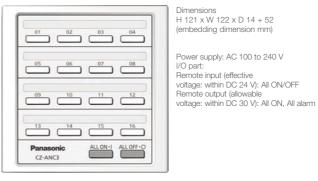
All mode: All, zone, or group unit can be selected.

Zone 1, 2, 3, 4 mode: Setting is possible only for the indoor units of zone 1, 2, 3, or 4.

Connection	Connection example				
		A Operation mode			
		Central control mode	Remote control mode		
	All mode	All central control Example 1	All remote control		
В	Zone 1 mode	Zone 1 central control Example 2	Zone 1 remote control		
Controlled unit number mode	Zone 2 mode	Zone 2 central control	Zone 2 remote control Example 3		
	Zone 3 mode	Zone 3 central control Example 4	Zone 3 remote control		
	Zone 4 mode	Zone 4 central control	Zone 4 remote control Example 5		



ON/OFF controller (CZ-ANC3)



- 16 groups of indoor units can be controlled.
- Collective control and individual group (unit) control can also be performed.
- \bullet Up to 8 ON/OFF controller (4 main, 4 sub) can be installed in one link system.
- The operation status can be determined immediately.

FSV Controllers

FSV Controllers

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

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

New Features

- Max 256 indoor unit [4 links x 64 units] can be controlled. In case of three or more systems [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.

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-

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.)

Remote Control

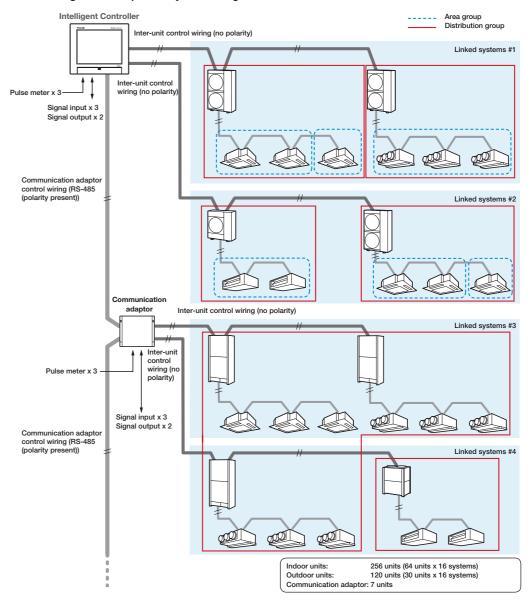
The LAN terminal on this unit enables you to connect it to a network. Connecting to internet will enable you to operate the unit and check the status using a PC from remote location.



Display image on the remote PC is same design as the controller unit.

System configuration

The following is an example of a system configuration.



Communication adaptor (CZ-CFUNC2)



^{*} Required when more than 129 indoor units are connected.



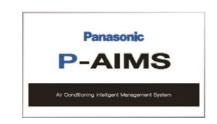
Panasonic total air conditioning management system P-AIMS

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 calender
- Detailed information display for alarms
- CSV file output with alarm history, operating status.
- Automatic data backup to HDD

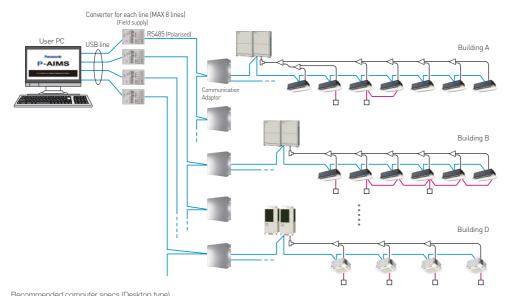








The P-AIMS is ideal for large areas/buildings such as shopping centers, universities and office buildings. Each line can have max.8C/A units, and control max.512 units. In total, 1024 indoor units can be controlled by 1 "P-AIMS" PC.



Recommended computer specs (Desktop type)

Operating system

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)

8GB or larger

SSD (Solid State Drive) 250GB or larger 1920 x 1080 (full HD) Recommended (1280 x 1024 (SXGA) minimum) Monitor

(Built-in speaker) External HDD 1920 × 1080 (full HD) Required (when installing Layout Display Software)
500GB or larger (An external power supply type is preferable because the HDD will be used for backing up data.)

Network adaptor equipped machine (when Web Software or BACnet Communication Software installed)

UPS (Field Supply) Select a UPS with a sine output wave form

P-AIMS optional software CZ-CSWAC2 for Load distribution

Load distribution calculation for each tenant

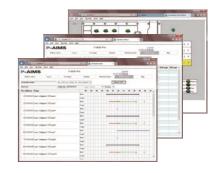
- Air-conditioner load distribution ratio is calculated for each unit (tenant) with used energy consumption data (m3, kWh).
- Calculated data is stored with CSV type file.
- Data of last 365 days is stored



P-AIMS optional software CZ-CSWWC2 for Web application

Web access & control from remote station

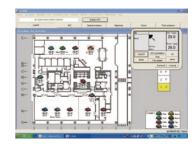
- Accessing P-AIMS software from remote PC.
- You can monitor/operate FSV systems by using Web browser (Internet Explorer).



P-AIMS optional software CZ-CSWGC2 for Object layout display

Whole system can be controlled visually

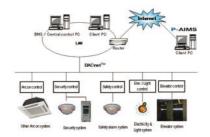
- Operating status monitor is available on the layout display.
- Object's layout and indoor unit's location can be checked at once.
- Each unit can be controlled by virtual remote controller on the display.
- Max 4 layout screens are shown at once.



P-AIMS optional software CZ-CSWBC2 for BACnet software interface

Connectable to BMS system

- Can communicate with other equipment by BACnet protocol.
- FSV systems can be controlled by both BMS and P-AIMS.
- Max 255 indoor units can be connected to 1 PC (that has P-AIMS basic & BACnet software).



FSV Controllers

FSV Controllers

T10 Terminal for External Control (Digital Connection)

Connecting an FSV indoor unit to an external device is easy.

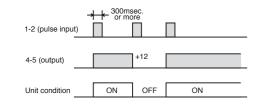
The T10 Terminal featured in the electronic circuit board of all indoor units enables digital connection to external devices.





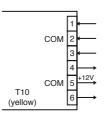
1. T10 Terminal Specification (T10:CN061 at indoor unit PCB)

- Control items: 1. Start/stop input (eg hotel key card, push button operation)
 - 2. Remote controller prohibit input
 - 3. Operation status output (eg fresh air fan)
 - 4. Fault status output



NOTE: The wire length from indoor unit to the Relay must be within 2.0m. Pulse signal changeable to static with JP cutting. (Refer to JP001)

Example of wiring



Condition

- 1. 1-2 (Pulse input): Unit ON/OFF condition switching with a pulse signal. (1 pulse signal: shortage status more than 300msec.or more)
- 2. 2-3 (Static input): Open/ Operation with Remote is permitted.(Normal condition) Close/ Remote controller is prohibited.
- 3. 4-5 (Static output): 12V output during the unit ON. / No output at OFF.
- 5-6 (Static output): 12V output when some errors occur / No output at normal.

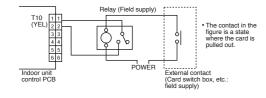
2. Usage Example

Forced OFF control

Condition

1-2 (Static input): Close/ Operation with Remote is permitted. (Normal condition) Open/ Unit is forcibly OFF and Remote controller operation is prohibited.

• Example of wiring



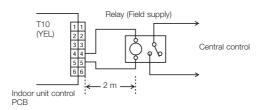
NOTE: The wire length from indoor unit to the Relay must be within 2.0m

Operation ON/OFF signal output

Condition

4-5 (Static output): 12V output during the unit ON / No output at OFF

Example of wiring



NOTE: The wire length from indoor unit to the Relay must be within 2.0m Pulse signal changeable to static with JP cutting. (Refer to JP001)

Interfaces for External Control (Digital Connection)

Seri-Para I/O unit for each indoor unit (CZ-CAPBC2)



System example Remote station

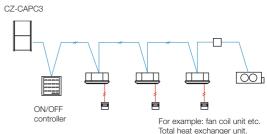
- Control and status monitoring is possible for individual indoor unit (1 group).
- In addition to operation and stop, there is a digital input function for air speed and operation mode.
- Temperature setting and measuring of the indoor suction temperature can be performed from central monitoring.
- The analog input for temperature setting is 0 to 10 V, or 0 to 140 Ohm.
- Power is supplied from the T10 terminal of the indoor units.
- Separate power supply also is possible (in case of suction temperature measuring).

Interface adaptor (CZ-CAPC3)



 Control and status monitoring is possible for individual indoor unit (or any external electrical device up to 250 V AC, 10 A) by contact signal.

System example



Seri-Para I/O unit for outdoor unit (CZ-CAPDC2)



sions H 80 x W 290 x D 260 mm

Power supply Single phase 110-120/220-240 V (50/60 Hz), 18 W Input Batch operation/Batch stop (non-voltage contact/DC 24 V, pulse signal). Cooling/Heating (non-voltage contact/static signal). Demand 1/2 (non-voltage contact/static signal) (Local

stop by switching)

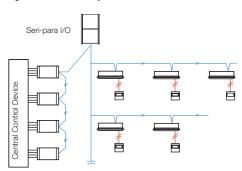
Output Operation output (r

Operation output (non-voltage contact). Alarm output (non-voltage contact)

Wiring length Indoor/0

Indoor/Outdoor operation lines: Total length 1 km.
 Digital signal: 100 m or shorter

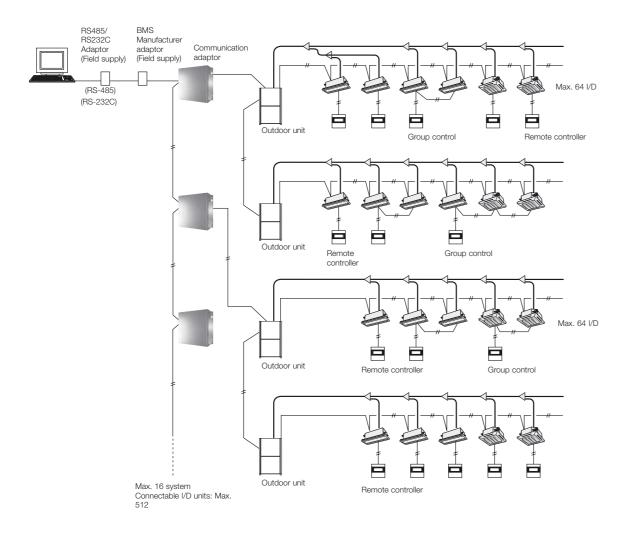
System example



- This unit can control up to 4 outdoor units.
- From the centre control device, mode changing and batch operation/batch stop are possible.
- Required for demand control.

Serial Interface for 3rd Party External Controller

Example of 3rd party BMS connection with CZ-CFUNC2 (For the detail please consult to authorized dealer)



Functions via communication adaptor [CZ-CFUNC2]				
	Unit ON/OFF			
	Mode-change			
	Room temperature setting			
A /O't +ti	Fan speed setting			
A/C unit settings	Flap setting			
	Central control setting			
	Filter-sign clear			
	Alarm reset			
	Unit ON/OFF status			
	Operation mode			
	Setting temperature			
	Fan speed status			
A/C unit status	Flap status			
	Central control setting			
	Filter-sign situation			
	Correct/incorrect status			
	Alarm code			



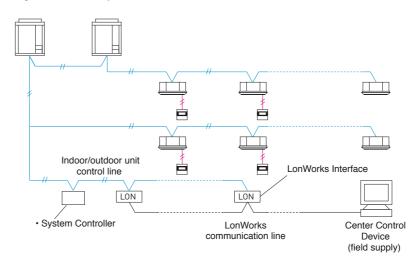
Serial Interface for LonWorks Network

LonWorks Interface (CZ-CLNC2)



- This interface is a communications converter for connecting LonWorks to the control network of ESV
- From the host connected to LonWorks, basic settings and status monitoring is possible for up to 16 groups of indoor units.

System example

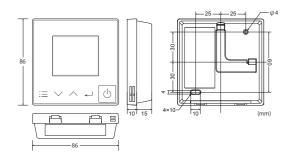


Functions

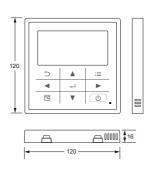
		Start/stop
	Settings for each group of indoor units	Temp. setting
A/C unit settings from the LonWorks		Operation mode
communicator	3	Option 1 settings
		Option 2 settings
	Settings for all units	Emergency stop
		Start/stop
		Temp setting
		Operation mode
		Option 1 settings
A/C unit status notifications made to the LonWorks communicator)	Option 2 settings
		Alarm status
		Indoor units with active alarms
		Room temp.
		A/C unit status
Configuration properties		Transmission intervals settings
		Minimum time secured for transmission

FSV Controller External Dimensions

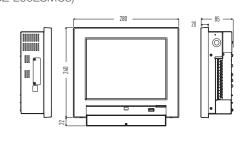
SIMPLIFIED WIRED REMOTE CONTROLLER (CZ-RTC6)



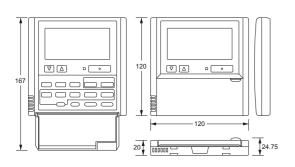
HIGH-SPEC WIRED REMOTE CONTROLLER (CZ-RTC5)



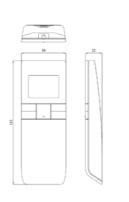
INTELLIGENT CONTROLLER (CZ-256ESMC3)



TIMER REMOTE CONTROLLER (CZ-RTC4)



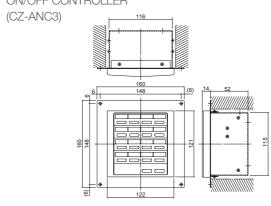
WIRELESS REMOTE CONTROLLER (CZ-RWS3)



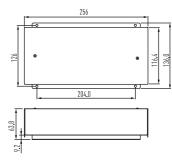
ON/OFF CONTROLLER

COMMUNICATION ADAPTOR

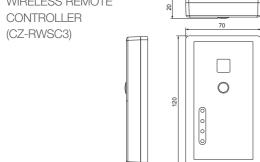
(CZ-CFUNC2)



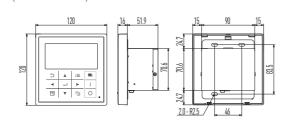
SERI-PARA I/O UNIT FOR EACH INDOOR UNIT (CZ-CAPBC2)



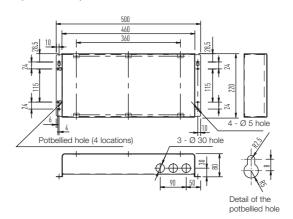
SEPARATE RECEIVER FOR WIRELESS REMOTE



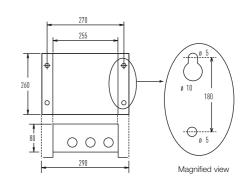
SYSTEM CONTROLLER (CZ-64ESMC3)



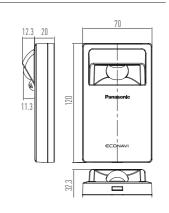
LONWORKS INTERFACE (CZ-CLNC2)



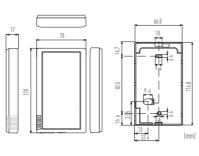
SERI-PARA I /O UNIT FOR OUTDOOR UNIT (CZ-CAPDC2)



ECONAVI SENSOR (CZ-CENSC1)



REMOTE SENSOR (CZ-CSRC3)



VRF Renewal

An important drive to further reduce the potential damage to our ozone



RENEWAL R22 is a HCFC and classified as an ozone depleting substance banned under the Montreal Protocol.

Many existing R22 VRF Systems will need to be replaced over the coming years by more modern and efficient R410A VRF Systems.



Recognising consumers' anxiety and financial difficulties to adapt to the new R22 regulations, Panasonic developed a new cost-effective and simple solution to switch to R410A refrigerant.

What is Panasonic VRF Renewal?

Panasonic VRF Renewal enables reuse of good quality existing R22 pipe work to be installed with a new high efficiency R410A system.

What's so unique about Panasonic's solution?

By enabling reuse of existing R22 piping, consumers get to save substantially from reduced installation cost, and without any sacrifices to warranty or performance.

Ozone Depletion Potential				
R22	HCFCs	0.055		
R410A	HFC	0		
R407C	HFC	0		

R22 - The reduction of Chlorine critical for a cleaner future

Before renewing piping, be sure to contact an authorised Panasonic dealer for advice.

VRF Renewal

Panasonic's Renewal system allows a completely new VRF system, indoor and outdoor units, to be installed using the existing systems pipe work. Panasonic's advanced technology enables the system to work with previously installed pipe work by managing the working pressure within the system down to R22 (3.3 bar) levels. This ensures the system works safely and efficiently without loss of capacity.

The new equipment has potential to increase COP/EER by using state of the art inverter compressor and heat exchanger technology.

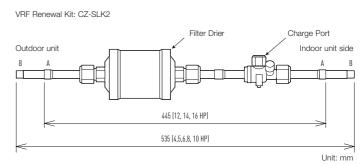
Having contacted your Panasonic supplier regarding pipe work restrictions and gained approval to use the Panasonic Renewal System there are three main tests that have to be carried out to ensure that the system can be used effectively.

Firstly a thorough inspection of the pipe work must be carried out and any damage must be repaired. Secondly an oil test has to be carried out to ensure that the system has not been subject to a compressor burnout during its lifetime.

Lastly a VRF Renewal Kit (CZ-SLK2) has to be installed within the pipe work to ensure that the system is cleaned of any oil residue.

VRF Renewal Kit (CZ-SLK2) and Sight Glass

The following shows an overview of the VRF Renewal Kit (CZ-SLK2) that is required when existing tubing is reused. If the exact tube length and tube size of the existing tubing are uncertain, attach a sight glass in accordance with the figure below. It will be used for checking the amount of additional refrigerant charge



VRF Renewal

Attaching the Renewal Kit and sight glass

- \bullet To adjust the limited pressure level into 3.3 MPa, special setting is necessary on site.
- A filter drier shall be attached to the liquid tubing of each outdoor unit.
- Do not need to remove Renewal Kit after a test run is performed as it can be retained for normal operation
- When attaching Renewal Kit, be extra careful with regards to installation location and orientation of the filter drier and ball valve. Any mistakes will complicate maintenance work.
- Thermal insulation material (field supply: heat resistance of 80°C or higher and thickness of 10 mm or greater) shall be applied to the Renewall Kit.
- The filter drier of the Renewal Kit may need to be replaced depending on the condition of the existing unit. Use a Danfoss DMB 164 as the replacement filter drier (field supply).

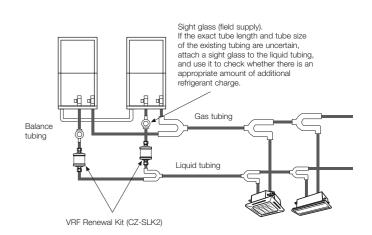
Connecting tube dimensions (Inch mm) A Ø 1/2 (12.7) (12,14,16 HP)

B Ø 3/8 (9.52) (8,10 HP)

Note: If the tube size does not match that of the existing tubing, use a reducer (field supply) to adjust the tube diameter.

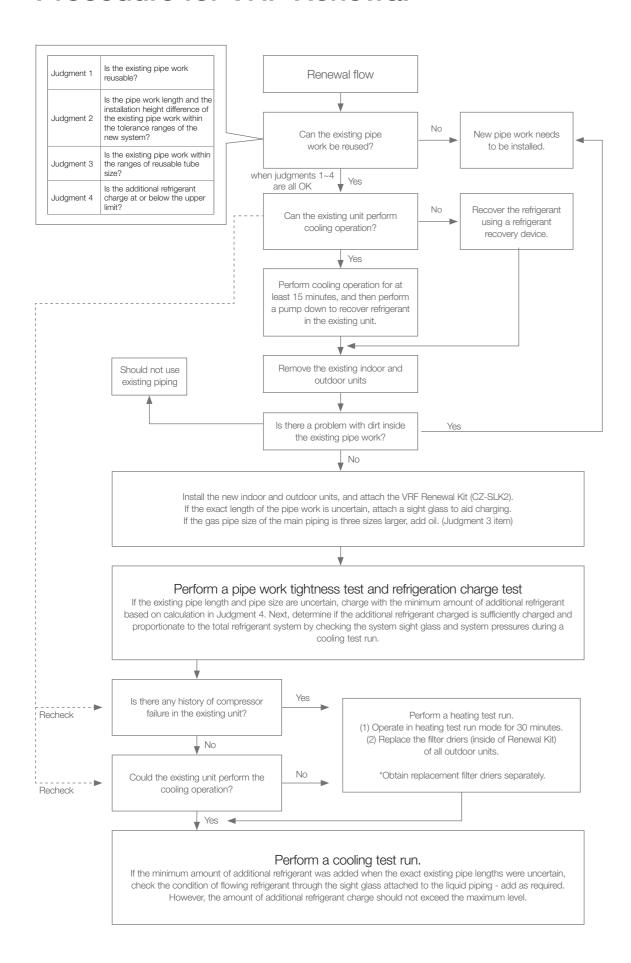
Sight glass (field supply)

If the exact tube length and tube size of the existing tubing are uncertain, attach a sight glass to the liquid tubing, and use it to check whether there is an appropriate amount of additional refrigerant charge.



VRF renewal VRF renewal

Procedure for VRF Renewal











A Globally Trusted Air Conditioning Brand

With roots going back 60 years, the Panasonic Air Conditioning Business Division has grown to become a multinational company recognised around the world. Driven by a never-ending quest for product innovation, the group has evolved from manufacturing compressors to providing comprehensive air conditioning solutions. Panasonic has become a brand that people trust to deliver products with superior quality and reliability.

Panasonic's persistent innovation spurs the evolution of air conditioning solutions.

Starts production of absorption chillers

Introduces first
GHP (gas heat pump) VRF air conditioner



1985

Releases the world's first large-capacity modular combination VRF system with simultaneous heating/cooling

Releases the world's first large-capacity modular combination VRF system

Introduces the world's first simultaneous 3-pipe heating/cooling VRF system

1957

Start of the Home Cooler business

1958

 Panasonic (using the National brand) introduces its first Home Cooler, a window-type air conditioner model



- Electrical Appliance Business Group (Kadoma) starts manufacture of Home Coolers
- Sales of Home Coolers begin

1961

 Starts exports of Home Coolers to South Vietnam

1965

 Launches Room Coolers



1968

- Begins development of rotary compressors
- The high efficiency and quality of these compressors draw interest from domestic and overseas air conditioner manufacturers
- External sales begin

1969

 Begins production at the Kusatsu Factory in Shiga Prefecture, Japan

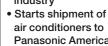
1972

- MAICO, the Division's first overseas manufacturing base, established in Malaysia
- Begins operating twin-based system in Japan and Malaysia



1983

- Launches inverter air conditioners
- Starts sale of Panasonic's first inverter air conditioners
- Inverters grow to become a core technology in the air conditioner industry



1985

Begins development of scroll compressors

1990

 Launches world's first air conditioner equipped with compact scroll compressor

1993

- Establishes Matsushita-Wanbao (Guangzhou) Air Conditioner (MWAC)
- Establishes Matsushita-Wanbao (Guangzhou) Compressor (MWCC)
- Establishes Matsushita Air Conditioner Engineering (Matsushita ACE)

2003

 Launches automatic filter-cleaning function for air conditioners (AC robot)







- Debuts quiet, lightweight, compact EcoCute systems with improved energy-saving technology
- EcoCute adopts highly efficient, accumulator-less CO₂ scroll compressor
- CO₂ heat-pump hot water heater (Eco Cute) uses non-toxic, noncombustible natural refrigerant (CO₂) in place of freon, to reduce environmental impact
- Begins production of new energysaving mini-VRF series multi-split packaged air conditioners for residential use

2005

 Panasonic products become extremely successful in Japan's air conditioner market as innovations such as airstream robots and motion sensors help grow Panasonic's market share

2006

 Cumulative global production of Panasonic compressors reaches 200 million units

2008

- Starts air-to-water heat pump business in Europe
- Hot water heating considered an ecofriendly alternative to conventional fueltype heating systems
- At the Energy Conservation Grand Prize awards, Panasonic air conditioners wins the Energy Conservation Center of Japan (ECCJ) Chairman's Prize, whilst EcoCute wins the Agency of Natural Resources and Energy Director General's Prize (prizes presented by ECCJ)
- nanoe[™] technology installed on room air conditioners

€•nanoe

2009

- Establishes sales company in Europe (PHAAE) dedicated to selling air conditioners
- Panasonic HA Air-Conditioning Europe (PHAAE) strengthens company's commercial air conditioning business

2010

- Begins collaboration with SANYO air conditioner business
- Through share exchange, SANYO and Panasonic Electric Works become wholly owned subsidiaries

2012

- Launches FSV series of large-capacity VRF air conditioners
- New Panasonic Group inaugurated

2013

• Expands VRF operation in Malaysia



2015

• Air-Conditioner Company established

2016

- Partnership with Schneider Electric begins
- At the Energy Conservation Grand Prize awards, WX series room air conditioner wins the Ministry of Economic,
 Trade and Industry Prize for energy conservation



2017

- Celebrates 60th anniversary in air conditioning business
- Division completes its first acquisitions: A.M.P. Air Conditioning Ltd of the UK. and UNION RHAC TECNOLOGIA of Brazil

2018

 Establishes commercial air conditioner sales company in China (PAPAECN)

2019

- Name changes to Heating and Cooling Solutions Business Division
- Panasonic and Systemair announce development of integrated HVAC&R and ventilation solutions
- Panasonic and Welcome Air Tech's SAIVER announce development of connected air handling and VRF solution for Southeast Asia

2021

- R32 mini-VRF launches in Europe
- Heating & Ventilation A/C Company is established

2022

nanoe[™] X Generator Mark 3 (100 x) is introduced

Reliability and Durability

At Panasonic, we believe that the best air conditioner is one that works quietly and effectively in the background whilst minimising its impact on the environment. People who use our products can look forward to long years of high-quality performance without the need for constant maintenance. As part of our rigorous design and development process, Panasonic air conditioners undergo a variety of stringent tests to ensure their effectiveness and long-term reliability. Tests for durability, waterproofing, shock resistance, and noise are conducted on component parts or on the finished products themselves.

As a result of all of these painstaking efforts, Panasonic air conditioners meet even the most demanding industrial standards and regulations in every country where they are sold.



Applying advanced technologies that truly make life better, we live by an unparalleled commitment to product quality. Our approach to product development originates in the DNA of Japanese craftsmanship.

Panasonic is building on the Japanese tradition of uncompromising quality control worldwide, developing and manufacturing fine products and delivering them to customers everywhere.



Testing laboratory Panasonic Gunma, Japan (PAPARS)

Durability

At Panasonic we know the importance of a long service life with minimal maintenance. That's why we subject our air conditioners to a wide range of stringent durability tests.



Long-Term Durability Test

To ensure durability and stable operation for many years, we conduct a longterm continuous operation test under conditions that are much more severe than actual operating conditions.



Compressor Reliability Test

After the continuous operation test, we remove the compressor from a selected outdoor unit, disassemble it, and examine waterproof specifications. Contact the internal mechanisms and parts for long-term performance under harsh conditions.



Waterproofing Test

The outdoor unit, which is subject to rain and wind, complies with IPX4 sections on printed circuit boards are potential failure. This helps ensure reliable resin-potted to prevent adverse effects caused by exposure to water (an unlikely occurrence).

International Standard Quality

To uphold the company's reputation around the world, Panasonic strives continuously to offer the highest quality with the lowest possible environment impact.



Reliable Parts That Meet or **Exceed Industrial Standards**

In every country where they are sold, Panasonic air conditioners comply with all required industrial standards and regulations. In addition, Panasonic conducts stringent testing to ensure the reliability of parts and materials.



RoHS / REACH **Compliant Parts**

All Panasonic parts and materials comply with Europe's strict RoHS/REACH environmental regulations. During the development and production of parts. stringent inspections are conducted on over 100 materials to ensure that no hazardous substances are included.



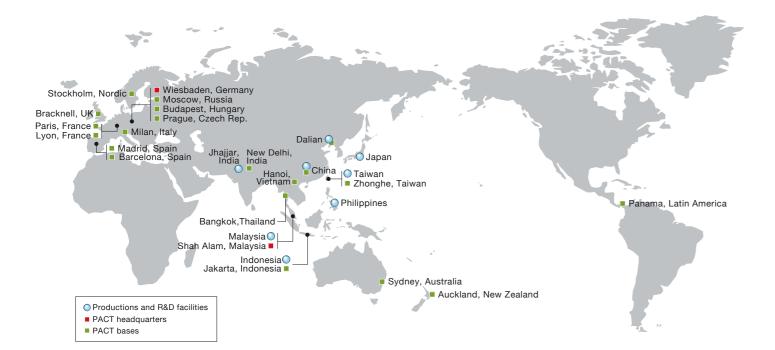
Sophisticated **Production Process**

Panasonic's air conditioner production lines employ state-of-the-art factory automation technologies to ensure products are manufactured efficiently and with uniformly high levels of quality and

Global Networking of Heating and Cooling Solutions

In any indoor environment, eco-friendly air conditioning plays a vital role in maintaining our health, comfort, and productivity. Whether it's an office, a hotel, or a shopping mall, every building matters. That's why Panasonic has developed energy-efficient large-scale heating and cooling solutions to suit a variety of business applications. As one of the pillars of Panasonic's BtoB operations, our heating and cooling sector 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.

Panasonic air conditioning solutions are designed from the ground up to meet the specific needs of each location, whilst placing a premium on efficiency and reliability. At every stage, we seek to make optimal use of resources and energy to create solutions that benefit the environment.



PACT Training Facilities

The 42 Panasonic Air Conditioning Training Centers (PACTs) around the world provide a wide range of support for Panasonic's business-use air conditioning systems. PACT represents Panasonic's unwavering commitment to our sales partners, distributors, and service teams in Europe, Asia, Oceania, and the Americas.





Quality Assurance from Japan to the World

With a diverse network of production and R&D facilities. Panasonic delivers innovative products incorporating cutting-edge technologies that set the standard for air conditioners worldwide. As our business expands globally, we strive to transcend borders with our superior-quality products.

Japan



Heating & Ventilation A/C

Established October 2021



Heating & Ventilation A/C Company Heating & Cooling Solutions Business

Established April 1972



Heating & Cooling Solutions Business

Commercial Air-Conditioning Business Unit

Panasonic Appliances Air-Conditioning and Refrigeration Systems Co., Ltd.

Established July 1959

Cold-chain/refrigeration products

Malaysia



Panasonic Appliances Air Conditioning Malaysia

Established April 1972

R&D for air conditioners

PAPARADMY

Panasonic Appliances

Air Conditioning R&D

Malaysia Sdn. Bhd.



PAPAMY Compressor

Established January 1987 Rotary compressors for



Established September 1997

China



PAPAGZ Panasonic Appliances Air Co., Ltd.

Established June 1993

Taiwan

PWAPCGZ Panasonic Wanbao (Guangzhou) Co., Ltd.

nic Taiwan Co., Ltd.

 Automotive air conditioners 1970

Established October 1962

Air conditioners

Established June 1993 Rotary compressors for air conditioners

automotive air conditioners

Indonesia

Panasonic R&D Center

Air conditioners

R&D for home appliance



PAPARDL Panasonic Appliances Refrigeration (Dalian) Co..

Established September 1992 Air conditioners

Philippines



Panasonic Manufacturing Philippines Corporation

Established September

Air conditioners

Established December 2012

PACT Headquarters and Bases

EUROPE



... Nordic Stockholm







Czech Rep. Prague

UK Bracknell

ASIA







Thailand Bangkok # Taiwan Zhonghe

Indonesia Jakarta

OCEANIA

Australia Sydney New Zealand Auckland

AMERICAS



India

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



Spain LAVIDA Hotel PGA Cataluña Resort

VRF 3-way FSV MF2 series 8 systems Indoor Units: 116 units





Indonesia Patra Jasa Hotel



VRF 2-way ME1&LE1 series

Spain Hotel Claris 5 GL





Russia River Park Hotel



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



Indoor Units: 144 units Cooling Capacity: 592 kW / 168.33 USRT

Thailand Areeva



Germany The LEGOLAND Castle Hotel Ireland K Club, Co. Kildare



VRF 3-way FSV MF2 series 10 systems Indoor Units: 70 units
Cooling Capacity: 200 kW / 56.87 USRT

OFFICE

Malaysia Gapruna project

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



VRF 2-way FSV ME1 series



England Soapworks



VRF 3-way MF2 series



Malaysia Plaza 33 Office Block A



VRF 2-way FSV ME1 series

Spain PTA Malaga

VRF 2-way ME1 series







VRF 7-way FSV MF1 series 19 syste

Indoor Units: 85 units

Indoor Units: 277 units 2,045 kW / 581 USRT

HonaKona King Yip Road



VRF FSM LA1 series Indoor Units: 294 units

New Zealand IAG Christchurch



VRF 3-PIPF FSV MF2 series-25 systems

RETAIL

Italy Le Centurie CENTRO COMMERCIALE



VRF 3-way MF1 series Indoor Units 57 units

India Sai Aarav Motors, Mehsana



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

Russia Sun City Mall



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

United States Shippensburg University

SCHOOL



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

Indonesia Persada Hospital



Persada Hospital

SCHOOL

Malaysia Xiamen University



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

Russia Technopark of Nobosibirsk Academgorodok





HOSPITAL

Indonesia Bekasi Hospital



42 systems Indoor Units: 283 units



VRF 2-way FSV ME1 series



HOSPITAL

France Clinique Dentaire Ablis (Dental Clinic)



mini VRF 2-way mini FSV LE1 series 3 systems 36.3 kW / 10.3 USRT

Hong Kong The Green Project

VRF FSM LA1 series 739 system

Twenty series 538 systems

Indoor Units: 999 units

6.475 kW / 1.875 USRT

RESIDENTIAL

China Star River Group Luxury Condominium



VRF Master series 966 syste Indoor Units: 3,948 systems

16,737 kW / 4,755 USRT





Singapore Punggol Eco-Town



Hong Kong Gloucester Road Project

Indoor Units: 255 units Cooling Capacity: 1,391 kW / 395 USRT

India Royal Orchids Eco-Green Homz



22 systems

India Heera Windfaire



VRF 2-way FSV ME1 series 96 systems VRF 3-way 12 systems

Panama Mosaic Building PANAMA PACIFICO



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