# **EVERY BUILDING MATTERS**

# RESIDENTIAL & LIGHT COMMERCIAL AIR CONDITIONERS **2015 / 2016**





#### **Panasonic**

Panasonic Australia Pty. Limited. ACN 001 592 187 ABN 83 001 592 187

www.panasonicair.com.au

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# A Better Life, A Better World

As we move towards our Centenary in 2018, our new brand slogan encapsulates Panasonic's vision of expanding and pursuing a better life for each of our customers. Working with our many partners, we operate in a wide range of fields such as the home, community, business and travel realising a better world globally through its contribution to the environment and other activies, in both its B2C and B2B businesses.

# For Future Generations

Panasonic aims to become the No.1 green innovation company in the electronics industry



# The 2014 Best Global Green Brands

Interbrand has announced its 2014 ranking of Best Global Green Brands. In this year's ranking Panasonic was ranked number five, fulfilling our eco pledge "For future generations, Panasonic aims to become the No.1 Green Innovation Company in the Electronics Industry."

At Panasonic, our eco pledge is more than just a tagline; it's a harmonious way of life that we take very seriously. Panasonic was founded based on the philosophy of contributing to progress in society and to enriching people's lives through business activities. By offering products that help

#### 2014 Brand Ranking Top 10

- 1 FORD
- 2 TOYOTA
- 3 HONDA
- 4 NISSAN
- 5 Panasonic
- 6 NOKIA
- 7 SONY
- 8 ADIDAS
- 9 DANONE
- 10 DELL

people lead better, greener lives, we are making good on our strong commitment to continuous environmental sustainability management.

Interbrand's Best Global Green Brands 2014 report is a look at sustainability with performance data powered by Deloitte and consumer perception data. Interbrand evaluates organisations based on market perception; actual environmental performance; and products and services.\* Source: Best Global Green Brands 2014, Interbrand. Go to www.bestglobalgreenbrands.com for more information.



# Panasonic Air Conditioning Designed To Care For Your Projects

With more than 30 years of experience, exporting to more than 120 countries around the world, Panasonic is unquestionably one of the leaders in the air conditioning sector. The company is also a world leader in innovation as it has filed more than 91,539 patents to improve its customers' lives. Moreover, Panasonic is determined to remain at the forefront of its market. In all, the company has produced more than 200 million compressors and its products, particularly residential air conditioners, now hold the No. 1 market share in Japan and other major countries in Asia. You can be assured of the extremely high quality of Panasonic's air conditioners.

This wish to excel has made Panasonic the international leader in air conditioning solutions. The company's industrial capacity and firm commitment to the environment has enabled it to open new avenues of research and to develop innovative technologies which enhance its customers' way of life. Panasonic offers a range of turnkey air conditioning solutions for homes, medium-sized buildings such as offices and restaurants. These offer maximum effectiveness, comply with the strictest environmental standards and meet the most avant-garde construction requirements of our time.

At Panasonic we know what a great responsibility it is to install cooling and heating systems. Because offering you the best solutions in cooling and heating matters.

**EVERY BUILDING MATTERS** 

#### WHAT'S NEW

**Exclusive Feature 1** 



Using sensors and precise control programs, ECONAVI analyses room conditions and adjusts cooling and heating power to reduce wasted electricity.



#### **Exclusive Feature 2**

# Deluxe Wired Remote Controller

Features a large LCD and touch keys for easy operation, and multiple energy-saving functions.





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**Exclusive Feature 1 Panasonic** 

# ECONAVI reduces inefficient air conditioning

Providing outstanding energy-saving performance, Panasonic's large capacity air conditioners can be connected to ECONAVI to detect when energy is being

ECONAVI senses the presence or absence of people and the level of activity in each area of a room. When unnecessary heating or cooling is detected, indoor units are individually controlled to match room conditions for energy-saving opera-







High Static Duct

ECONAVI Sensor CZ-CENSC1

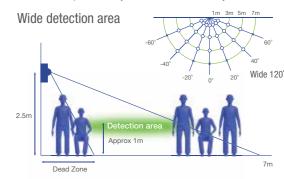
Applicable to all 4 types of indoor units\*

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

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

# Sensors are remotely located to maximise the energy-saving effect

When sensors are built into the indoor unit, pillars, walls, cabinets and other fittings can obstruct the sensors, reducing the area of detection and lowering the energy-saving effect. Panasonic sensors can be located any where in the room which enables the optimum layout for sensors in any location.



A sensor is remotely set to maximise the detection area.

Installation flexibility ready for indoor unit layout changes.

Case study at coffee shop



on conditions, the setting can change to Switch Off After 3 Hours.

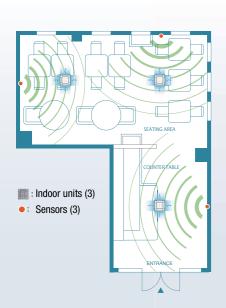
## Up to 28% verified energy-saving\* With the set temperature increased by 2°C during cooling.

**EXAMPLE 2** 

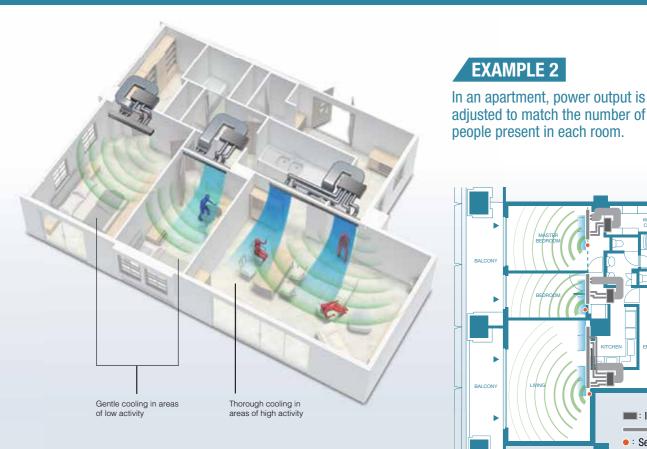
\*Panasonic test room (29m2). Indoor unit: S-100PU1 (Single 4-way Cassette 10kW) Outdoor unit: U-100PE1 (Single DLX 10kW). Cooling operation, set temperature of 24 to 28°C, Hi airflow setting.

#### **EXAMPLE 1**

In a coffee shop power is reduced to match the number of customers in each area.







: Indoor units (3)

: Grilles (3)

Exclusive Feature 2

# Deluxe Wired Remote Controller

Easy-to-use, with multiple energy saving functions at your fingertips.



# 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.



# 2 Stylish, Easy-to-use Touch Key Design

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



# Energy consumption display and Log function

Panasonic

# Consusp. (1 day) 20:30 (THU)

#### Day



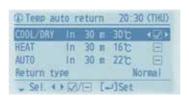
Week



#### Energy Consumption Monitoring Display

Graphs of daily, weekly and annual power consumption are displayed. A visual representation of power consumption lets you confirm the energy-saving effect and quickly detect energy-wasting operation. This helps to further improve energy saving.

#### 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.

# #: Temp range 20:30 (THU) Lower limit — Upper limit COOL/DRY 18℃ — 30℃ 4☑ → HEAT 16℃ — 26℃ □ AUTO 17℃ — 27℃ □ Sel 4 → ☑/□ [→]Set

#### Temperature Setting Range Limitation

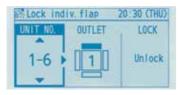
You can set the upper and lower temperature limits. Doing this helps reduce power consumption due to over cooling or heating. Setting is possible in the Cooling, Heating and Dry modes.



#### 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 Louver Control (For 4-way cassette U1 type)

One 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



#### Service Contact Address

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

#### **Convenient Controls**



#### Operation Lock

Operation keys can be locked to prevent users accidentally changing the temperature setting, 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-aglance verification of maintenance information with the remote controller.



#### Filter Information

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



#### **Quiet Operation Mode**

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



#### Repeat OFF Timer

You can set the unit to switch off after a desired period of time.



# Setting Information Lists

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



#### **Function List**

Control Item						
	Basic instructions					
	FLAP					
	Individual louver control (Lock individual flap for 4-way cassette)					
	ON/ OFF timer					
	Weekly timer					
Menu items	Filter information					
wenu items	Outing function					
	Quiet operation mode					
	Power consumption monitor					
	Energy saving					
	Initial settings					
	Ventilation					
	Temperature auto return					
	Temperature setting range					
Energy Saving	Auto shutoff					
Lifergy ouving	Schedule peak cut					
	Repeat off timer					
	ECONAVI on/ off					
	Outdoor unit error data					
	Service Contact address					
	RC setting mode					
Maintenance	Test Run					
Function	Sensor Information					
	Service check					
	Simple/ Detailed Settings					
	Auto address					

Panasonic provides ideal solutions for large-capacity air conditioning needs.





Indoor Unit

CAPACITY (kW) 6.0kW 7.1kW 10.0kW 12.5kW 14.0kW 20.0kW Ducted S-60PE1R5A S-71PE1R5A S-100PE1R5A S-125PE1R5A S-140PE1R5A S-200PE2R5 NEW High Static Pressure Model **ECONAVI** for 6.0kW-14.0kW **ECONAVI** ready Page 26-27 for 20.0kW (Except for 20.0kW) S-60PF1R5A NEW Ducted NEW S-71PF1R5A NEW S-100PF1R5A NEW S-125PF1R5A NEW S-140PF1R5A NEW Mid Static Pressure Model ECONAVI























S-60PU1R5A









S-140PU1R5A

**Under Ceiling** 





6.0kW





S-100PT2R5A



S-125PT2R5A



S-140PT2R5A

14.0kW

Outdoor Unit







U-60PE1R5A



7.1kW

U-71PE1R5A



10.0kW





12.5kW









20.0kW

U-200PE1R8\* NEW

(\*3-phase)

# Outdoor Unit

DC Inverter allows better comfort and energy savings



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- Complies with all necessary Safety Approvals to ensure quality and safety
- Top-class EER:4.20 / COP:4.31
   (4 Way Cassette type:10.0kW)
- Demand Response (DRED) compatible
- Cooling operation is possible when outdoor temperature as high as 46°C
- DC inverter technology combined with R410A for excellent efficiency
- Maximum piping length:180m
- Cooling operation is possible when outdoor temperature as low as -15°C\*1
- Heating operation is possible when outdoor temperature as low as -25°C\*2
- One ampere starting current
- Auto restart from outdoor unit

\*1 Except 20.0kW \*2 20.0kW only

#### **Product Quality and Safety**

All Panasonic air conditioners undergo strict quality and safety tests before sale. This rigorous process includes obtaining all necessary Safety Approvals, to ensure that all air conditioners we sell are not only built to the highest market standards, but are also completely safe.



#### **Energy-saving concept**

The use of energy saving design for the structure of fans, fan motors, compressors and heat exchangers resulted in high COP value which ranked as one the top class in the industry. In addition, use of highly efficient R410A refrigerant reduces CO2 emission and lowers operating costs.



- Compact & High Efficient Compressor
- A large inverter compressor has been adopted. The inverter compressor is superior in performance with improved partial-load capacity.
- Printed Circuit Board (S-LINK)

The number of PCB was reduced from 3 into 2\* pieces to improve maintenance work.

3 DC Fan Motor

Checking load and outside temperature, the DC motor is controlled for optimum air volume.

New Large
Diagonal (520mm)
Air Flow Fan

The newly designed fan has been developed to inhibit air turbulence and to increase efficiency. As fan diameter has been increased to 520mm\*, the air volume has been increased whilst maintaining a low sound level.

High-Efficiency
Heat Exchanger

The heat exchanger and the size of the copper tube in the heat exchanger has been redesigned to increase efficiency.

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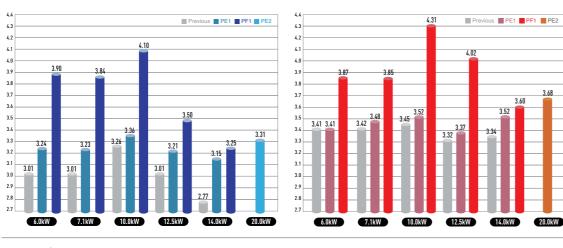
\*Except for 20.0kW

# **Outdoor Unit**

#### Improved Energy Saving

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

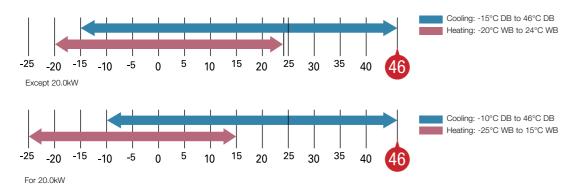
#### Cooling (Ducted)



Heating (Ducted)

#### Wide Operating Range

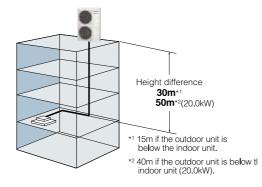
- Cooling operation is possible when outdoor temperature as low as -15°C\*1
- Cooling operation is possible when outdoor temperature as high as 46°C
- Heating operation is possible when outdoor temperature as low as -25°C\*<sup>2</sup> The remote controller temperature setting offers a range from 16°C to 30°C.
- \*1 Except 20.0kW \*2 20.0kW only



# Increased Piping Length for Greater Design Flexibility

Adaptable to various building types and sizes Max. piping length: 50m (6.0kW, 7.1kW),

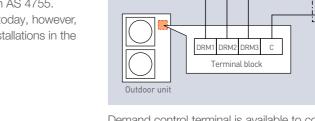
75m (10.0kW, 12.5kW, 14.0kW), 180m (20.0kW)



#### Demand Response Compliant

Panasonic air conditioners are equipped with a Demand Response Enabling Device (DRED) which complies to both AS 4755 and AS 3823. Panasonic continues to design and develop products that are tailored to local needs and requirements. This ensures that Panasonic products that you are installing today are compliant with the demand response standards that are likely to be implemented shortly.

The Equipment Energy Efficiency (E3) program has been supporting the development of Demand Response Enabling Device (DRED) standards for airconditioners which should comply with AS 4755. DRED functionality is not compulsory today, however, this capability will be required for all installations in the very near future



Demand control terminal is available to control 0-50-75-100% of capacities.



#### Compact and Lightweight

The weight is only 98 kg. (10.0kW, 12.5kW, 14.0kW) Hence it is easy to carry, easy to install.



#### Compact & Flexible-design

The slim and lightweight design can be installed in various places.

\* 14.0kW or smaller capacity unit



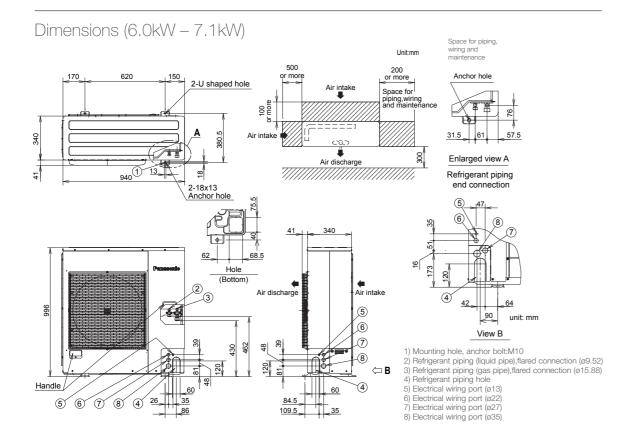
#### Quiet Mode

Quiet mode reduces outdoor operating sound by 5dB. External input signal is also available.

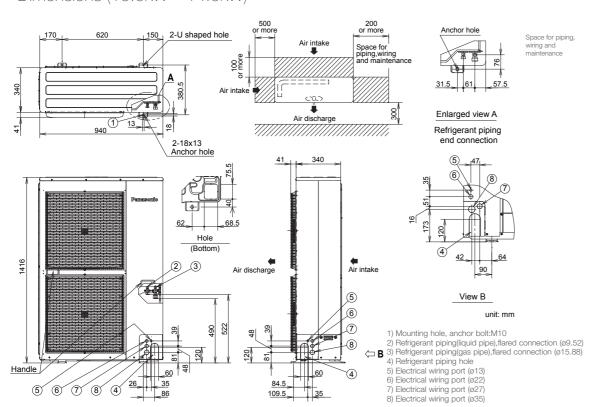
\* 14.0kW or smaller capacity unit



# **Outdoor Unit**



#### Dimensions (10.0kW - 14.0kW)



#### Dimensions (20.0kW)

Installation fixing bracket Installation side

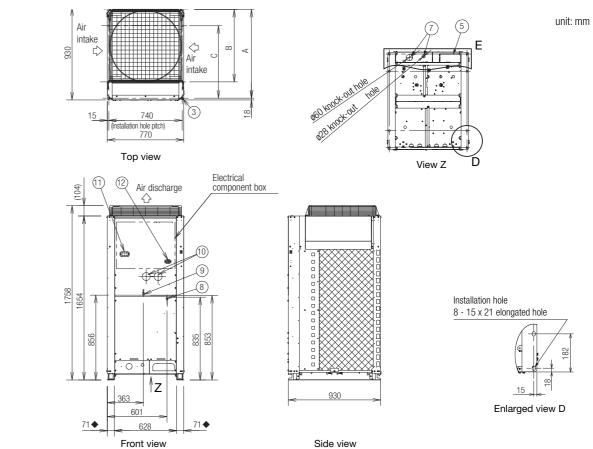
Position of refrigerant tube connection

Space for creation of hole on-site (Max. diameter ø48)

Refrigerant tubing & electrical wiring port (Bottom plate dimension

Enlarged view E

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#### Side view

- · 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: 894 (Installation hole pitch) \* The tubing is routed out from the front. B: 730 (Installation hole pitch) \* The tubing is routed out from the bottom.

	Types of unit	20.0kW					
1	Refrigerant tubing (gas tube)	brazed connection	ø19.05				
2	Refrigerant tubing (liquid tube)	flared connection	ø9.52				
3	Installation holes(8-15x21 e M12 or larger	elongated holes), anch	nor bolts				
4	Refrigerant tubing port (fron	Refrigerant tubing port (front: knock-out hole)					
5	Refrigerant tubing port (bottom: slit hole)						
6	Electrical wiring port (front: e60, e28 knock-out hole - for conduit connection)						
7	Electrical wiring port (bottom: ø60, ø28 knock-out hole - for conduit connection)						
8	Pressure outlet port (for high pressure: ø7.94 Schrader-type connection)						
9	Pressure outlet port (for low pressure: ø7.94 Schrader-type connection)						
10	Knock-out hole for connecting pressure gauge (optional)						
11)	Terminal plate						
12)	Terminal plate for inter-unit control wiring						

Panasonic High Static Pressure Ducted

#### **Indoor Unit**

High Static Pressure

# Ducted

High static and large airflow ducted for exceptional installation flexibility.







S-140PE1R5A

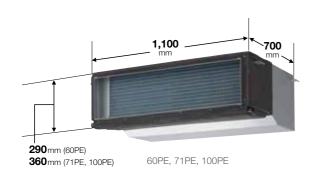


ECONAVI ready



#### **Compact Body Size**

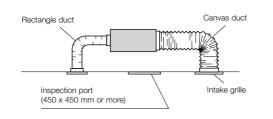
Hidden in the ceiling, ideal when interior decor is an important consideration such as in residences with many rooms and light commercial buildings.





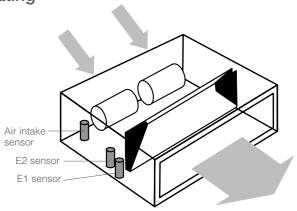
#### System Example

An inspection port (450 mm x 450 mm or more) is required at the control-box side of the indoor unit body.



Cold Drafts Reduced During Heating Operation

• Accurate temperature measurement by E1/E2 sensor to reduce cold drafts during heating operation.





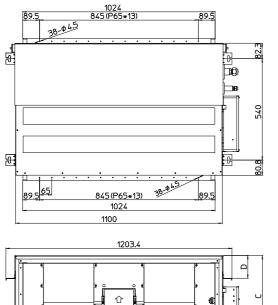
**Panasonic High Static Pressure Ducted** 

#### **Indoor Unit**

High Static Pressure

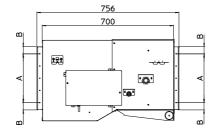
#### Ducted

#### **Dimensions**



#### S-60PE1R5A 290 S-71PE1R5A S-100PE1R5A 195 35.7 50 360 S-125PE1R5A S-140PE1R5A 260 38.2 430 121.5

Dimensions: mm



#### S-60PE1R5A S-71PE1R5A S-100PE1R5A S-100PE1R5A S-125PE1R5A S-125PE1R5A S-140PE1R5A S-140PE1R5A Indoor Unit **Model Name** U-60PE1R5A U-71PE1R5A U-100PE1R5A U-100PE1R8A U-125PE1R5A U-125PE1R8A U-140PE1R5A U-140PE1R8A 1 Phase/ 50Hz 1 Phase/ 50Hz 1 Phase/ 50Hz 1 Phase/ 50Hz 3 Phase/ 50Hz 1 Phase/ 50Hz 3 Phase/ 50Hz 3 Phase/ 50Hz Power source 10.0 (3.3 - 12.5) 11.2 (4.1 - 14.0) 12.5 (3.3 - 14.0) 14.0 (4.1 - 16.0) 14.0 (3.3 - 15.5) 16.0 (4.1 - 18.0) 14.0 (3.3 - 15.5) 16.0 (4.1 - 18.0) kW Cooling capacity 20,500 (8,500 - 24,200) 23,900 (6,800 - 27,300) 24,200 (8,500 - 27,300) 27,300 (6,800 - 30,700) 34,100 (11,300 - 42,700) 34,100 (11,300 - 42,700) 38,200 (14,000 - 47,800) 38,200 (14,000 - 47,800) 42,700 (11,300 - 47,800) 42,700 (11,300 - 47,800) 47,800 (11,300 - 52,900) 47,800 (11,300 - 52,900) 47,800 (14,000 - 54,600) 54,600 (14,000 - 61,400) 54,600 (14,000 - 61,400) Heating capacity BTU/h EER : COP W/W Total power input 4.45 : 4.55 Cooling: Heating 1.85 : 2.05 3.90 : 4.16 4.45 : **4.55** Indoor Unit 0.85:0.85 | 0.86:0.86 | 1.24:1.24 | 1.25:1.25 | 1.72:1.72 | 1.74:1.74 | 1.72:1.72 | 1.74:1.74 1.82:1.82 | 1.84:1.84 | 1.82:1.82 | 1.84:1.84 | 2.62:2.62 | 2.70:2.70 Cooling: Heatin Dimensions $\mathsf{H} \times \mathsf{W} \times \mathsf{D}$ Net weight 500 : **500** 1,000 : 1,000 Air volume Cooling: Heating 366 : **366** 666 : **666** 666 : **666** 833 : **833** 833 : **833** 1,000: 1,000 L/s External static pressure Pa 70 (Max.100) 100 (Max 150) Sound pressure level (H/M/L) Cooling : Heating 49 / 47 / 45 : 49 / 47 / 45 : 49 / 47 / 45 : 49 / 47 / 45 : 51 / 49 / 47 : 51 / 49 / 47 : 51 / 49 / 47 : 51 / 49 / 47 dB(A) Sound power level (H/M/L) 60 / 58 / 57 : 60 / 58 / 57 62 / 61 / 60 : 62 / 61 / 60 70 / 68 / 66 : 70 / 68 / 66 70 / 68 / 66 : 70 / 68 / 66 71/69/67:71/69/67:71/69/67:71/69/67:71/69/67:73/71/69:73/71/69:73/71/69:73/71/69 Number of fan speed Drain pipe size VP-25 VP-25 VP-25 VP-25 VP-25 VP-25 VP-25 VP-25 Outdoor Unit 7.85 : 8.80 | 7.65 : 8.60 | 9.10 : 9.30 | 8.80 : 9.00 | 11.8 : 12.7 | 11.40 : 12.3 | 3.95 : 4.25 | 3.80 : 4.10 16.0: 17.2 | 15.4: 16.6 | 5.30: 5.70 | 5.10: 5.50 17.8 : **18.1** | 17.2 : **17.5** | 5.80 : **5.95** | 5.55 : **5.70** $H \times W \times D$ 1,416 × 940 × 340 1,416 × 940 × 340 1,416 × 940 × 340 1,416 × 940 × 340 1,416 × 940 × 340 1,416 × 940 × 340 Dimensions 996 × 940 × 340 996 × 940 × 340 Net weight Air volume 1.000: 1.000 1.000: 1.000 1.833 : 1.583 1.833: 1.583 2.166: 1.833 2.166: 1.833 2.250 : 2.000 2.250 : 2.000 Cooling: Heating 48 (46) : **50 (48** Sound pressure level (Silent mode) Cooling: Heating dB(A) 52 (50) : **52 (50)** Sound power level (Silent mode) Cooling : Heating dB(A) 65 (63): 67 (65) 69 (67) : 69 (67) 69 (67): 69 (67 70 (68) : 70 (68) 70 (68): 70 (68) 71 (69) : 71 (69) 71 (69) : 71 (69) 65 (63) : 67 (65) Ø9.52 / Ø15.88 Piping connections Liquid/Gas Pipe length min. - max. 5 - 50 5 - 50 5 - 75 5 - 75 5 - 75 5 - 75 5 - 75 5 - 75 Elevation difference (OU located lower, OU located higher) 15, 30 15, 30 15, 30 15, 30 15, 30 15, 30 15, 30 Refrigerant at shipping, Additional gas amount R410A 2,000, 50 (g/m) R410A 2,350, 50 (g/m) R410A 3,400, 50 (g/m) Operation ranges -15 to 46 : -20 to 24 -15 to 46 : -20 to 24

#### **Optional Controller**

# **ECONAVI** 0

2.Gas side (O.D.ø15.88 FLARE)

1.I iquid side (O.D.ø9.52 FLARE)

3.Drain pipe size (O.D.ø32)





Timer remote controller CZ-RTC4



Deluxe Wired remote controller CZ-RTC3



Simplified remote controller CZ-RE2C2



Wireless remote controller CZ-RWSK2 + CZ-RWSC3

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CZ-RTC4

#### **Indoor Unit**

**High Static Pressure** 





High static and large airflow ducted for exceptional installation flexibility.

















- Design flexibility thanks to high static pressure and large air volume
- DC motor equipped
- Low power input

- Discharge air temperature control to reduce cold drafts during heating operation
- Configurable air temperature control

- 3-step static pressure set up

You can select between the three Static Pressure modes of 270 Pa / 140 Pa / 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.

Capacity			20.0kW				
	Indoor Unit		S-200PE2R5				
Model Name	Outdoor Unit		U-200PE1R8				
Power source		Phase/Hz	1 Phase/ 50Hz				
Power source		V	230V 240V				
		kW	20.0 (7.0 - 21.5)				
Cooling capacity:		KVV	22.4 (6.0 - 25.0)				
Heating capacity		BTU/h	68,200 (23,900 - 73,400)				
		БТО/П	76,400 (20,500 - 85,300)				
EER : COP		W/W	3.31 : 3.68				
Total power input	Cooling : Heating	kW	6.05 : 6.09				
Indoor Unit							
Current	Cooling : Heating	А	3.20 : 3.20   3.10 : 3.10				
Dimensions	$H \times W \times D$	mm	479×1,453×1,205				
Net weight		kg	106				
Air volume	Cooling : Heating	L/s	1,200 / 1,050 / 883.33 : 1,200 / 1,050 / 883.33				
External static pressure		Pa	72 (Max.270)				
Sound pressure level (H/M/L)	Cooling : Heating	dB(A)	47 / 45 / 42 : 47 / 45 / 42				
Sound power level (H/M/L)	Cooling : Heating	dB(A)	79 / 77 / 74 : 79 / 77 / 74				
Outdoor Unit							
D		Phase/Hz	3 Phase/ 50Hz				
Power source		V	400V   415V				
Current	Cooling : Heating	А	8.60 : 8.80   8.30 : 8.50				
Dimensions	$H \times W \times D$	mm	1,758 × 770 × 930				
Net weight		kg	234				
Air volume	Cooling : Heating	L/s	2,450				
Piping connections	Liquid / Gas	mm (inch)	Ø9.52 (3/8) / Ø19.05 (3/4)*				
Pipe length	min max.	m	7.5 - 180				
Elevation difference (OU located	lower, OU located higher)	m	40, 50				
Operation ranges	Cooling : Heating	°C	-10 to 46: -25 to 15				

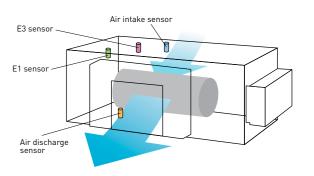
#### Sensible cooling 5-10% improved

S-200PE2R5

New heat exchanger with φ7mm pipe that increases the heat transfer surface to improve sensible cooling (5-10% improvement)

#### Discharge air temperature control

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

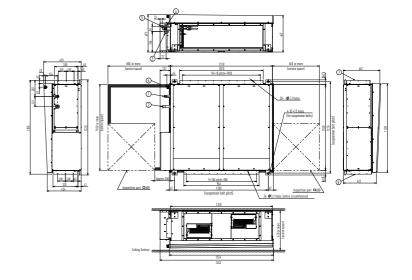


CZ-RTC3

#### HIGH STATIC DUCTED Dimensions

- 1 Refrigerant piping (liquid pipes) Ø9.52 2 Refrigerant piping (gas pipes) 76 type: Ø19.05, 96 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



**Panasonic** Mid Static Pressure Ducted

#### **Indoor Unit**

Mid Static Pressure







Provides exceptional performance, super quiet operation and the ultimate in control. A perfect solution when ceiling heights are restricted.















# **Technical focus**

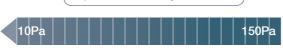
- Space saving 290mm height
- DC fan motor for variable external static pressure control
- Easy to install and maintain

- Air off sensor avoids cold air drafts during heating operation
- Configurable air temperature control

#### Variable external static pressure control

Optimal airflow set-up is possible for different ducting design and conditions.

For short ducting such as hotels



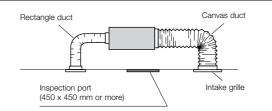
Optimal Control by DC Motor

For long ducting or for usage with high density filter

\* Please refer to technical databook for detail.

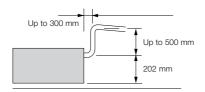
#### System example

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

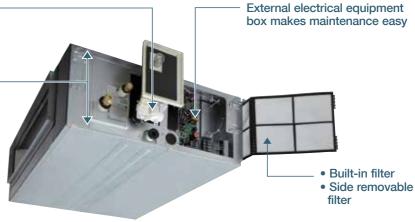
Using a high-lift built-in drain pump, drain piping can be elevated up to 702 mm from the base of the unit.



#### Built-in Drain pump (DC motor pump)

#### Space saving height of 290mm for all models

290mm standardised height provides easy and uniform installation for models with different capacities, especially when ceiling heights are restricted



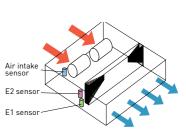
#### Discharge air temperature control

- Possible to control discharge air temperature for accurate room
- Possible to reduce cold drafts during heating operation.

\*Before spec-in, please consult with an authorised Panasonic dealer.

#### V-shaped heat exchanger

To improve heat exchange efficiency, an original V-shaped heat exchanger was developed incorporating a conventional high-efficiency fan and high-efficiency grooved heat transfer tubes. This increases the heat exchange surface area by





Increases surface area by about 30 to 80%

#### **Indoor Unit** Mid Static Pressure Ducted

#### MID STATIC DUCTED Dimensions

#### SIZE 60, 71 PF1R5A

- 1 Refrigerant piping joint (liquid tube) Ø9.52 Flare 2 Refrigerant piping joint (gas tube) Ø15.88 Flare 3 Upper drain port VP25 (O.D. Ø32 mm)
- \$200 flexible hose supplied
  4 Bottom drain port VP25 (O.D. Ø32 mm)
- 5 Suspension lug (4-12 × 30 mm)

Power source

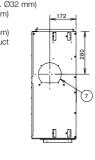
Cooling capacity

Heating capacity

EER : COP

Indoor Unit

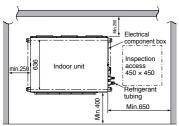
- 6 Power supply outlet 7 Fresh air intake port (Ø150 mm) 8 Flange for flexible air outlet duct
- 9 Electrical component box

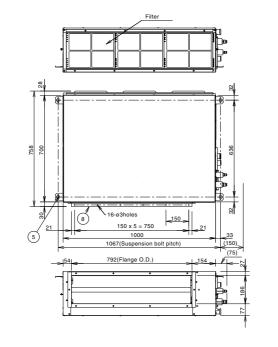


Indoor Unit

Outdoor Unit

Cooling : Heating





S-71PF1R5A

U-71PE1R5A

1 Phase/ 50Hz

230V 240V

7.1 (2.5 - 8.0) 8.0 (2.0 - 9.0)

3.84 : **3.85** 

24,200 (8,500 - 27,300) 27,300 (6,800 - 30,700)

0.89: 0.89 | 0.87: 0.87

S-100PF1R5A

U-100PE1R5A

1 Phase/ 50Hz

10.0 (3.3 - 12.5) 11.2 (4.1 - 14.0)

34,100 (11,300 - 42,700) 38,200 (14,000 - 47,800)

1.30 : 1.34 | 1.27 : 1.29

230V 240V

4.10 : **4.31** 

S-60PF1R5A

U-60PE1R5A

1 Phase/ 50Hz

20,500 (8,500 - 24,200) 23,900 (6,800 - 27,300)

0.89 : 0.89 | 0.87 : 0.87

230V 240V

3.90 : **3.87** 

kW

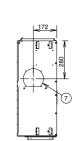
BTU/h

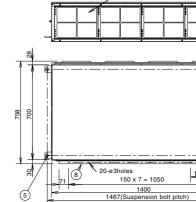
W/W

#### SIZE 100,125,140 PF1R5A

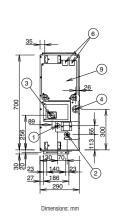
- 1 Refrigerant piping joint (liquid tube) Ø9.52 Flare 2 Refrigerant piping joint (gas tube) Ø15.88 Flare 3 Upper drain port VP25 (O.D. Ø32 mm)

- \$200 flexible hose supplied
  4 Bottom drain port VP25 (O.D. Ø32 mm)
- 5 Suspension lug (4-12 × 30 mm)
- 6 Power supply outlet
- 7 Fresh air intake port (Ø150 mm) 8 Flange for flexible air outlet duct
- 9 Electrical component box

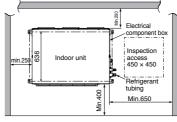


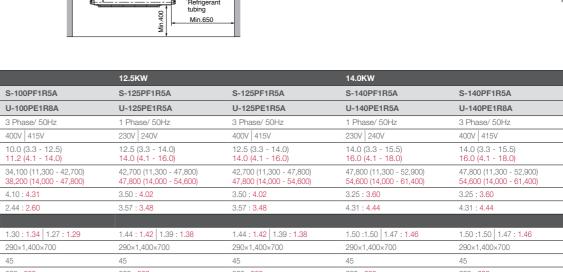


1192(Flange O.D.)



31





Dimensions	$H \times W \times D$	mm	290×1,000×700	290×1,000×700	290×1,400×700	290×1,400×700	290×1,400×700	290×1,400×700	290×1,400×700	290×1,400×700
Net weight		kg	33	33	45	45	45	45	45	45
Air volume	Cooling : Heating	L/s	350 : <mark>350</mark>	350 : <b>350</b>	533 : <mark>533</mark>	533 : <b>533</b>	566 : <b>566</b>	566 : <del>566</del>	600 : 600	600 : 600
External static pressure		Pa	70 (10 - 150)	70 (10 - 150)	100 (10 - 150)	100 (10 - 150)	100 (10 - 150)	100 (10 - 150)	100 (10 - 150)	100 (10 - 150)
Sound pressure level (H/M/L)	Cooling : Heating	dB(A)	35 / 32 / 26 : 35 / 32 / 26	35 / 32 / 26 : 35 / 32 / 26	38 / 34 / 31 : 38 / 34 / 31	38 / 34 / 31 : 38 / 34 / 31	39 / 35 / 32 : 39 / 35 / 32	39 / 35 / 32 : 39 / 35 / 32	40 / 36 / 33 : 40 / 36 / 33	40 / 36 / 33 : 40 / 36 / 33
Sound power level (H/M/L)	Cooling : Heating	dB(A)	58 / 55 / 49 : 58 / 55 / 49	58 / 55 / 49 : 58 / 55 / 49	61 / 57 / 54 : 61 / 57 / 54	61 / 57 / 54 : 61 / 57 / 54	62 / 58 / 55 : 62 / 58 / 55	62 / 58 / 55 : 62 / 58 / 55	63 / 59 / 56 : 63 / 59 / 56	63 / 59 / 56 : 63 / 59 / 56
Drain piping		mm	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25
Outdoor Unit										
Current	Cooling : Heating	А	7.40 : 7.10   8.40 : 8.10	8.60 : 9.50   8.30 : 9.20	10.60 : 11.20   10.30 : 10.70	3.53 : <b>3.70</b>   3.43 : <b>3.58</b>	15.90 : 15.80   15.30 : 15.10	5.29 : 5.26   5.12 : 5.05	19.30 : 19.10   18.60 : 18.40	6.42 : 6.35   8.18 : 6.15
Dimensions	$H \times W \times D$	mm	996 × 940 × 340	996 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340
Net weight		kg	68	69	98	98	98	98	98	98
Air volume	Cooling : Heating	L/s	1,000 : 1,000	1,000 : 1,000	1,833 : <b>1,583</b>	1,833 : 1,583	2,166 : 1,833	2,166 : 1,833	2,250 : 2,000	2,250 : <mark>2,000</mark>
Sound pressure level	Cooling : Heating	dB(A)	48 : 50	48 : 50	52 : <mark>52</mark>	52 : <mark>52</mark>	53 : 53	53 : 53	54 : 55	54 : 55
Sound power level	Cooling : Heating	dB(A)	65 : 67	65 : <b>67</b>	69 : <mark>69</mark>	69 : 69	70 : <b>70</b>	70 : 70	71 : <b>71</b>	71 : <b>71</b>
Piping connections	Liquid / Gas	m	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88
Pipe length	min max.	m	5 - 50	5 - 50	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75
Elevation difference (OU located le	lower, OU located higher)	m	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30
Maximum chargeless length		m	30	30	30	30	30	30	30	30
Refrigerant at shipping, Additional	al gas amount	g	R410A 2,000, 50 (g/m)	R410A 2,350, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)
Operation ranges	Cooling : Heating	°C	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24

Indoor Unit / 4-Way Cassette **Panasonic** 

#### **Indoor Unit**

# 4-WAY Cassette

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





















#### **Technical focus**

- Compact design
- Low sound levels
- DC fan motor for increased efficiency
- Powerful drain pump gives 850 mm lift
- Lightweight design
- Fresh air knockout
- Branch duct connection
- Optional air-intake plenum CZ-FDU2

#### Wide & Comfortable Airflow

A proprietary design features wide-angle discharge outlets and flaps that are larger in the middle, featuring a shape that was selected based on numerical mechanics and testing of actual prototype units. Air coming out of the centre of the discharge outlets travels farther. From the sides of each outlet, where the openings are larger, airflow spreads out to reach the corners of the room. Air is discharged across a wide area from the four sides of the unit. The curves on the room temperature distribution graph expand gently out through 360° in a circle centred on the indoor unit.

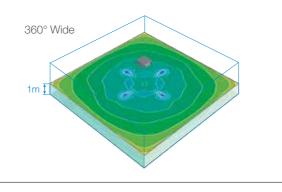
Comfort/Quiet

Ample airflow: 36 m<sup>3</sup>/min Industry's leading in the 140PU class.



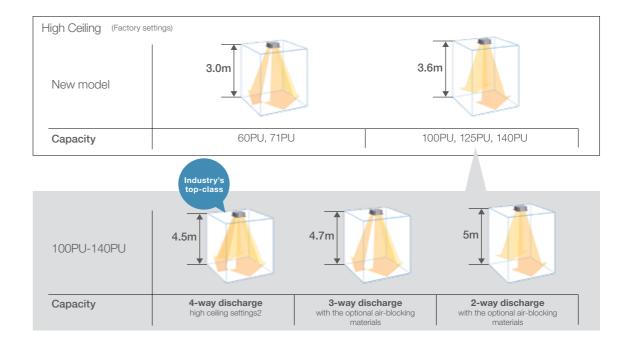
Temperature distribution by thermograph (cooling operation)

P140 4-way ceiling-mounted cassette type in cooling mode / Floor area of 225 m<sup>2</sup> / Ceiling height of 3 m



#### High-Ceiling Installation (Up to 5 m for 10.0kW+ models)

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



#### Ceiling height guidelines

*1 settings	4-way discharge		3-way	2-way		
Indoor unit	Factory settings 1	High ceiling setting 1	High ceiling setting 2	discharge (optional air-blocking materials)	discharge (optional air-blocking materials) *2	
60PU-71PU	3.0	3.3	3.6	3.8	4.2	
100PU, 125PU, 140PU	3.6	3.9	4.5	4.7	5.0	

<sup>\*1</sup> When using the unit in a configuration other than the factory settings, it is necessary to make settings on site to increase airflow.
\*2 Use air-blocking materials (CZ-CFU2) to completely block two discharge outlets for 2-way airflow.

Indoor Unit / 4-Way Cassette **Panasonic** 

#### **Indoor Unit** 4-way Cassette

#### Easy Maintenance and Cleaning

The flap can be removed easily for cleaning.



Suction grill able to make 90 degree turns.

#### Low-Profile 33.5 mm Panel

The square panel integrates seamlessly with the ceiling. Discharge outlets close when the unit is stopped.



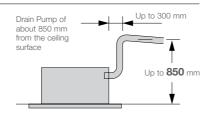
#### Lighter and Slimmer, Easier Installation

A lightweight unit at 24 kg, the unit is also very slim with a height of only 256 mm, making installation possible even in narrow ceilings.



#### A Drain Height of Approx. 850 mm from the Ceiling Surface

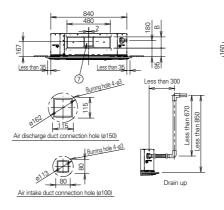
The drain height can be increased by approximately 350 mm over the conventional value by using a high-lift drain pump, and long horizontal piping is possible.

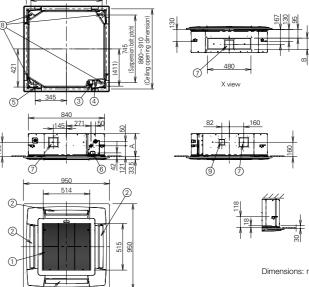


#### **Dimensions**

- Air intake grill
   Air discharge outlet
- 2 An dissillage outsit
  3 Refrigerant piping (liquid pipes) : ø9.52 (flared)
  4 Refrigerant piping (gas pipes) : ø15.88 (flared)
  5 Drain outlet VP25(outer ø32)
  6 Power supply port

- 7 Discharge duct (ø150) 8 Suspension bolt hole (4-12x30 slot)
- 9 Fresh air intake duct connection port (ø100)\*1
- \*1: Air inlet kit is necessary. Filter size: 520 x 520 x 16





\* Adjust the suspension bolt length so that the gap from the lower ceiling surface becomes 30 mm or more (18 mm or more from the lower surface of the body) as shown in the figure. When the suspension bolt length is long, it hits the ceiling panel and installation is not possible.

Capacity			6.0kW	7.1kW	10.0kW		12.5kW		14.0kW	
	Indoor Unit		S-60PU1R5A	S-71PU1R5A	S-100PU1R5A	S-100PU1R5A	S-125PU1R5A	S-125PU1R5A	S-140PU1R5A	S-140PU1R5A
Model Name	Outdoor Unit		U-60PE1R5A	U-71PE1R5A	U-100PE1R5A	U-100PE1R8A	U-125PE1R5A	U-125PE1R8A	U-140PE1R5A	U-140PE1R8A
	Panel		CZ-KPU21	CZ-KPU21	CZ-KPU21	CZ-KPU21	CZ-KPU21	CZ-KPU21	CZ-KPU21	CZ-KPU21
2		Phase/Hz	1 phase, 50Hz	1 phase, 50Hz	1 phase, 50Hz	3 phase, 50Hz	1 phase, 50Hz	3 phase, 50Hz	1 phase, 50Hz	3 phase, 50Hz
Power source		V	230V 240V	230V 240V	230V 240V	400V 415V	230V 240V	400V 415V	230V 240V	400V 415V
Cooling capacity		kW	6.0 (2.5 - 8.0) 7.0 (2.0 - 8.5)	7.1 (2.5 - 8.2) 8.0 (2.0 - 9.0)	10.0 (3.3 - 12.5) 11.2 (4.1 - 14.0)	10.0 (3.3 - 12.5) 11.2 (4.1 - 14.0)	12.5 (3.3 - 14.0) 14.0 (4.1 - 16.0)	12.5 (3.3 - 14.0) 14.0 (4.1 - 16.0)	14.0 (3.3 - 15.5) 16.0 (4.1 - 18.0)	14.0 (3.3 - 15.5) 16.0 (4.1 - 18.0)
Heating capacity		BTU/h	20,500 (8,500 - 27,300) 23,900 (6,800 - 29,000)	24,200 (8,500 - 28,000) 27,300 (6,800 - 30,700)		34,100 (11,300 - 42,700) 38,200 (14,000 - 47,800)	42,700 (11,300 - 47,800) 47,800 (14,000 - 54,600)		47,800 (11,300 - 52,900) 54,600 (14,000 - 61,400)	
EER: COP	Cooling : Heating	W/W	4.05 : 3.87	3.94 : <b>4.00</b>	4.20 : 4.31	4.20 : <b>4.31</b>	3.60 : <b>4.00</b>	3.60 : <b>4.00</b>	3.25 : <b>3.70</b>	3.25 : 3.70
otal power input	Cooling : Heating	kW	1.48 : 1.81	1.80 : 2.00	2.38 : <b>2.60</b>	2.38 : <b>2.60</b>	3.47:3.50	3.47:3.50	4.31 : 4.33	4.31 : 4.33
ndoor Unit										
Current	Cooling : Heating	А	0.31 : 0.30   0.30 : 0.29	0.33 : 0.32   0.32 : 0.31	0.71 : 0.65   0.71 : 0.64	0.71 : 0.65   0.71 : 0.64	0.76 : 0.73   0.73 : 0.73	0.76 : 0.73   0.73 : 0.73	0.89 : 0.80   0.87 : 0.79	0.89 : 0.80   0.87 : 0.7
Dimensions H × W × D	Indoor	mm	256 × 840 × 840	256 × 840 × 840	319 × 840 × 840	319 × 840 × 840	319 × 840 × 840	319 × 840 × 840	319 × 840 × 840	319 × 840 × 840
	Panel	mm	33.5 x 950 x 950	33.5 x 950 x 950	33.5 x 950 x 950	33.5 x 950 x 950	33.5 x 950 x 950	33.5 x 950 x 950	33.5 x 950 x 950	33.5 x 950 x 950
let weight	Indoor	kg	24	24	27	27	27	27	27	27
	Panel	kg	4	4	4	4	4	4	4	4
Air volume	Cooling : Heating	L/s	350 : <mark>350</mark>	366 : <b>366</b>	550 : <b>550</b>	550 : <b>550</b>	583 : <b>583</b>	583 : <b>583</b>	600 : <b>600</b>	600 : 600
Sound pressure level (H/M/L)	Cooling : Heating	dB(A)	36 / 31 / 28 : 36 / 31 / 28	37 / 31 / 28 : 37 / 31 / 28	3 44 / 38 / 32 : 44 / 38 / 32	44 / 38 / 32 : 44 / 38 / 32	45 / 39 / 33 : 45 / 39 / 33	3 45 / 39 / 33 : <b>45 / 39 / 3</b> 3	46 / 40 / 34 : 46 / 40 / 34	46 / 40 / 34 : 46 / 40 /
Sound power level (H/M/L)	Cooling : Heating	dB(A)	53 / 48 / 45 : 53 / 48 / 45	54 / 48 / 45 : <b>54 / 48 / 4</b>	5 62 / 55 / 49 : <b>62 / 55 / 4</b> 9	62 / 55 / 49 : 62 / 55 / 49	63 / 56 / 50 : <b>63 / 56 / 5</b> 0	63 / 56 / 50 : 63 / 56 / 50	64 / 57 / 51 : 64 / 57 / 51	64 / 57 / 51 : 64 / 57 /
lumber of fan speed			3	3	3	3	3	3	3	3
Orain pipe size		mm	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25
Outdoor Unit										
Current	Cooling : Heating	А	6.90 : <b>8.20</b>   6.70 : <b>7.95</b>	8.10:9.00 7.90:8.70	10.3 : 11.4   9.90 : 11.0	3.50 : 3.85   3.40 : 3.75	15.3 : 15.4   14.8 : 14.9	5.15 : 5.20   5.00 : 5.05	19.0 : 19.2   18.4 : 18.6	6.45 : <b>6.50</b>   6.20 : <b>6.2</b>
Dimensions $H \times W \times D$		mm	996 × 940 × 340	996 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340
let weight		kg	68	69	98	98	98	98	98	98
Air volume	Cooling : Heating	L/s	1,000 : <b>1,000</b>	1,000: 1,000	1,833 : <b>1,583</b>	1,833 : <b>1,583</b>	2,166: 1,833	2,166: 1,833	2,250 : <b>2,000</b>	2,250 : <b>2,000</b>
Sound pressure level (Silent mode)	Cooling : Heating	dB(A)	48 (46) : 50 (48)	48 (46) : <b>50 (48)</b>	52 (50) : <b>52 (50)</b>	52 (50) : <b>52 (50)</b>	53 (51) : <b>53 (51)</b>	53 (51) : <b>53 (51)</b>	54 (52) : <b>55 (53)</b>	54 (52) : <b>55 (53)</b>
Sound power level (Silent mode)	Cooling : Heating	dB(A)	65 (63) : <b>67 (65)</b>	65 (63) : <b>67 (65)</b>	69 (67) : <b>69 (67)</b>	69 (67) : <b>69 (67)</b>	70 (68) : <b>70 (68)</b>	70 (68) : <b>70 (68)</b>	71 (69) : <b>71 (69)</b>	71 (69) : <b>71 (69)</b>
Piping connections		m	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88
Pipe length	min max.	m	5 - 50	5 - 50	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75
Elevation difference (OU located lo	wer, OU located higher)	m	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30
Maximum chargeless length		m	30	30	30	30	30	30	30	30
Refrigerant at shipping, Additional	gas amount	g	R410A 2,000, 50 (g/m)	R410A 2,350, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)
Operation ranges	Cooling : Heating	°C	-15 - 46 : - <mark>20 - 24</mark>	-15 - 46 : - <mark>20 - 24</mark>	-15 - 46 : - <mark>20 - 24</mark>	-15 - 46 : - <del>20</del> - <del>24</del>	-15 - 46 : <b>-20 - 24</b>	-15 - 46 : <b>-20 - 24</b>	-15 - 46 : <b>-20 - 24</b>	-15 - 46 : <b>-20 - 24</b>

#### **Optional Controller**







ECONAVI sensor CZ-CENSC1

Deluxe Wired remote controller CZ-RTC3





Timer remote controller CZ-RTC4



Simplified remote controller CZ-RE2C2

# **Indoor Unit Under Ceiling**

Providing outstanding energy-saving performance, comfort and long-distance air flow distribution, these units are perfect for retail stores and schools.







S-125PT2R5A S-140PT2R5A **ECONAVI** ready





CZ-CENSC1 CZ-RTC3

#### Compact Looking, Stylish, **One-Motion Design**

With its streamlined, one-motion form, the unit looks thin and compact when installed for a neat appearance in any room.

When not operating, the louver closes to provide an elegant look while also keeping the unit clean.



#### **Energy-Saving Technology Delivering Top-Class Efficiency**

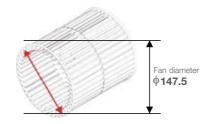
Top Class Energy Saving

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

#### New DC fan motor

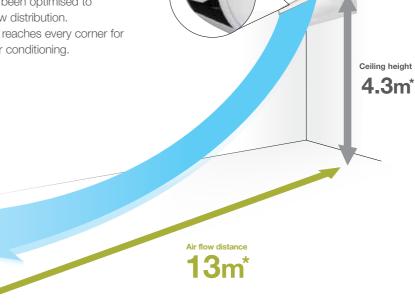


#### Large Diagonal Air Flow Fan

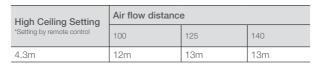


#### Comfortable, Long-Distance Air Flow Distribution

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



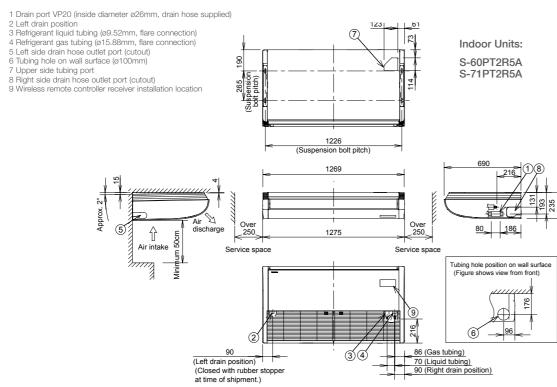
\* Results are based on specific testing conditions

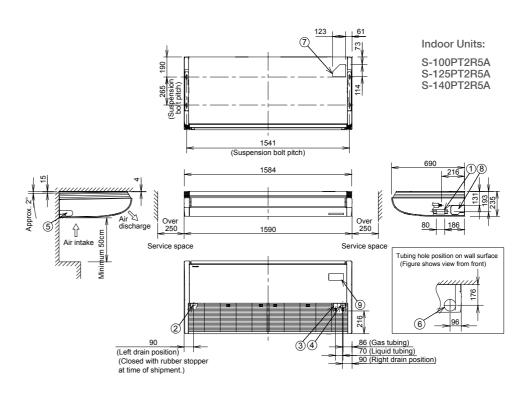




### Indoor Unit **Under Ceiling**

#### **Dimensions**





Capacity			6.0kW	7.1kW	10.0kW		12.0kW		14.0kW	
Madel News	Indoor Unit		S-60PT2R5A	S-71PT2R5A	S-100PT2R5A	S-100PT2R5A	S-125PT2R5A	S-125PT2R5A	S-140PT2R5A	S-140PT2R5A
Model Name	Outdoor Unit		U-60PE1R5A	U-71PE1R5A	U-100PE1R5A	U-100PE1R8A	U-125PE1R5A	U-125PE1R8A	U-140PE1R5A	U-140PE1R8A
		Phase/Hz	1 Phase/ 50Hz	1 Phase/ 50Hz	1 Phase/ 50Hz	3-Phase/ 50Hz	1 Phase/ 50Hz	3-Phase/ 50Hz	1 Phase/ 50Hz	3-Phase/ 50Hz
Power source		V	230V 240V	230V 240V	230V 240V	400V 415V	230V 240V	400V   415V	230V 240V	400V   415V
Cooling capacity:		kW	6.0 (2.5 - 7.1) 7.0 (2.0 - 8.0)	7.1 (2.5 - 8.0) 8.0 (2.0 - 9.0)	10.0 (3.3 - 12.5) 11.2 (4.1 - 14.0)	10.0 (3.3 - 12.5) 11.2 (4.1 - 14.0)	12.5 (3.3 - 14.0) 14.0 (4.1 - 16.0)	12.5 (3.3 - 14.0) 14.0 (4.1 - 16.0)	14.0 (3.3 - 15.0) 16.0 (4.1 - 18.0)	14.0 (3.3 - 15.0) 16.0 (4.1 - 18.0)
Heating capacity		BTU/h	20,500 (8,500 - 24,200) 23,900 (6,800 - 27,300)	24,200 (8,500 - 27,300) 27,300 (6,800 - 30,700)		34,100 (11,300 - 42,700) 38,200 (14,000 - 47,800)	42,700 (11,300 - 47,800) 47,800 (14,000 - 54,600)		47,800 (11,300 - 51,200) 54,600 (14,000 - 61,400)	
EER : COP		W/W	4.03 : 4.02	3.68 : 4.15	3.95 : <b>4.31</b>	3.95 : 4.31	3.35 : <b>3.99</b>	3.35 : <b>3.99</b>	3.01 : 3.67	3.01 : 3.67
Total power input	Cooling : Heating	kW	1.49 : 1.74	1.93 : 1.93	2.53 : <b>2.60</b>	2.53 : <b>2.60</b>	3.73 : <b>3.51</b>	3.73 : 3.51	4.65 : <b>4.36</b>	4.65 : <b>4.36</b>
Indoor Unit										
Current	Cooling : Heating	А	0.41 : 0.41   0.40 : 0.40	0.44 : 0.44   0.43 : 0.43	0.67 : 0.67   0.65 : 0.65	0.67 : 0.67   0.65 : 0.65	0.86: 0.86   0.83: 0.83	0.86 : 0.86   0.83 : 0.83	0.91 : 0.91   0.88 : 0.88	0.91 : 0.91   0.88 : 0.88
Dimensions	$H \times W \times D$	mm	235×1,275×690	235×1,275×690	235×1,590×690	235×1,590×690	235×1,590×690	235×1,590×690	235×1,590×690	235×1,590×690
Net weight		kg	33	33	40	40	40	40	40	40
Air volume	Cooling : Heating	L/s	333 : <b>333</b>	350 : <b>350</b>	500 : <b>500</b>	500 : 500	566 : <b>566</b>	566 : <b>566</b>	583 : <b>583</b>	583 : <b>583</b>
External static pressure		Pa	-	-	-	-	-	-	-	-
Sound pressure level (H/M/L)	Cooling : Heating	dB(A)	38 / 34 / 30 : 38 / 34 / 30	39 / 35 / 31 : 39 / 35 / 3	42 / 37 / 35 : <b>42 / 37 / 3</b> 5	42 / 37 / 35 : 42 / 37 / 35	46 / 40 / 36 : 46 / 40 / 36	6 46 / 40 / 36 : 46 / 40 / 36	6 47 / 41 / 37 : <b>47 / 41 / 3</b> 7	47 / 41 / 37 : <b>47 / 41 /</b> 3
Sound power level (H/M/L)	Cooling : Heating	dB(A)	56 / 52 / 48 : 56 / 52 / 48	3 57 / 53 / 49 : 57 / 53 / 49	9 60 / 55 / 53 : 60 / 55 / 53	60 / 55 / 53 : 60 / 55 / 53	64 / 58 / 54 : 64 / 58 / 54	4 64 / 58 / 54 : 64 / 58 / 54	4 65 / 59 / 55 : 65 / 59 / 55	65 / 59 / 55 : 65 / 59 /
Number of fan speed			3	3	3	3	3	3	3	3
Drain pipe size		mm	VP-20	VP-20	VP-20	VP-20	VP-20	VP-20	VP-20	VP-20
Outdoor Unit										
Current	Cooling : Heating	А	6.90 : 7.80   6.70 : 7.60	8.70 : 8.60   8.40 : 8.30	11.1 : 11.4   10.6 : 11.0	3.75 : 3.85   3.65 : 3.75	16.4 : 15.4   15.8 : 14.9	5.55 : 5.20   5.35 : 5.05	20.5 : 19.2   19.8 : 18.5	6.95 : <b>6.50</b>   6.70 : <b>6.25</b>
Dimensions	$H \times W \times D$	mm	996 × 940 × 340	996 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340	1,416 × 940 × 340
Net weight		kg	68	69	98	98	98	98	98	98
Air volume	Cooling : Heating	L/s	1,000: 1,000	1,000: 1,000	1,833: 1,583	1,833: 1,583	2,166: 1,833	2,166: <b>1,833</b>	2,250: <b>2,000</b>	2,250: <mark>2,000</mark>
Sound pressure level	Cooling : Heating	dB(A)	48 : 50	48 : 50	52 : <b>52</b>	52 : 52	53 : <b>53</b>	53 : <b>53</b>	54 : <b>5</b> 5	54 : <b>5</b> 5
Sound power level	Cooling : Heating	dB(A)	65 : 67	65 : 67	69 : 69	69 : 69	70 : <b>70</b>	70 : <b>70</b>	71 : <b>71</b>	71 : <b>71</b>
Piping connections	Liquid/Gas	m	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88	Ø9.52 / Ø15.88
Pipe length	min max.	m	5 - 50	5 - 50	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75	5 - 75
Elevation difference (OU located le	ower, OU located higher)	m	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30	15, 30
Maximum chargeless length		m	30	30	30	30	30	30	30	30
Refrigerant at shipping, Additiona	gas amount	g	R410A 2,000, 50 (g/m)	R410A 2,350, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)	R410A 3,400, 50 (g/m)
Operation ranges	Cooling : Heating	°C	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24	-15 to 46 : -20 to 24

#### **Optional Controller**





**ECONAVI** 



controller CZ-RTC3



Timer remote controller CZ-RTC4



Wireless remote controller CZ-RWST3N



Simplified remote controller CZ-RE2C2

# Controllers

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

#### ECONAVI Sensor [CZ-CENSC1]



Utilises ECONAVI Sensor and Control Program technologies to detect where energy is normally wasted and selfadjusts cooling power to reduce energy

- Activity detection
- Absence detection

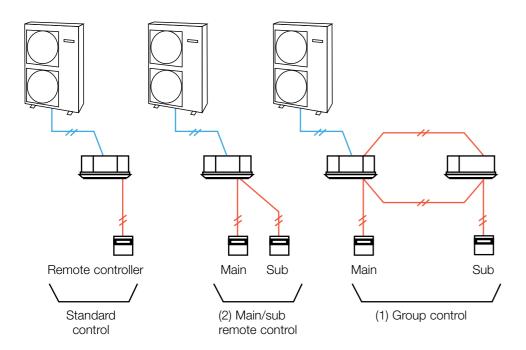
OPERATION SYSTEM		INDIVIDUAL	CONTROL SYSTEMS		TIMER OPERATION		CENTRALISED CONTROL SYSTEM	3		
Requirements	High-spec operation	Normal operation	Operation from anywhere in the room	Quick and easy operation	Daily and weekly program	Operation with various function from centre station	Only ON/OFF operation from centre station	Simplified load distribution ratio (LDR) for each tenant	BMS System PC Base	Connection with 3rd Party Controller
								Touch screen panel	P-AIMS	Seri-Para I/O unit for
External appearance	28 B 38 V	NEW PROPERTY OF THE PROPERTY O				BM / 522002000			Basic Software	outdoor unit
	Deluxe Wired Remote Controller	Timer Remote Controller (Wired)	Wireless Remote Controller	Simplified Remote Controller	Schedule Timer	System Controller	ON/OFF Controller	Intelligent Controller	CZ-CSWKC2	Interface adaptor
Type, model name	CZ-RTC3	CZ-RTC4	CZ-RWSU2N C-RWSK2 + CZ-RWST3N CZ-RWSC3	CZ-RE2C2	CZ-ESWC2	CZ-64ESMC2	CZ-ANC2	CZ-256ESMC2 (CZ-CFUNC2)	Optional software	
Built-in thermostat	•	•	•	•	_	_	_	_		CZ-CAPC2
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	64 groups, max. 64 units	64 groups, max. 64 units	16 groups, max. 64 units	64 units x 4 links, max. 256 units	CZ-CSWAC2 for Load distribution	Seri-Para I/O unit fo each indoor unit
Use limitations	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.	Up to 2 controllers can be connected per group.	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.	CZ-CSWWC2 for Web application CZ-CSWGC2 for Object layout display CZ-CSWBC2 for BACnet software interface	CZ-CAPBC2  Communication Adaptor
Function ON/OFF			•	•			•	•	*PC required (field supply)	
Mode setting				•	_		_	•		CZ-CFUNC2
Fan speed setting	•			•	_	•	_	•	Web Interface	
Temperature setting	•	•	•	•		•	_	•	Systems	LonWorks Interface
Air flow direction	•	•	•	•	_	<b>1</b>	_	<b>1</b>	CZ-CWEBC2 *PC required	
Permit/Prohibit switching	•	_	_	_	_	•	•	•	*PC required (field supply)	200
Weekly program	•	•	_			_	_		164	CZ-CLNC2

<sup>1.</sup> Setting is not possible when a remote control unit is present. (Use the remote controller for setting.) All specifications subject to change without notice.

### **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.	Timer remote controller CZ-RTC4 / CZ-RTC3 Simplified remote controller CZ-RE2C2 Wireless remote controller CZ-RWSU2N / CZ-RWST3N / CZ-RWSK2 + CZ-RWSC3	1 unit each
(1) Group control  Batch remote control on all indoor units.  Operation of all indoor cells 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.	Timer remote controller CZ-RTC4 / CZ-RTC3 Simplified remote controller CZ-RE2C2 Wireless remote controller CZ-RWSU2N / CZ-RWST3N / CZ-RWSK2 + CZ-RWSC3	As required
(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.	Main or sub Timer remote controller CZ-RTC4 / CZ-RTC3 Simplified remote controller CZ-REZC2 Wireless remote controller CZ-RWSU2N / CZ-RWST3N / CZ-RWSK2 + CZ-RWSC3	As required

#### SYSTEM EXAMPLE



#### Deluxe wired remote controller (CZ-RTC3)



Dimensions H 120 x W 120 x D 16 mm

#### **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 4-way cassette)
- ON/ OFF timer
- Weekly Timer
- Filter information\*
- Outing function
- Quiet operation mode\*
- Power consumption monitor\*
- Energy saving\*
- Initial settings
- Ventilation

#### Maintenance Function

- Outdoor unit error data
- Service Contact address
- RC setting mode
- Test Run
- Sensor Information\*
- Service check
- Simple/ Detailed Settings
- Auto address
- \* Subject to the connected model

#### Timer remote controller (CZ-RTC4)

#### NEW



Dimensions H 120 x W 120 x D 20 mm

#### 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.

#### 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.

Panasonic Controllers

#### Wireless remote controller



For 4-Way cassette type CZ-RWSU2N



For all Ducted types CZ-RWSK2 + CZ-RWSC3

# Remote control by main remote controller and sub controller is possible May 2 remote controllers (main remote controller and sub controller) can be

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

#### When CZ-RWSC3 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, wind 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).

# For under ceiling ty CZ-RWST3N

### Simplified remote controller (CZ-RE2C2)



Dimensions H 120 x W 70 x D 17 mm

#### A remote controller with simple functions and basic operation

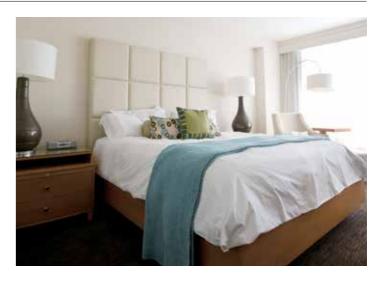
- Suitable for open rooms or hotels where detailed functions are not required.
- ON/OFF, operation mode switching, temperature setting, wind velocity switching, wind direction setting, alarm display, and remote controller self-diagnosis can be performed.
- Batch group control for up to 8 indoor units.
- Remote control by main remote controller and sub controller is possible with a simplified remote controller or a wired remote controller (up to two units).

# T10 Terminal for External Control (Digital Connection)

Connecting an indoor unit to an external device is easy.

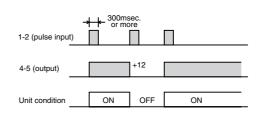
The T10 Terminal featured in the electronic circuit board of all indoor units enables digital connection to external devices.





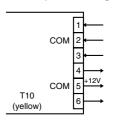
#### 1. T10 Terminal Specification (T10:CN061 at indoor unit PCB)

- Control items: 1. Start/stop input
  - 2. Remote controller prohibit input
  - 3. Start signal output
  - 4. Alarm signal output



NOTE: The wire length from indoor unit to the Relay must be within 2.0m. 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.
- 4. 5-6 (Static output): 12V output when some errors occur / No output at or occur.

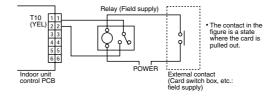
#### 2. Usage Example

#### 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



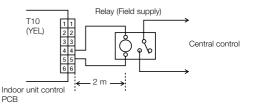
NOTE: The wire length from indoor unit to the Relay must be within 2.0m

#### Operation ON/OFF signal output

#### Condition

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

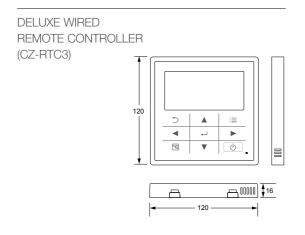
#### Example of wiring

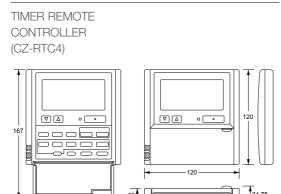


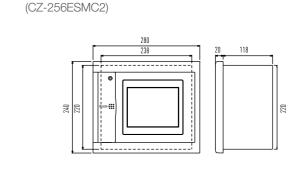
NOTE: The wire length from indoor unit to the Relay must be within 2.0m Pulse signal changeable to static with JP cutting. (Refer to JP001)

\*\*

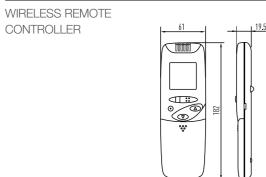
#### Remote Controller External Dimensions

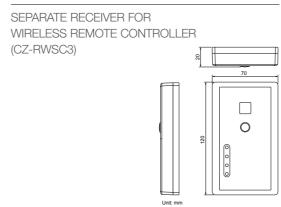


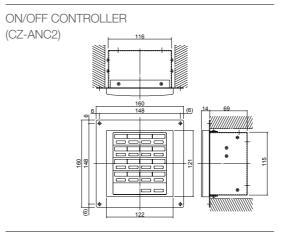




INTELLIGENT CONTROLLER



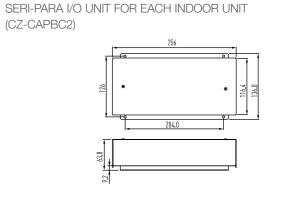


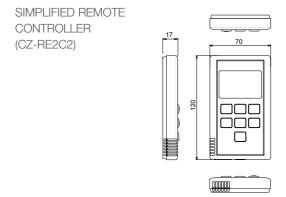


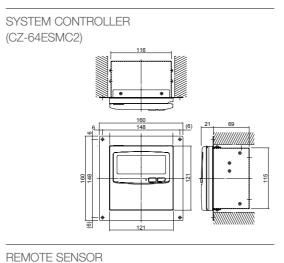
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COMMUNICATION ADAPTOR

(CZ-CFUNC2)

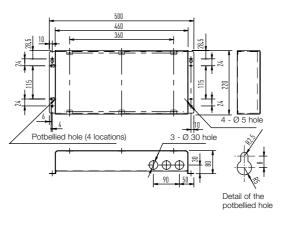


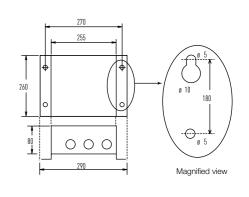




(CZ-CSRC3)

LONWORKS INTERFACE SERI-PARA I /O UNIT FOR OUTDOOR UNIT (CZ-CLNC2) (CZ-CAPDC2)





ECONAVI SENSOR (CZ-CENSC1)

