

Think GAIA
For Life and the Earth

SANYO

Gas Heat Pump Air Conditioners M Series



G POWER 
W-MULTI 
3WAY MULTI 

GAS DRIVEN VRF 
ELECTRIC VRF
COMMERCIAL SPLIT SYSTEMS
ROOM AIR CONDITIONERS



Think GAIA

For Life and the Earth

"GAIA" is a term that encompasses the Blue Planet, "Earth," and the infinite varieties of "life" that live and breathe on it.

It describes the world as a single living organism, where all life and nature co-exist interdependently.

SANYO is committed to listening to GAIA's voice and engaging in activities that are beneficial to life and the Earth.

As a testament to this, SANYO pledges to respond by developing only products that are absolutely essential to life and the Earth.

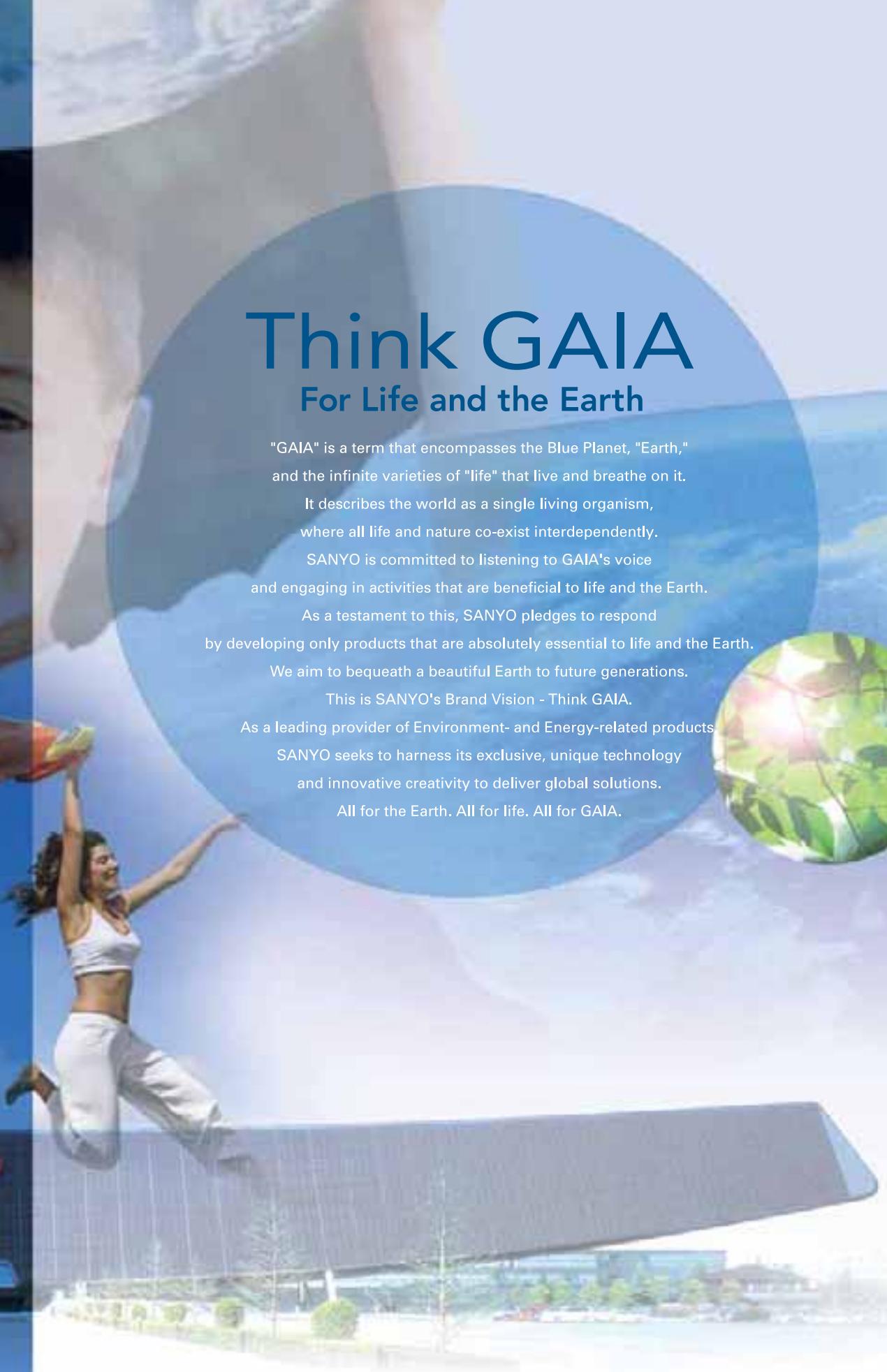
We aim to bequeath a beautiful Earth to future generations.

This is SANYO's Brand Vision - Think GAIA.

As a leading provider of Environment- and Energy-related products

SANYO seeks to harness its exclusive, unique technology and innovative creativity to deliver global solutions.

All for the Earth. All for life. All for GAIA.





History of SANYO GHP

SANYO is one of leading company of GHP system in the world.

- 1981 ■ Development of GHP as a national project
- 1985 **World First!!** ■ Selling GHP 15HP launched in Japan
- 1998 ■ Achieved a total capacity of 1 million HP in Japan
- 2001 ■ Achieved a total of 100,000 Systems in Japan
World First!! ■ Selling GHP W multi system in Japan
- 2003 ■ Achieved a total capacity of 2 million HP in Japan
■ Selling GHP R407C (J series) in Europe
- 2004 **World First!!** ■ Selling GHP with R410A system in Japan
- 2006 ■ Achieved a total of 1,000 Systems in Europe
- 2008 ■ Selling GHP W-Multi and G Power in Europe
■ Achieved a total of 2,000 Systems in Europe

How GHP works

If you are short of electrical power, SANYO gas heat pumps are the perfect solution.

Runs on gas and just needs single phase supply.

Enables the building's electrical power supply to be used for other critical electrical demands.

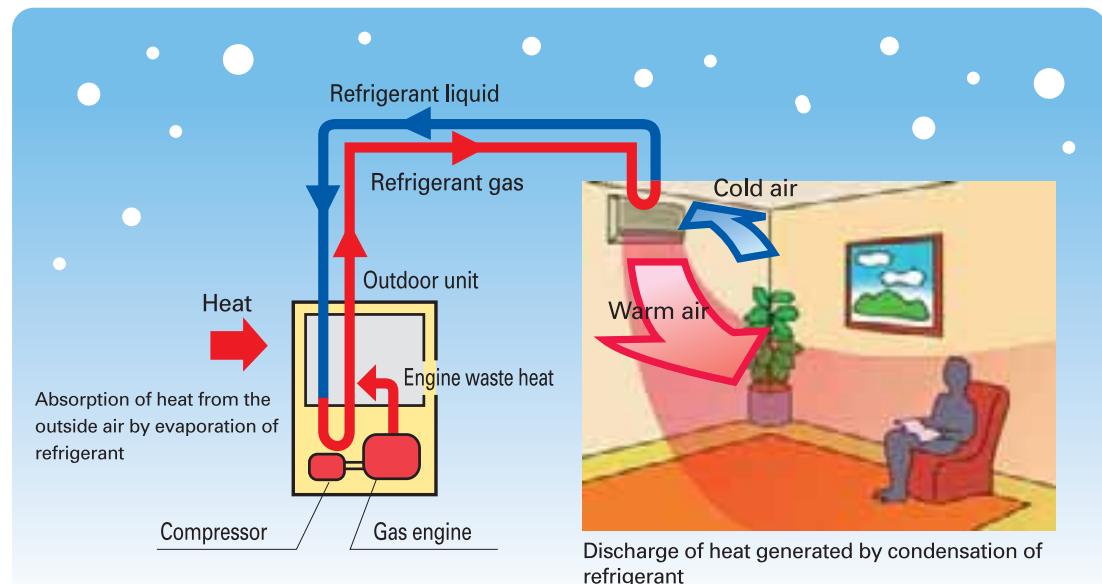
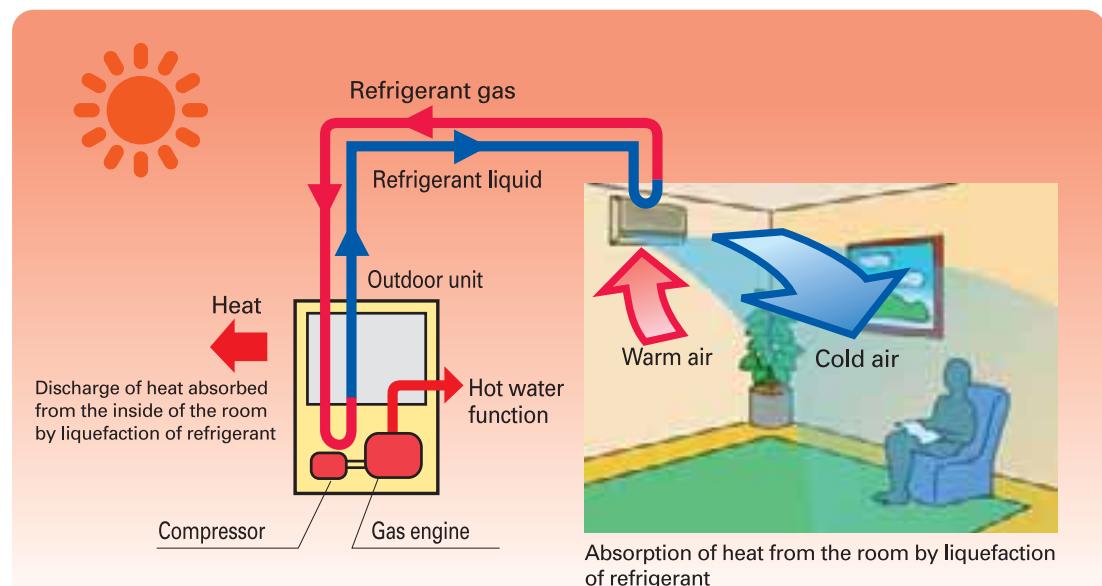
Reduces capital cost to upgrade power substations to run heating and cooling systems.

Reduces power loadings within a building especially during peak periods.

Electricity supply freed up for other uses such as IT servers, commercial refrigeration, manufacturing, lighting etc.

High performance and surprisingly low operating cost by using gas fuel

How GHP works



The advantages of GHP

Advantage 1

Speedy and powerful

- **High energy and powerful**

High energy, high-power only possible for fuel gas power.

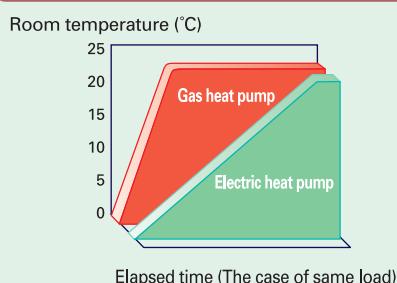
- **Quick start up**

Fast start up is achieved by collection and reusing the waste heat produced by the combustion.

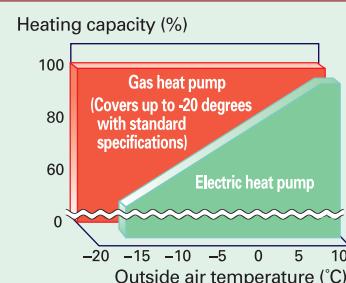
- **No need for a defrosting operation**

There is no interruption of heating operation so unpleasant cold air in the room is avoided.

comparison of the start up times for heating operation



comparison of heating capacity



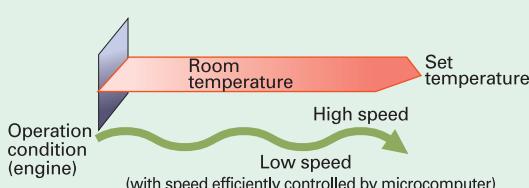
Advantage 2

Always comfortable

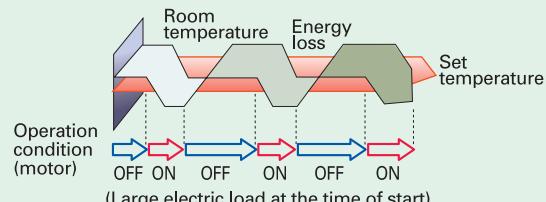
The engine speed is computer controlled and is determined by the room temperature. The room temperature is therefore kept comfortable at all times.

A gas engine is used to drive the compressor. The speed of the engine is controlled efficiently by a microcomputer according to the room temperature, so that there is no temperature loss.

Gas heat pump air conditioner



Electric air conditioner (At the time of cooling)



Advantage 3

Low power consumption

- **Reduce power consumption significantly**

As gas is used as a heat source, electricity is only needed to power auxillary equipment such as fans etc.

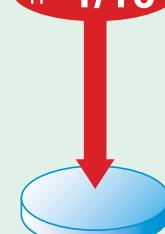
- **Comfortable air conditioning, even during power capacity shortage**

The power consumption at around 8 horsepower is only 0.70 kw (50Hz, during cooling).

- **Reduction of power receiving equipment**

Electricity consumption

Approx 1/10



Electricity consumption depends on the conditions of use.

GHP LINE-UP

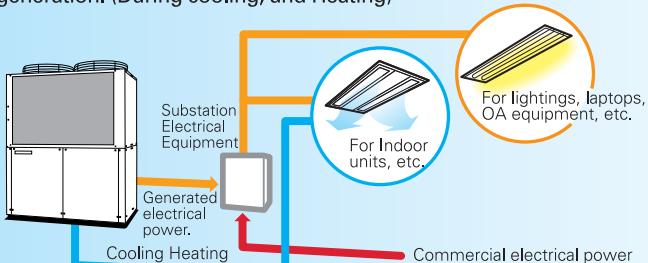
GPOWER



ECOG
W-MULTI R410A

Reduction of running costs

- Highly efficient power generation is possible by using excess energy from the engine while air conditioning.
- This is a revolutionary model. The generated electricity can be used not only for GHP operation, but also for the external devices.
- The Electrical Power Consumption required for air-conditioning is practically "zero". It contributes to the reduction of contract power.
- Power generation effect is over 40%, which is better than thermal power generation. (During cooling, and Heating)



W-MULTI



ECOG
W-MULTI R410A

The Industry's largest horsepower GHP

- Achievement of industry's largest horsepower (around 50HP) by combining 2 outdoor units
- The Appropriate Load Divider Function ensures energy saving and thus a reduction of running costs
- Non-stop operation even during maintenance
- Long lifetime



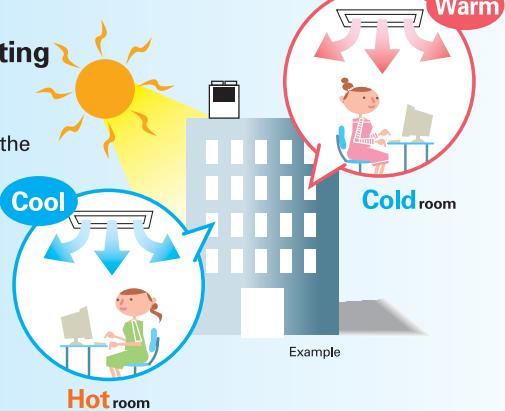
3WAY MULTI



ECOG
3WAY MULTI R410A

Simultaneous cooling and heating operation

- Within the same refrigerant system, it is possible for cooling / heating to be run at the same time
- This is optimal for use in buildings that contain rooms with large temperature differences or rooms which require cooling throughout the year.



Example

Increased efficiency and even lighter than before

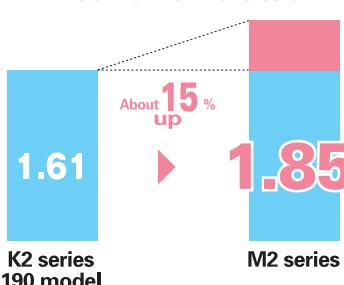
Now, GHP has even greater reliability than before

Excellent performance on partial load

The 190 models achieved **1.85**. It is more

*Partial COP =Partial interim capacity / Partial gas consumption.

When it is partial load*, the average COP for warm and cold

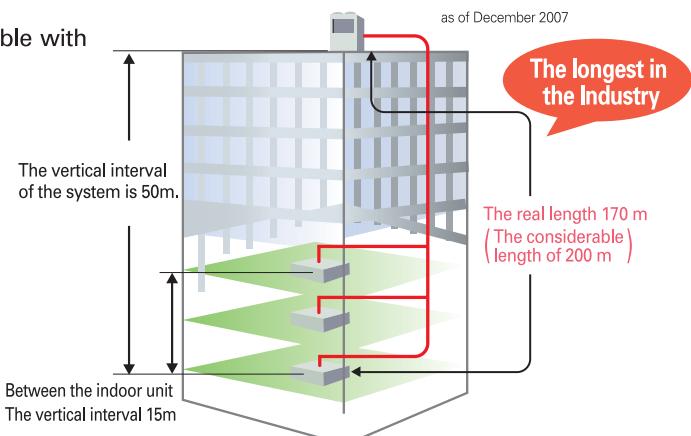


as of December 2007

Long piping

Long piping lengths of **170m** are possible with a real length of **200m**
This is the longest in the Industry.

*The 3WAY multi and renewed W multi are considerable length of 145 m real length of 120 m.



Reduced driving sounds and vibration levels

Quieter design means sound levels reduced by up to **2dB(A)**

*When in quieter mode, the capacity is 10 % down.

The driving sound of M Series

Format	120 model	150 model	190 model	240 model	(dB(A))
Sound level	57	57	58	62	

Remarkably quiet

Sound levels have been reduced to such a degree that the M Series GHP is now quieter than a normal speaking voice, 60 dB (A)

Comparing the driving sound (dB (A))

65 ▶ 60 ▶ 58

B series (Released in 1990) H1 series (Released in 2001) M series (190 model)

G POWER



Powerful electricity generation!
 This is a commercial use gas heat pump air conditioner for the next generation.

New GHP with electrical power generator

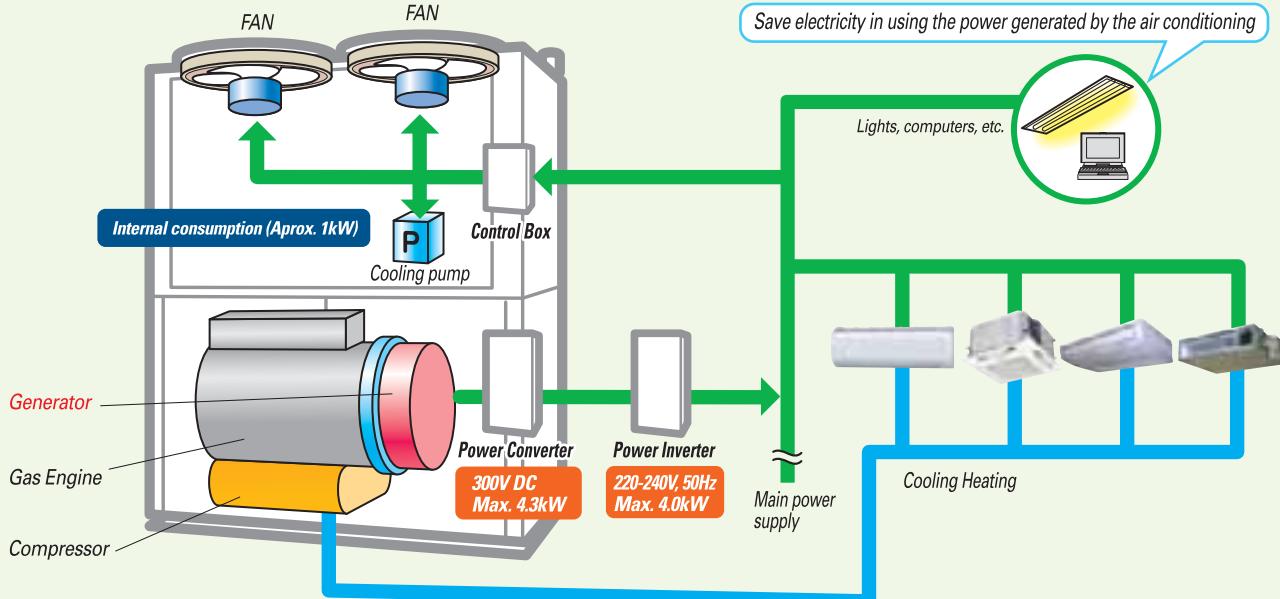
“ECO G Power”

ECO G Power does not only compensate the electric usage of the outdoor unit but also supplies electricity outside the unit thanks to the power conditioner. It consumes no electricity for cooling or heating.

**Generation efficiency
more than
40%**

*1

$$\text{Generation efficiency} = \frac{\text{Generation capacity (kW)}}{\text{Increased consumption of gas by the power generation (kW)}}$$

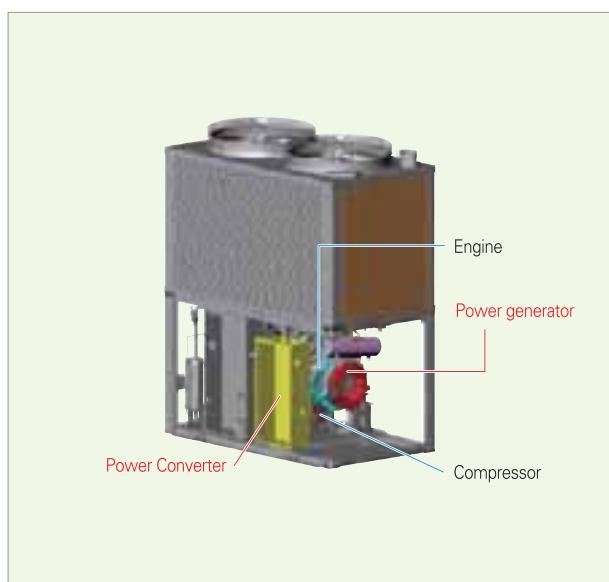
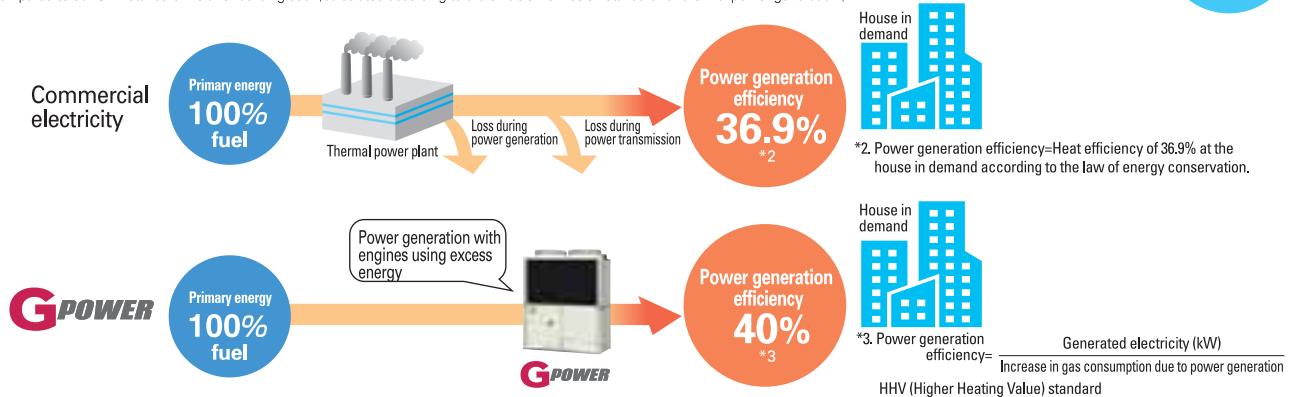


Reducing CO₂ emission by up to 30% by improving energy efficiency.

By harnessing excess energy created during air conditioning, electrical power generation efficiency of over 40% is achieved (during cooling and heating value standard). Due to energy efficiency, when compared to using commercial electricity, CO₂ emissions can be reduced by 30% *1.

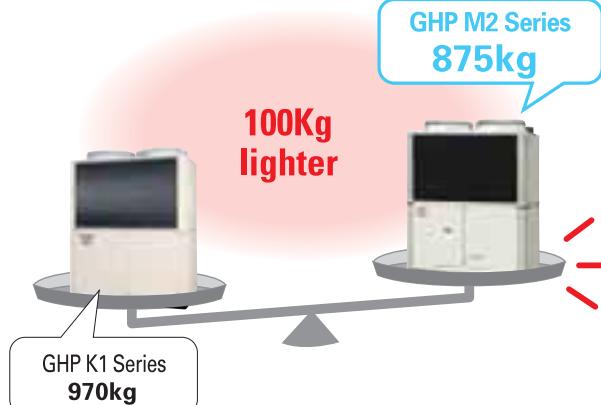
*Compared to our GHP standard multi for building use. (Calculated according to the unit CO₂ emission standard for thermal power generation.)

CO₂
approx. 30%
reduction



100Kg lighter

100kg lighter compared to K Series GHP. Due to the light weight, reduction of physical distribution costs is possible. Furthermore, it is an advantage when setting up on the roof.



Variable Refrigerant Flow products Gas Engine Driven Heat Pump Air conditioner

HP	20	33	36	40	45
Model name	SGP-EGW190M2G2W	SGP-EW120M2G2W SGP-EGW190M2G2W	SGP-EW150M2G2W SGP-EGW190M2G2W	SGP-EGW190M2G2W SGP-EGW190M2G2W	SGP-EGW190M2G2W SGP-EW240M2G2W
Cooling capacity kW	56.0	91.5	101.0	112.0	127.0
Capacity	Heating STD kW	63.0	103.0	113.0	126.0
	Low temp *1 kW	67.0	109.5	120.0	134.0
	Hot water (Cooling model) kW	22.0	34.0	37.5	44.0
	Power generator capacity at rating kW	DC 2.5 (Max 4.3)	DC 2.5 (Max 4.3)	DC 2.5 (Max 4.3)	DC 5.0 (Max 8.6)
Electricity	C Power kW	1.35	2.20	2.70	2.70
	H Power kW	1.01	2.02	2.02	2.55
	C kW	44.0 (38.3)*	68.5	75.6	88.0
Gas consumption	H-STD kW	48.7 (43.0)*	76.8	84.8	97.4
	H-LOW kW	62.1 (56.4)*	98.9	109.4	124.2
COP	Air conditioning only	Cooling 1.33 (1.41)*	1.29	1.29	1.23
	Heating	1.34 (1.43)*	1.31	1.30	1.27
	AVE	1.34 (1.42)*	1.30	1.30	1.25
Max COP (Inc Generator, Hot water)	Cooling	1.78	1.81	1.80	1.78
Size	Height x Width x Depth mm	2,248 x 1,800 x 1,000(+60)		2,248 x 1,800+100 (Min distance) + 1,800 x 1,000(+60)	
	Weight kg	875	1,660	1,685	1,740
Starter amperes	A	30		30	1,720
	Gas	ø 28.58	ø 31.75	ø 31.75	ø 38.1
Pipe	Liquid	ø 15.88		ø 19.05	ø 38.1
	Balance	ø 9.52		ø 9.52	
	Fuel gas	R3/4 (Bolt, thread)		R3/4 (Bolt, thread)	
	Exhaust drain port mm	ø 25 Rubber hose		ø 25 Rubber hose	
Operation sound	dB	58	61	61	63
Indoor/Outdoor capacity ratio		50 - 130%		50 - 130%	
Number of connection indoor *		32		48	

* : In case of not generator working

*1: Low temp condition: Outdoor temperature 2°C

Specifications subject to change without notice.

SANYO**ECO G**
GAS HEAT PUMP
W-MULTI R410A

W-MULTI

The industry's largest horsepower of around 50HP
is achieved by combining 2 outdoor units!

*As of March 2007.



ECO G W-Multi for Heat Pump Applications

W-Multi is a system which even allows the connection of 2 outdoor units. SANYO's W-Multi uses the indoor-outdoor multi method.

Flexibility to design the system according to the surrounding space

Freedom in designing the system: Connectable indoor unit models are 22~280, and up to 48 units are able to be connected.

Number of indoor units that can be connected.

(Up to 36 units per 1 outdoor unit)

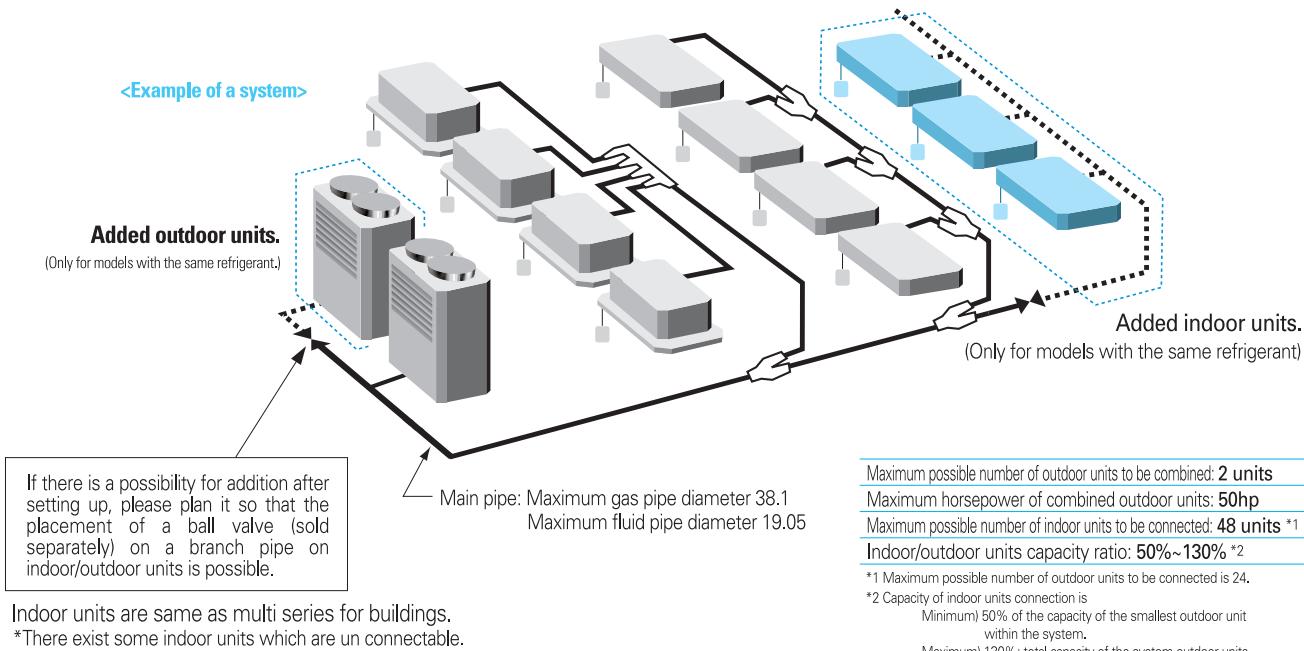
*There exist some un connectable indoor units.

Up to 48 units.

Easy to add additional units in the future

Load can easily be increased in the future by the addition of indoor and outdoor units without having to plumb pipe shafts.

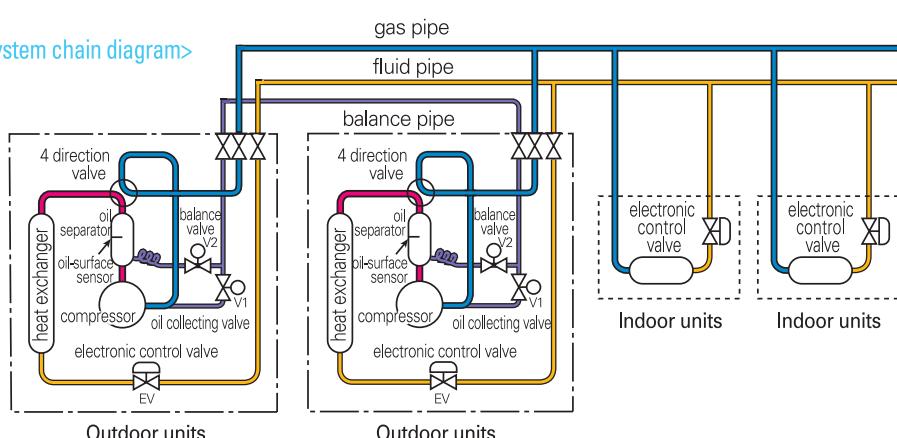
*When specifying plumbing, please choose the size according to the horsepower after the increase of units.



Introducing the oil/refrigerant balance control system

The amounts of oil and refrigerant between compressors are kept in balance by a signal from an oil-surface sensor or a refrigerant gas controller mounted on the oil separator, allowing the exchange of oil and refrigerant through a balance pipe.

<System chain diagram>

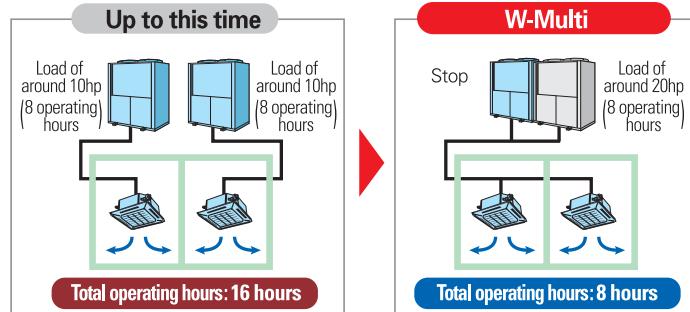


Saving Energy

Energy savings achieved by the Appropriate Load Divider Function

Energy savings are achieved by the Appropriate Load Divider Function, which enables efficient operation by concentrating the cooling/heating capacity to one outdoor unit and stopping the other. Compared to conventional machines with a similar COP, this function allows an achievement of energy savings and thus reduces the running costs, especially in part-load-seasons like spring and autumn.

Example: 40hp (approximately 20hp x 2), load of around 20hp, 8 operating hours.



Non-stop operation, even during maintenance

System will not stop even during maintenance, due to Manual Backup Operating Function

Maintenance is possible during weekdays because it can continue operating during maintenance.

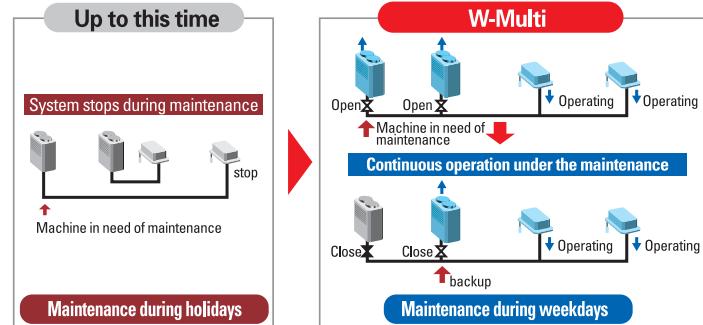
Automatic Backup Operating Function enables continuous operation, even during trouble

If one outdoor unit stops due to unexpected trouble, backup function in operational outdoor units will automatically kick in and continue operating. Even when a necessity for a service arises, one can cut off the system being served with the closing valve in the outdoor unit, enabling continuous operation with functional outdoor units.

*Depending on the content of trouble, automatic backup operation might not be possible.

*Automatic backup operation is provisional. Please contact the service immediately.

*During backup operation, please limit the number of operating indoor units. If too many indoor units are operating, ability of air conditioning could be lost.



Long lifetime

Energy savings achieved by the Appropriate Load Divider Function

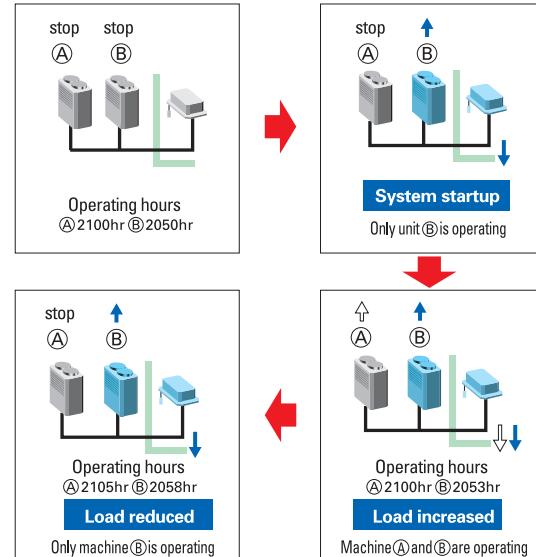
Due to the appropriate load divider, up to 30% of operating hours can be reduced. During the period, such as spring and autumn, when the load is low, appropriate load divider will stop excess outdoor units. When comparing the total of operating hours, maximum of up to 30% * reduction is possible.

*Reduction effects can vary depending on the combination of machines and operating condition. (trial by our company)

Renewal period prolonged due to rotation function

Rotation function, which is run from outdoor units with low operating time, will average the operating hours of each outdoor unit. This will result in prolongation of maintenance or replacement period.

Example of the rotation function



Ease of construction

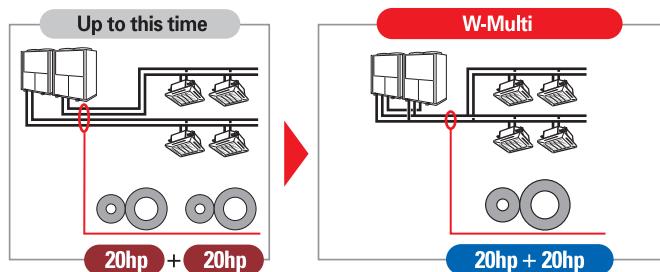
Ease of construction is improved by introducing large capacity common pipe

By combining all pipes, which were needed for each indoor unit, into a common pipe in each system, the number of pipes are reduced by half* which leads to ease of construction. Furthermore, space of pipes within pipe shafts can be reduced by 2/3.*

*System with approximately 40hp (20hp x 2 units)

Example of a system with approximately 40hp

Combining all pipes, which were needed for each outdoor unit, into a pipe in each system. (Number of pipes is reduced by half)





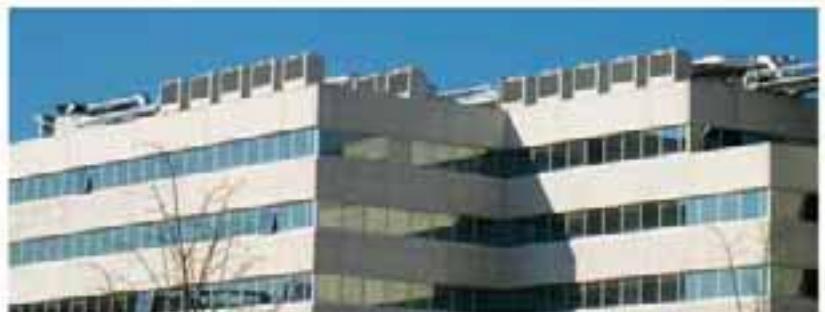
Variable Refrigerant Flow products

Gas Engine Driven Heat Pump Air conditioner

HP	13	16	20	25	26		
Model name	SGP-EW120M2G2W	SGP-EW150M2G2W	SGP-EW190M2G2W	SGP-EW240M2G2W	SGP-EW120M2G2W SGP-EW120M2G2W		
Capacity	Cooling capacity kW	35.5	45.0	56.0	71.0		
	Heating capacity STD kW	40.0	50.0	63.0	80.0		
	Low temp ¹⁾ kW	42.5	53.0	67.0	85.0		
Electricity	Hot water (Cooling mode) kW	12.0	16.0	20.0	25.0		
	C Power kW	0.85	1.35	1.35	1.70		
	H Power kW	1.01	1.01	1.01	1.54		
Gas consumption	C kW	24.5	31.6	38.3	49.0		
	H-STD kW	28.1	36.1	43.0	56.2		
	H-LOW kW	36.8	47.3	56.4	73.6		
COP	Cooling	1.40	1.37	1.41	1.40		
	Heating	1.37	1.35	1.43	1.37		
	AVE	1.39	1.36	1.42	1.39		
Max COP (Inc Hot water)	Cooling	1.87	1.85	1.92	1.87		
	Size Height x Width x Depth mm	2,248 x 1,800 x 1,000(+60)					
Starter Amperes	Weight kg	790		820	850		
	A	30					
Pipe	Gas	ø 25.4	ø 28.58	ø 28.58			
	Liquid	ø 12.7	ø 12.7	ø 15.88			
	Balance	ø 9.52					
	Fuel gas	R3/4 (Bolt thread)					
	Exhaust drain	ø 25 (Rubber hose)					
Operation sound	dB	57		58	62		
Indoor/Outdoor capacity ratio		50 - 200%					
Number of connection indoor		32	36	36	36		

*In case of these combination, EGW190M2G2W is able to connect sa W-multi system instead of EW190M2G2W.

*1: Low temp condition : Outdoor temperature 2°C



29	32	33*	36*	40*	45*	50
SGP-EW120M2G2W SGP-EW150M2G2W	SGP-EW150M2G2W SGP-EW150M2G2W	SGP-EW120M2G2W SGP-EW190M2G2W	SGP-EW150M2G2W SGP-EW190M2G2W	SGP-EW190M2G2W SGP-EW190M2G2W	SGP-EW190M2G2W SGP-EW240M2G2W	SGP-EW240M2G2W SGP-EW240M2G2W
80.5	90.0	91.5	101.0	112.0	127.0	142.0
90.0	100.0	103.0	113.0	126.0	143.0	160.0
95.5	106.0	109.5	120.0	134.0	142.0	150.0
28.0	32.0	32.0	36.0	40.0	45.0	50.0
2.20	2.70	2.20	2.70	2.70	2.70	2.70
2.02	2.02	2.02	2.02	2.02	2.55	3.08
56.1	63.2	62.8	69.9	76.6	99.2	121.8
64.2	72.2	71.1	79.1	86.0	101.0	116.0
84.1	94.6	93.2	103.7	112.8	121.3	129.8
1.38	1.37	1.41	1.39	1.41	1.25	1.14
1.36	1.35	1.41	1.39	1.43	1.38	1.34
1.37	1.36	1.41	1.39	1.42	1.31	1.24
1.86	1.85	1.90	1.89	1.92	1.69	1.54
2,248 x 1,800+100(min distance)+1,800(in case of straight installation) x 1,000(+60)						
1,580	1,580	1,610	1,610	1,640	1,670	1,700
30						
ø 31.75	ø 31.75	ø 31.75	ø 31.75	ø 38.1	ø 38.1	ø 38.1
ø 19.05	ø 19.05	ø 19.05	ø 19.05	ø 19.05	ø 19.05	ø 19.05
ø 9.52						
R3/4 (Bolt thread)						
ø 25 (Rubber hose)						
60	60	61	61	61	63	65
50 - 130%						
48						

Specifications subject to change without notice.

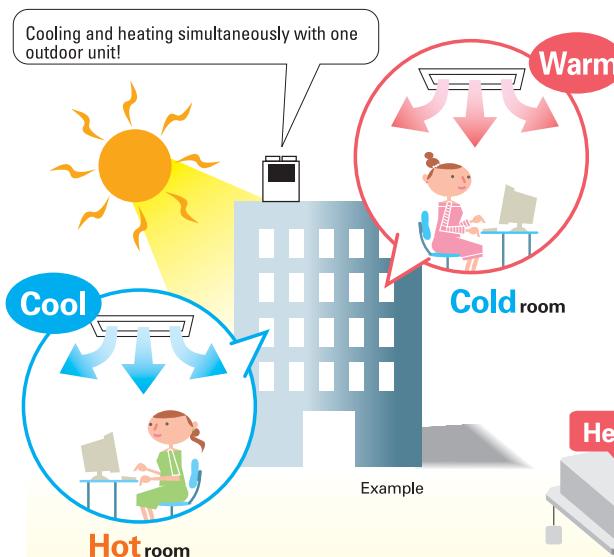


SANYO



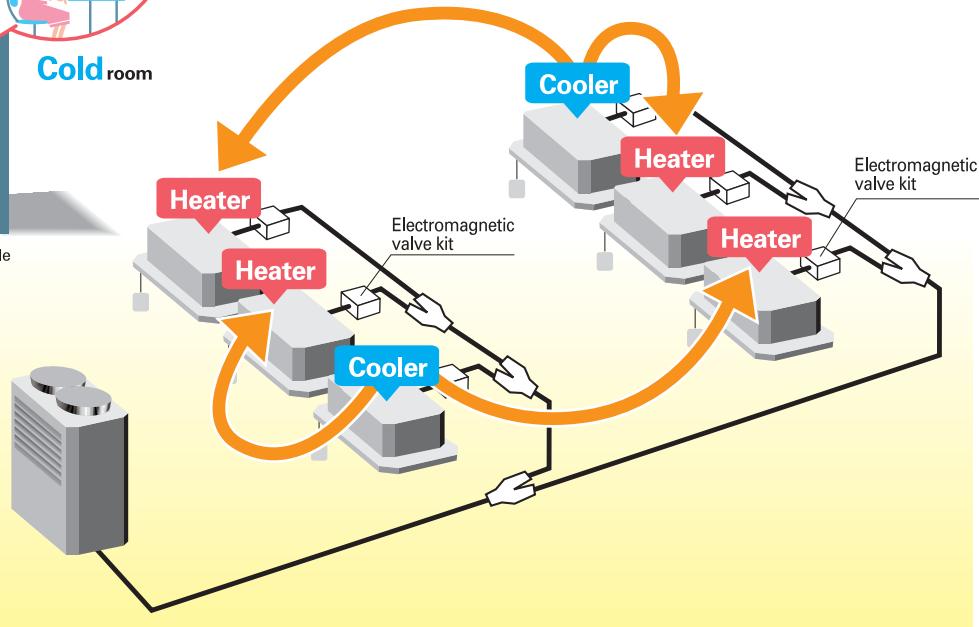
3WAY MULTI

With a refrigerant piping system, it is possible to have both cooling and heating at the same time!
This is a heat recovery system highly effective in saving energy.



The heat recovery system is excellent for saving energy

Normally, the heat extracted from the room which is to be cooled is discharged from outdoor units. It reduces the load for compressors and heat exchangers on outdoor units, and contributes to saving energy.



Variable Refrigerant Flow products

Gas Engine Driven Heat Pump Air conditioner

HP		16	20	25		
<i>Model name</i>		SGP-EZ150M2G2	SGP-EZ190M2G2	SGP-EZ240M2G2		
<i>Capacity</i>	<i>Cooling capacity</i> kW	45.0	56.0	71.0		
	<i>Heating capacity</i> STD kW	50.0	63.0	80.0		
	<i>Low temp*</i> kW	53.0	67.0	75.0		
<i>Electricity</i>	<i>C Power</i> kW	1.35	1.35	1.35		
	<i>H Power</i> kW	1.01	1.01	1.54		
<i>Gas consumption</i>	<i>C</i> kW	31.6	38.3	60.9		
	<i>H-STD</i> kW	36.1	43.0	58.0		
	<i>H-LOW</i> kW	47.3	56.4	64.9		
<i>COP</i>	<i>Cooling</i>	1.37	1.41	1.14		
	<i>Heating</i>	1.35	1.43	1.34		
	<i>AVE</i>	1.36	1.42	1.24		
<i>Size</i>	<i>Height x Width x Depth</i> mm	2,248 x 1,800 x 1,000(+60)				
	<i>Weight</i> kg	845	845	875		
<i>Starter Amperes</i>	A	30				
<i>Pipe</i>	Gas	ø 28.58				
	Discharge	ø 22.22	ø 25.4			
	Liquid	ø 19.05				
	Fuel gas	R3/4 (Bolt thread)				
	Exhaust drain mm	ø 25 (Rubber hose)				
<i>Operation sound</i>	dB	57	58	62		
<i>Indoor/Outdoor capacity ratio</i>		50 - 200% *1				
<i>Number of connection indoor</i>		36	36	36		

*Low temp condition: Outdoor temperature 2°C

*1: Indoor unit can be connect up to 16kW model (Model size 60)

Specifications subject to change without notice.

Excellent performance

SANYO 3 WAY multi system is capable of simultaneous heating/cooling and individual operation of each indoor unit by only one outdoor unit. As a result, efficient individual air conditioning is possible in buildings having diverse room temperatures.

Improved maintenance intervals

The unit only needs to be serviced every 10,000 hours. This is the best in the industry.

Up to 35% energy saving (SANYO estimate)

Effective heat recovery system enables up to 35% energy saving

The waste heat removed from the cooled room is effectively used as a heat source for the room to be heated. As a result, the load on the compressor and heat exchanger on the outdoor unit can be reduced, enabling excellent heat recovery.

System example

Solenoid Valve Kit
ATK-RZP56BGWB, ATK-RZP160BGWB

Flexible system design

120m piping allows effective system designs

Allowable piping length is a max. of 120m (actual length of 145m). This allows flexible installation and system designs. Up to 28 indoor units are capable of simultaneous heating/cooling operation.

Liquid pipe
(medium-temperature, medium-pressure liquid pipe)

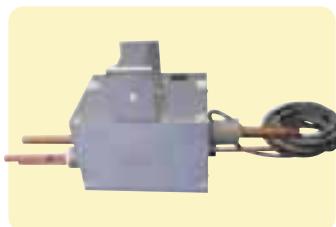
Suction pipe
(low-temperature, low-pressure gas pipe)

Discharge pipe
(high-temperature, high-pressure gas pipe)

Additional parts

Solenoid valve kit

- **ATK-RZP56BGWB**
(For 74 to 254 indoor unit)
- **ATK-RZP160BGWB**
(For 364 to 604 indoor unit)



* For conference rooms and other locations where low noise is required, pay attention to the installation location and install on a corridor etc.

* The industry's smallest SVK box: 166 x 147 x 217mm

Solenoid valve controller

- **ACC-3WAY-AGB**

(Distribution joint kits)

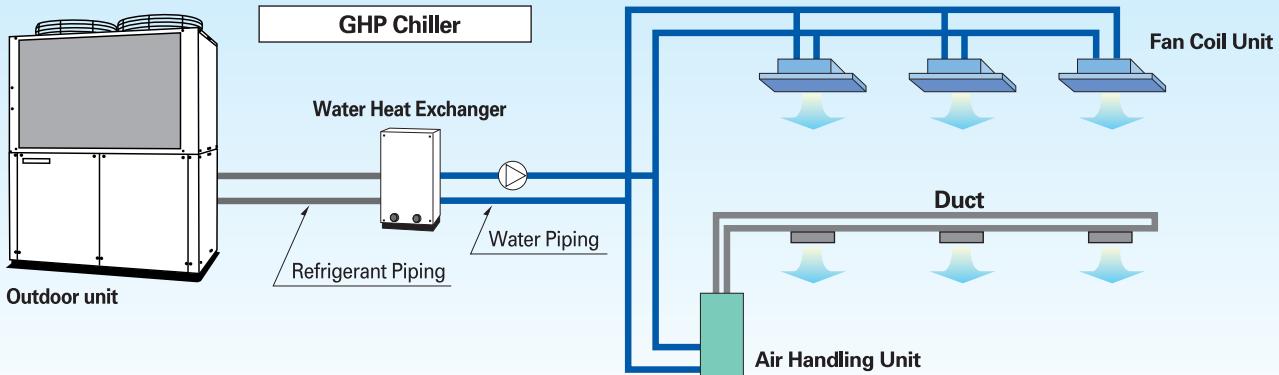
- **APR-RZP224BGB**
(16.0 kW or less)
- **APR-RZP680BGB**
(28.0 kW or less)
- **APR-RZP1350BGB**
(More than 35 kW)



Water Heat Exchanger



Water Heat Exchanger available up to 56 kW for Cooling capacity



The GHP WHE can provide water at a wide range of temperatures suitable for a wide variety of commercial applications from comfort air conditioning to food processing or the replacement of boilers and other systems.

- Reduced installation cost and circulating pump power

The water heat exchanger is a split type, which reduces installation costs and allows the use of a less powerful circulating pump.

- One-touch changeover between cooling and heating operation

- Can handle up to 120m of piping

The system can accommodate up to 120m (actual length) of piping between the outdoor unit and the water heat exchanger, so choosing an installation location is easy.

- Improved PCB of water heat exchanger

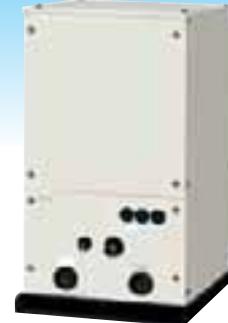
Because of S_Link Communication protocol, It is able to be controlled by system controller as normal indoor system.



RCS-TM80BG

Water Heat Exchanger unit

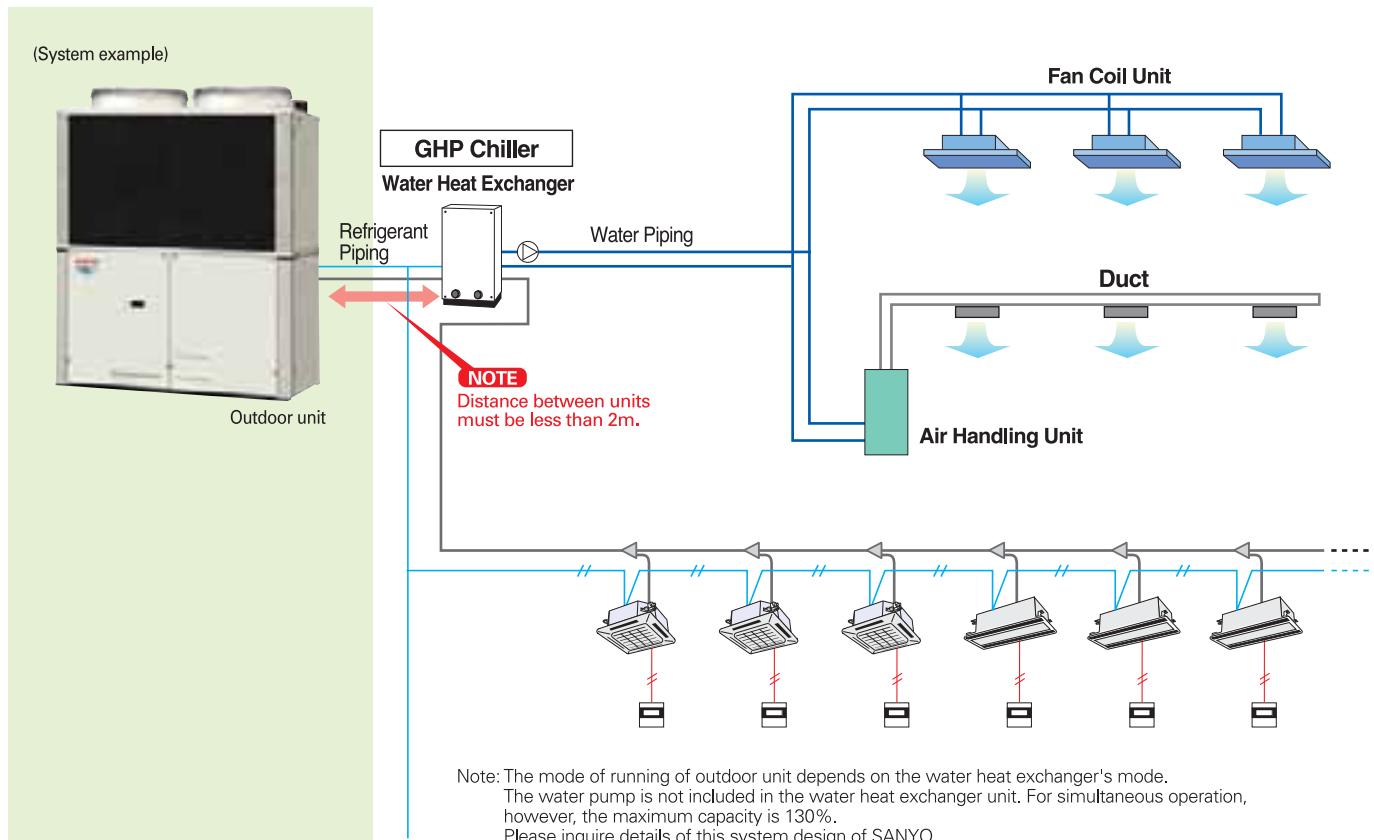
Model No.		SGP-WE80M1	SGP-WE170M1
SGP-EW120M2G2W	Cooling capacity kW	25	30
	Heating capacity kW	30	35.5
SGP-EW150M2G2W	Cooling capacity kW	25	37.5
	Heating capacity kW	30	45
SGP-EW190M2G2W/ SGP-EGW190M2G2W	Cooling capacity kW	25	50
	Heating capacity kW	30	60
SGP-EW240M2G2W	Cooling capacity kW	25	56
	Heating capacity kW	30	67
Electrical consumption	Cooling power consumption kW	0.01	0.01
	Heating power consumption kW	0.01	0.01
Power supply		220/230/240 V Single Phase 50 Hz	
External dimensions	Height mm	1,000	
	Width mm	550	
	Depth mm	965	
Weight	kg	125	160
Standard cold/hot water flow rate	m³/h	4.3	8.6
Hydrostatic loss	kPa	8.5	11.3
Holding water quantity inside the unit	m³	0.01	0.02
Minimum holding water quantity outside the unit	m³	0.28	0.50
Piping refrigerant	Gas pipe mm	ø22.22	ø28.58
	Liquid pipe mm	ø9.52	ø15.88
Heat exchanger		hot/cold heat exchanger	
Water circuit limit pressure	MPa	0.686	
Anti-freezing protection system		Protective Thermostat	



Specifications subject to change without notice.

System Mixing Flexibility for 2 WAY GHP

- Combined with a water heat exchanger unit, the SANYO GHP can create a flexible system--the ideal replacement for existing chiller and boiler systems.
- The GHP Multi System can have an indoor unit plus a GHP chiller. When the two systems are operated independently, an outdoor unit with 130% capacity can be connected.



Hot Water Supply Function

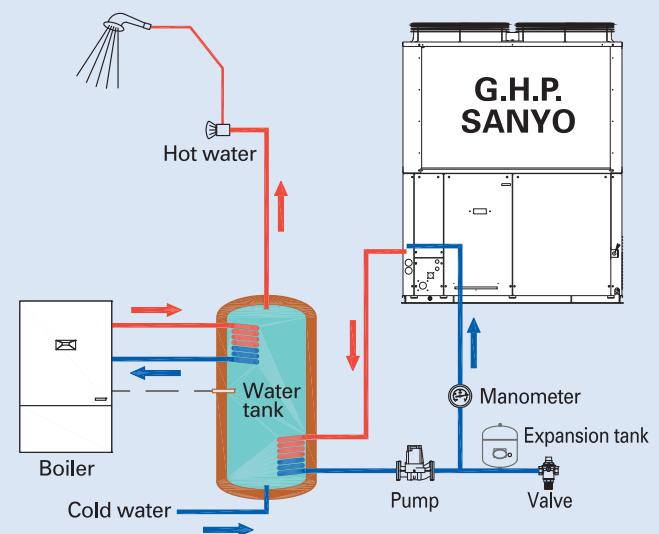
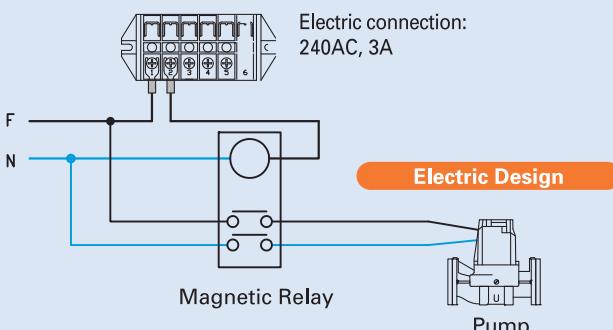
*Hot water capacity is approximately 50% of gas consumption at partial load.

System Advantage

The engine waste heat, which is normally exhausted into the atmosphere, is recovered via the heat exchanger and effectively used as hot water, so the GHP Chiller acts as a sub system that alleviates the load on the client's main hot water system, and therefore offers 'free' hot water.

Capacity at cooling standard point	Outlet temp 75°C
Outdoor unit SGP-EW120M2G2W	kW 12.0
SGP-EW150M2G2W	16.0
SGP-EW190M2G2W	20.0
SGP-EGW190M2G2W	22.0
SGP-EW240M2G2W	25.0

Hot water piping allowable pressure	MPa	0.7
Hot water circulation rate	m³/h	3.9
Hot water tube size	Rp 3/4	



- All the items illustrated in this draw (exception outdoor unit) are not Sanyo's supply.
- During start up, set temperature value of the water in the outdoor unit's parameter.

INDOOR UNITS FOR DIRECT EXPANSION SYSTEM

Wide choice of models depending on the indoor requirements

Model size	7	9	12	16	18	22
Capacity	kW 2.2 2.5	2.8 3.2	3.6 4.2	4.5 5.0	5.6 6.3	6.4 7.0
	BTU/h 7,500 8,500	9,600 11,000	12,000 14,000	15,000 17,000	19,000 21,000	22,000 24,000
XM type (600 x 600) Semi-Concealed Cassette 4-Way Air Discharge		SPW-XM075XH Panel PNR-XM185	SPW-XM095XH Panel PNR-XM185	SPW-XM125XH Panel PNR-XM185	SPW-XM165XH Panel PNR-XM185	SPW-XM185XH Panel PNR-XM185
X type Semi-Concealed Cassette 4-Way Air Discharge		SPW-X075XH Panel PNR-XD484GHAB	SPW-X095XH Panel PNR-XD484GHAB	SPW-X125XH Panel PNR-XD484GHAB	SPW-X165XH Panel PNR-XD484GHAB	SPW-X185XH Panel PNR-XD484GHAB
XMR type (600 x 600) Semi-Concealed Cassette 4-Way Air Discharge		SPW-XMR74EXH56B Panel PNR-XM184EHA	SPW-XMR94EXH56B Panel PNR-XM184EHA	SPW-XMR124EXH56B Panel PNR-XM184EHA	SPW-XMR164EXH56B Panel PNR-XM184EHA	SPW-XMR184EXH56B Panel PNR-XM184EHA
SR type Semi-Concealed Cassette 2-Way Air Discharge		SPW-SR74GXH56B Panel PNR-S124GHB	SPW-SR94GXH56B Panel PNR-S124GHB	SPW-SR124GXH56B Panel PNR-S124GHB	SPW-SR164GXH56B Panel PNR-S124GHB	SPW-SR184GXH56B Panel PNR-S124GHB
ADR type Semi-Concealed Cassette 1-Way Air Discharge		SPW-ADR74GXH56B Panel PNR-AD124GHB	SPW-ADR94GXH56B Panel PNR-AD124GHB	SPW-ADR124GXH56B Panel PNR-AD124GHB		
LDR type Semi-Concealed Slim Cassette			SPW-LDR94GXH56B Panel PNR-LD254GHAB	SPW-LDR124GXH56B Panel PNR-LD254GHAB	SPW-LDR164GXH56B Panel PNR-LD254GHAB	SPW-LDR184GXH56B Panel PNR-LD254GHAB
U type Concealed Duct		SPW-U075XH	SPW-U095XH	SPW-U125XH	SPW-U165XH	SPW-U185XH
UR type Concealed-Rectangle Duct		SPW-U075SXHT	SPW-U095SXHT	SPW-U125SXHT	SPW-U165SXHT	SPW-U185SXHT
US type Concealed Duct		SPW-US075XH	SPW-US095XH	SPW-US125XH	SPW-US165XH	SPW-US185XH
FUR type Floor/Ceiling Slim Concealed Duct		SPW-FUR74EXH56B	SPW-FUR94EXH56B	SPW-FUR124EXH56B	SPW-FUR164EXH56B	SPW-FUR184EXH56B
UMR type Concealed Duct		SPW-UMR74EXH56B	SPW-UMR94EXH56B	SPW-UMR124EXH56B	SPW-UMR164EXH56B	SPW-UMR184EXH56B
DR type Concealed Duct High-Static Pressure	 <small>25-48 type</small> <small>76,96 type</small>					
T type Ceiling- Mounted Units				SPW-T125XH	SPW-T165XH	SPW-T185XH
FTR type Floor/Ceiling Mounted Units		SPW-FTR74EXH56B	SPW-FTR94EXH56B	SPW-FTR124EXH56B	SPW-FTR164EXH56B	SPW-FTR184EXH56B
K type Wall Mounted Units		SPW-K075XH	SPW-K095XH	SPW-K125XH		
KR type Wall-Mounted Units		SPW-KR74GXH56B	SPW-KR94GXH56B	SPW-KR124GXH56B	SPW-KR164GXH56B	SPW-KR184GXH56B
FMR type Concealed Floor Standing Units		SPW-FMR74GXH56B	SPW-FMR94GXH56B	SPW-FMR124GXH56B	SPW-FMR164GXH56B	SPW-FMR184GXH56B
FR type Floor Standing Units		SPW-FR74GXH56B	SPW-FR94GXH56B	SPW-FR124GXH56B	SPW-FR164GXH56B	SPW-FR184GXH56B
GU type Total Heat Exchanger with DX coil			SPW-GU055XH		SPW-GU075XH	SPW-GU105XH



	25	30	36	48	60	76	96	Wireless remote control	Function
	7.3 8.0	9.0 10.0	10.6 11.4	14.0 16.0	16.0 18.0	22.4 25.0	28.0 31.5	Type with built-in reception part	
	25,000 27,000	30,000 34,000	36,000 39,000	47,800 54,600	54,600 61,500	76,400 85,300	95,500 107,500		
								•	•
	SPW-X255XH Panel PNR-XD484GHAB		SPW-X365XH Panel PNR-XD484GHAB	SPW-X485XH Panel PNR-XD484GHAB	SPW-X605XH Panel PNR-XD484GHAB			•	•
								•	•
	SPW-SR254GXH56B Panel PNR-S253GHANB							•	•
								•	•
	SPW-LDR254GXH56B Panel PNR-LD254GHAB							•	•
	SPW-U255XH		SPW-U365XH	SPW-U485XH	SPW-U605XH			•	•
	SPW-U255SXHT	SPW-U305SXHT	SPW-U365SXHT	SPW-U485SXHT	SPW-U605SXHT			•	
								•	
								•	
	SPW-DR254GXH56B		SPW-DR364GXH56B	SPW-DR484GXH56B		SPW-DR764GXH56B	SPW-DR964GXH56B	•	•
	SPW-T255XH		SPW-T365XH	SPW-T485XH				•	•
								•	•
	SPW-KR254GXH56B							•	•
	SPW-FMR254GXH56B							•	
	SPW-FR254GXH56B							•	
								•	

Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

SEMI-CONCEALED 4-WAY AIR DISCHARGE

XM type

600 x 600



■ Option

- Wired remote controller



RCS-TM80BG

- Wireless remote controller



RCS-XM18BG.WL

- Simplified remote controller



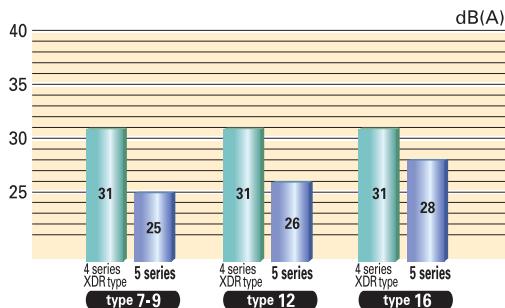
RCS-BH80BG.WL

- Panel

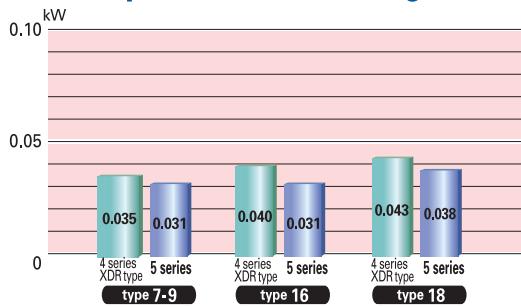


PNR-XM185

■ New turbo fans and heat exchanger fins with new shapes are adopted, and the operating sound could be dramatically reduced by max.

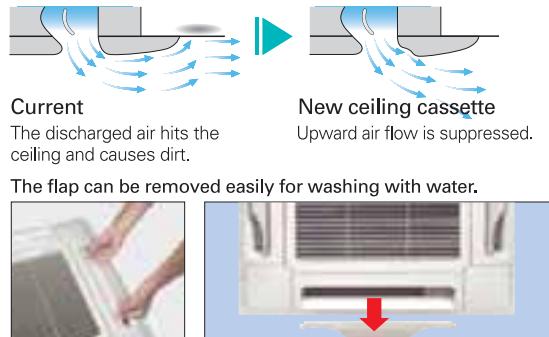


■ Wide reduction of the power consumption by adoption of newly developed DC fan motors with variable speed, new heat exchangers, etc!

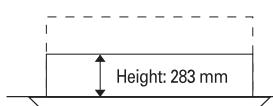


■ Discharge opening and flap with new shape

The condensate and dirt appearing near the discharge ports of the conventional ceiling cassettes have been reduced.

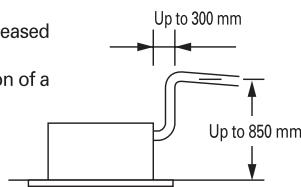


■ Lighter and thinner, easier installation!



■ A drain height of approx. 850 mm from the ceiling surface

The drain height could be increased by approx. 350 mm over the conventional value by adoption of a high-lift drain pump, and correspondence to long horizontal piping is possible.



Indoor units specifications

Model name	(SPW-)	XM075XH	XM095XH	XM125XH	XM165XH	XM185XH
Power source		220/230/240V, 1 phase-50, 60Hz				
Cooling capacity	kW	2.2	2.8	3.6	4.7	5.6
	BTU/h	7,500	9,600	12,000	15,000	19,000
Heating capacity	kW	2.5	3.2	4.0	5.0	6.3
	BTU/h	8,500	11,000	14,000	17,000	21,000
Moisture Removal (High)		Liters/h	0.2	0.6	1.1	1.5
Power input	Cooling kW	0.024 / 0.025 / 0.025		0.026 / 0.027 / 0.027	0.030 / 0.031 / 0.031	0.037 / 0.038 / 0.038
	Heating kW	0.014 / 0.015 / 0.015		0.017 / 0.017 / 0.018	0.020 / 0.021 / 0.021	0.029 / 0.029 / 0.029
Running amperes	Cooling A	0.16 / 0.16 / 0.15		0.18 / 0.18 / 0.17	0.21 / 0.21 / 0.20	0.29 / 0.29 / 0.28
	Heating A	0.13 / 0.13 / 0.12		0.15 / 0.15 / 0.14	0.18 / 0.18 / 0.17	0.26 / 0.26 / 0.25
Fan motor	Type	Centrifugal fan				
	Airflow rate (H/M/L) m³/min	8 / 7 / 6		9 / 8 / 7	10.7 / 8.5 / 7.5	12.5 / 10.5 / 9
	Output kW	0.020				
Power sound level (H/M/L) dB(A)		46 / 43 / 41		49 / 46 / 42	53 / 48 / 45	58 / 54 / 50
Operating sound (H/M/L) dB(A)		30 / 27 / 25		32 / 29 / 26	36 / 32 / 28	41 / 37 / 33
Dimensions	Height mm	283				
	Width mm	575 <625>				
	Depth mm	575 <625>				
Piping connections	Liquid (Flare) mm	6.35 (1/4)				
	Gas (Flare) mm	12.7 (1/2)				
	Drain piping	VP-20				
Net weight kg		16 + <2.4>				

Rated conditions

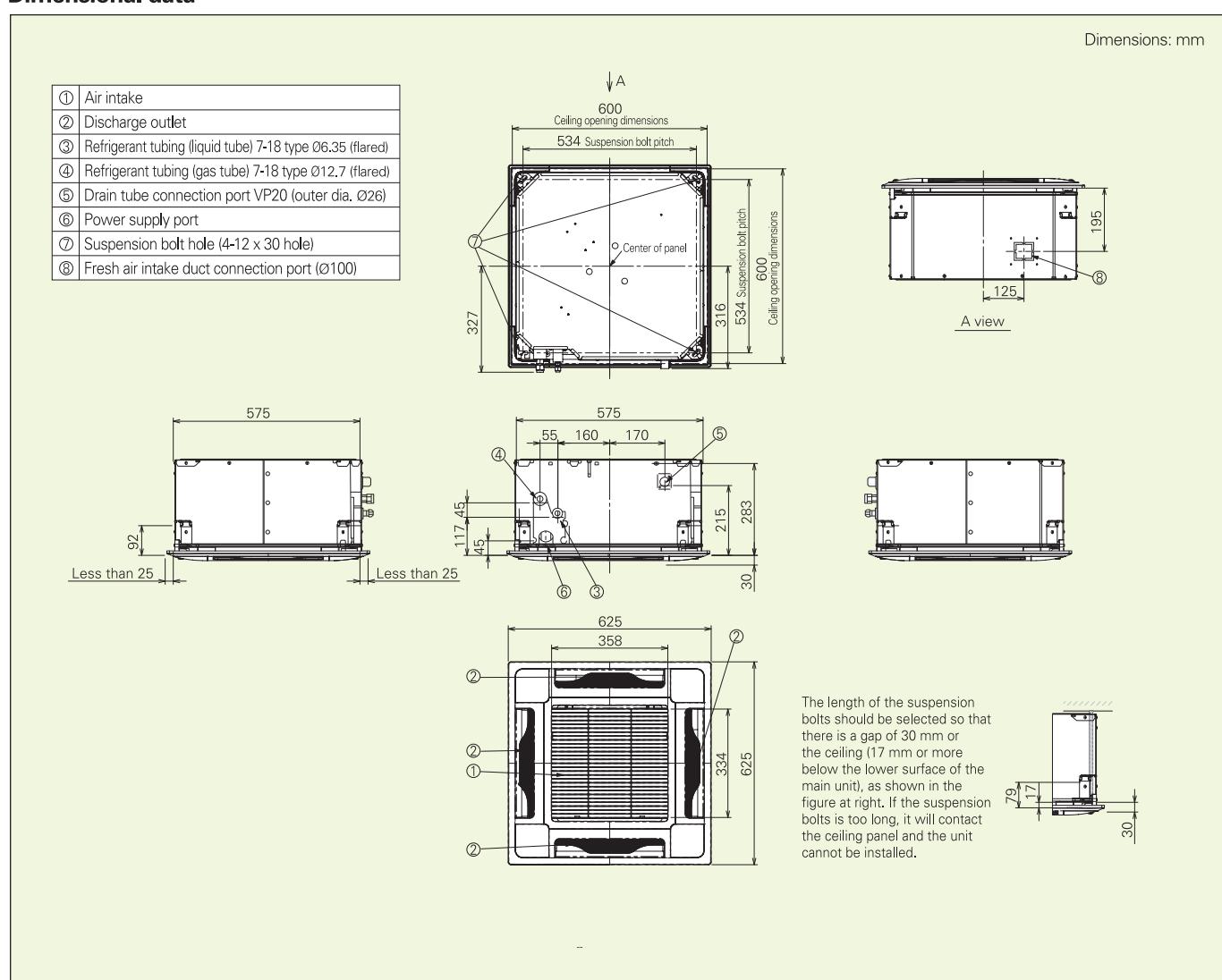
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel.

Data subject to change without notice.

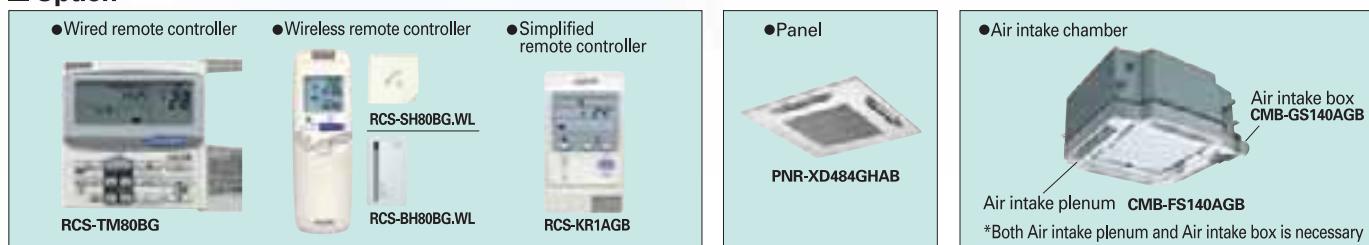
Dimensional data



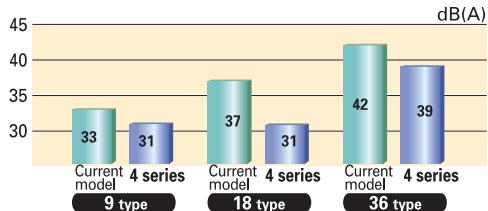
SEMI-CONCEALED CASSETTE 4-WAY AIR DISCHARGE



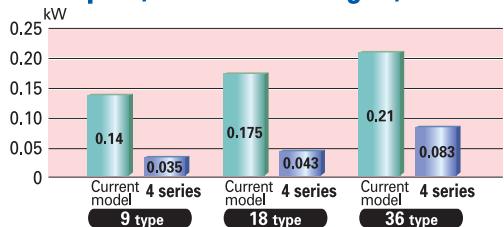
■ Option



■ Turbo fans and heat exchanger fins with new shapes are adopted, and the operating sound could be reduced by max. 6 dB (A)!

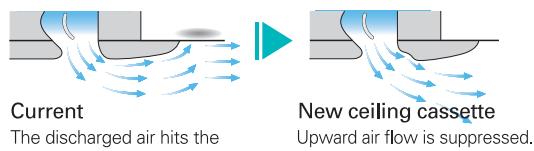


■ Wide reduction of the power consumption by adoption of newly developed DC fan motors with variable speed, new heat exchangers, etc!



■ Discharge opening and flap with new shape

The condensate and dirt appearing near the discharge ports of the conventional ceiling cassettes have been reduced.

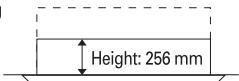


The flap can be removed easily for washing with water.



■ Lighter and thinner, easier installation!

- The top class lightest weight with 26 kg (for type 36~60), body height only 256 mm (7~25), so that installation is possible even in narrow ceilings.



■ Easy fine adjustment of the body suspension height!

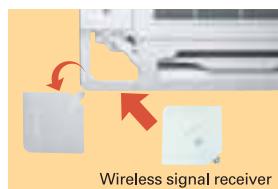
The four corners of the ceiling panel have adopted removable corner pockets.



Even after installation, fine adjustment of the suspension height is possible easily by removing the corner pockets.

■ Light, thin, and attractive design with easy installation

- The direction of the air intake grille can be changed.
- A wireless remote control light receiver can be installed by changing the corner cover. The installation can be done in a short time.



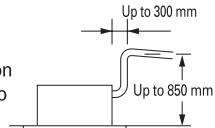
■ Easy servicing of the drain pan

A large-diameter (45 mm) drain pan inspection port has been provided, and drain pan and drain pump can be cleaned easily.



■ A drain height of approx. 850 mm from the ceiling surface

The drain height could be increased by approx. 350 mm over the conventional value by adoption of a high-lift drain pump, and correspondence to long horizontal piping is possible.



Indoor units specifications

Model name (SPW-)		X075XH	X095XH	X125XH	X165XH	X185XH	X255XH	X365XH	X485XH	X605XH
Power source		220/230/240V, 1 phase~50, 60Hz								
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.3	10.6	14.0	16.0
	BTU/h	7,500	9,600	12,000	15,000	19,000	25,000	36,000	47,800	54,600
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0	11.4	16.0	18.0
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	39,000	54,600	61,400
Power input	Cooling kW	0.035/0.035/0.036	0.039/0.040/0.041	0.042/0.043/0.044	0.052/0.052/0.053	0.082/0.083/0.083	0.111/0.112/0.113	0.117/0.118/0.122		
	Heating kW	0.027/0.027/0.028	0.030/0.031/0.032	0.032/0.033/0.034	0.042/0.043/0.043	0.074/0.076/0.077	0.103/0.103/0.104	0.108/0.108/0.111		
Running amperes	Cooling A	0.27/0.27/0.26	0.31/0.30/0.30	0.34/0.33/0.32	0.43/0.42/0.41	0.67/0.63/0.60	0.91/0.88/0.84	0.97/0.92/0.92		
	Heating A	0.23/0.23/0.22	0.26/0.25/0.25	0.29/0.28/0.28	0.38/0.36/0.35	0.64/0.63/0.62	0.89/0.88/0.86	0.96/0.95/0.93		
Fan motor	Type	Turbo fan *1								
Airflow rate (H/M/L)	m³/min	15.5/14/13				16/14/13	20/16/14	28/23/21	33/25/22	34/27/23
	Output kW	0.05				0.09				
Power sound level (H/M/L)	dB(A)	42/40/38				45/42/39	50/47/44	53/49/45	55/51/47	
Pressure sound level (H/M/L)	dB(A)	31/29/27				34/31/28	39/36/33	42/38/34	44/40/36	
Dimensions	Height mm	256 + <35>				319 + <35>				
Piping connections	Width mm	840 <950>				840 <950>				
	Depth mm	6.35				9.52				
Net weight	Gas (Flare) mm	12.7				15.88				
	Drain piping VP-25									
Net weight kg		21 + <4.5>				22 + <4.5>	26 + <4.5>			

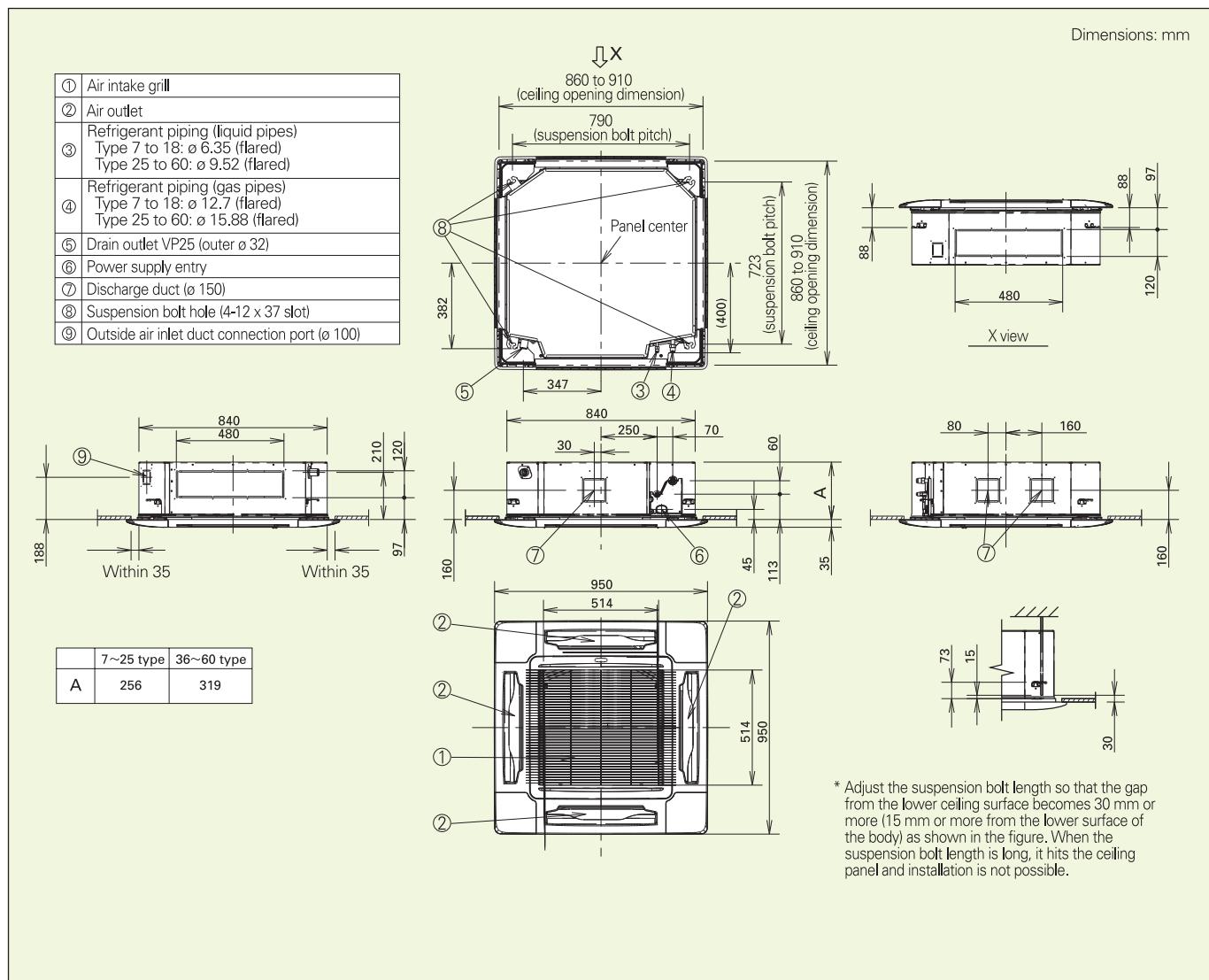
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
 Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel.

Data subject to change without notice.

Dimensional data



SEMI-CONCEALED CASSETTE 4-WAY AIR DISCHARGE

XMR^{type}



■ Option

- Wired remote controller



RCS-TM80BG

- Wireless remote controller



RCS-BH80BG.WL

- Simplified remote controller



RCS-KR1AGB

- Panel



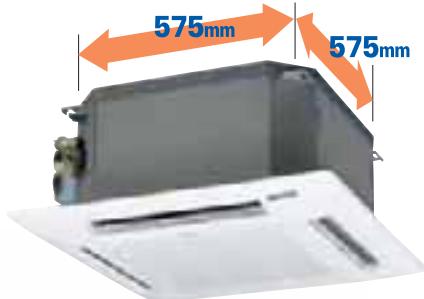
PNR-XM184EHAB

■ New dimensions 600 x 600 mm suitable for European under ceiling standards

■ Three-speed centrifugal fan

■ Anti-mould and anti-bacteria washable filters

■ Low operating sound



Indoor units specifications

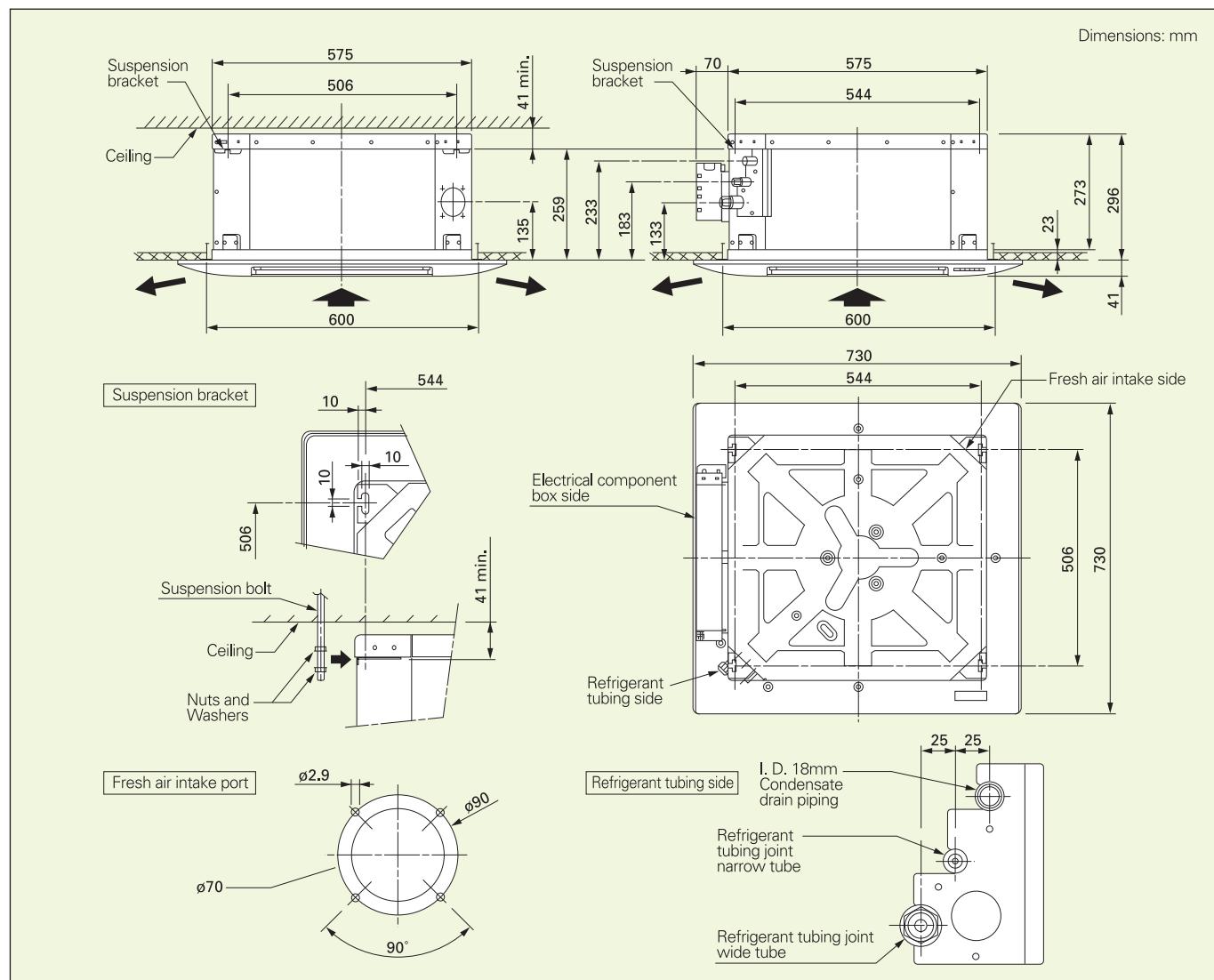
Model name	(SPW-)	XMR74EXH56B	XMR94EXH56B	XMR124EXH56B	XMR164EXH56B	XMR184EXH56B		
Power source		220/230/240V, 1 phase-50Hz						
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6		
	BTU/h	7,500	9,600	12,000	15,000	19,000		
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3		
	BTU/h	8,500	11,000	14,000	17,000	21,000		
Power input	Cooling kW			0.087/0.087/0.087				
	Heating kW			0.087/0.087/0.087				
Running amperes	Cooling A			0.41/0.41/0.41				
	Heating A			0.41/0.41/0.41				
Fan motor	Type	Centrifugal fan						
	Airflow rate (H/M/L) m³/min	11.7/10/8.3			12.5/10.5/8.8			
	Output kW	0.06			0.06			
Power sound level (H/M/L) dB(A)		54/51/48			55/51/48			
Pressure sound level (H/M/L) dB(A)		43/40/37			44/40/37			
Dimensions	Height mm	296						
	Width mm	575 <730>						
	Depth mm	575 <730>						
Piping connections	Liquid (Flare) mm	6.35 (1/4)						
	Gas (Flare) mm	12.7 (1/2)						
	Drain piping	VP-18						
Net weight kg		16.5 +<2.5>			18 +<2.5>			

Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



SEMI-CONCEALED CASSETTE 2-WAY AIR DISCHARGE

SR^{type}



■ Option

- Wired remote controller



RCS-TM80BG

- Wireless remote controller



RCS-SS80BG.WL

- Simplified remote controller



RCS-BH80BG.WL

RCS-KR1AGB

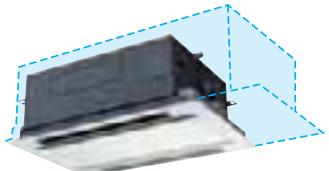
- Panel



PNR-S253GHANB (For 254 type)
PNR-S124GHB (For 74~184 type)

■ Realization of thin, compact, and light units!

Remarkable size and weight reductions have been realized by improvement of the design around the fan. In addition, the size for the type 18 has been reduced by one rank compared to current model.



In case of the type 18

Body volume

Approx. 30% reduction

Weight (body + panel)

Reduction from 50 kg to 30 kg
(approx. 40% reduction)

Comparison with the current type

	7 type	25 type
Body volume	Approx. 14% reduction	Approx. 12% reduction
Weight (body + panel)	40 kg to 30 kg (approx. 25% reduction)	50 kg to 39 kg (approx. 22% reduction)

■ Silent design

Low operating sound in the top class of the industry have been realized by adoption of high-efficiency fans.

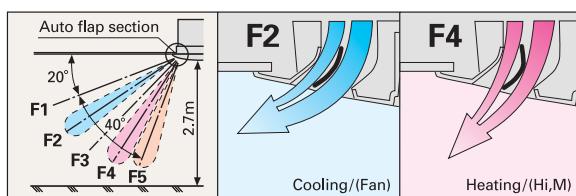
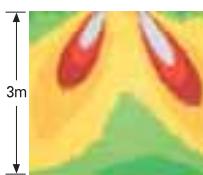
Operation noise

7 type	9 type	12 type	16·18 type	25 type
30·24	33·26	34·28	35·29	38·33

High/low notch, dB/A

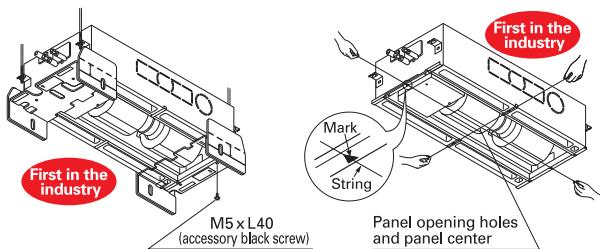
■ Realization of most suitable air flow for heating and cooling

Automatic setting to the most suitable flap angle for heating and cooling and an auto-swing mechanism for widening of the air flow are provided.

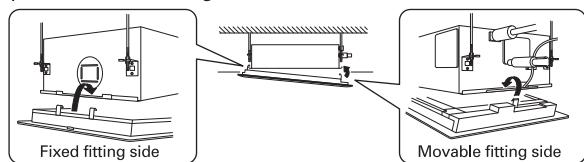


■ Excellent installation performance

● The packing pad can be used for the ceiling opening dimensions and for adjustment of the height of the indoor unit.

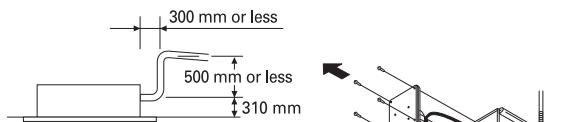


● Even large ceiling panels can be installed easily by the provisional fastening method.

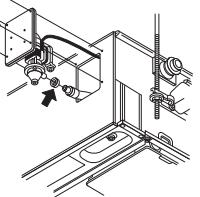


■ Adoption of a power up-drain pump

● Drain up is possible up to 500 mm from the drain port.



● Maintenance of the drain pump is possible from two sides, from the left (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 and the fan can be removed easily when the lower case is removed.

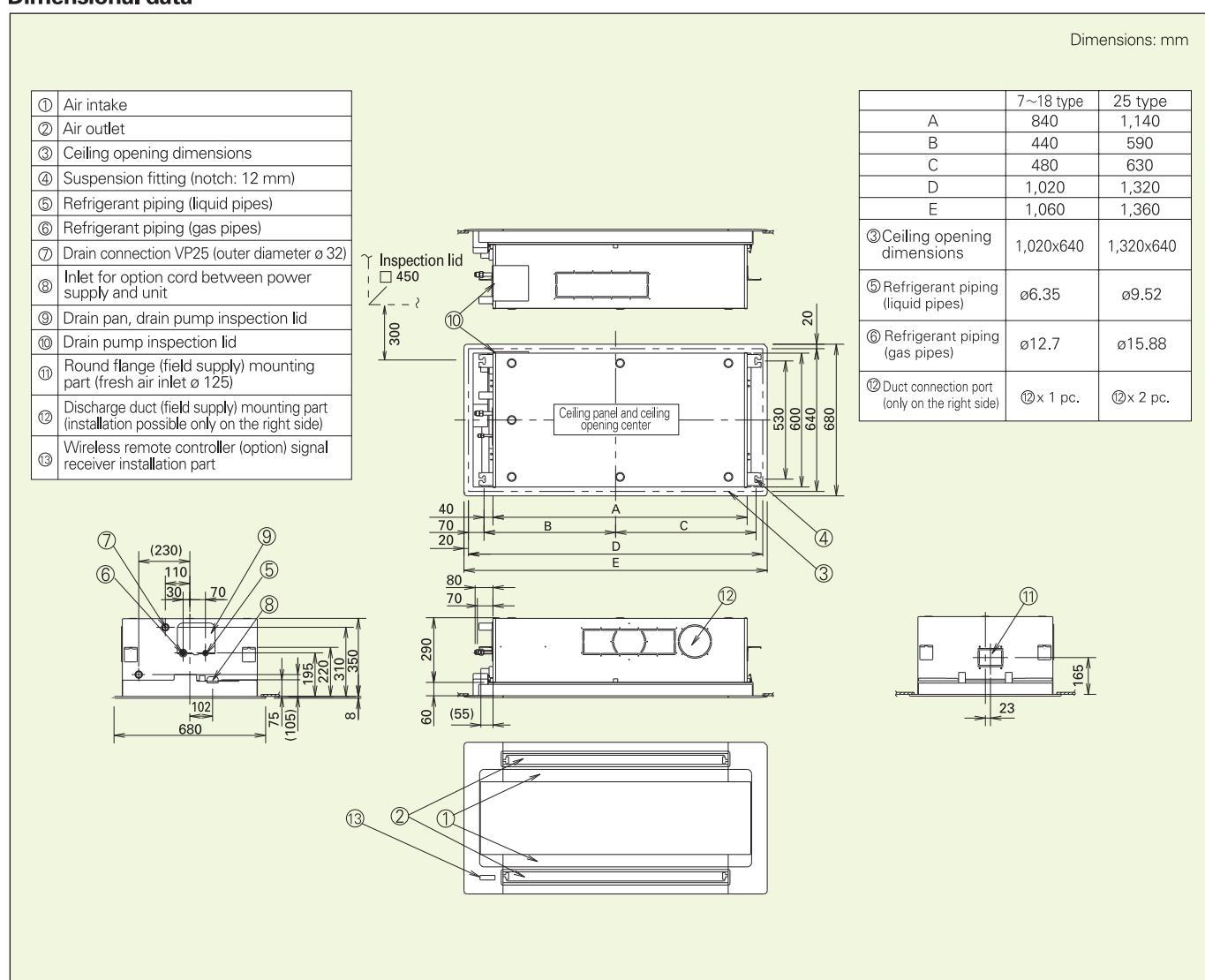
Indoor units specifications

Model name	(SPW-)	SR74GXH56B	SR94GXH56B	SR124GXH56B	SR164GXH56B	SR184GXH56B	SR254GXH56B					
Power source		220/230/240V, 1 phase-50, 60Hz										
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.3					
	BTU/h	7,500	9,600	12,000	15,000	19,000	25,000					
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0					
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000					
Power input	Cooling	kW	0.086/0.090/0.095	0.086/0.092/0.097	0.088/0.093/0.099	0.091/0.097/0.103	0.135/0.145/0.154					
	Heating	kW	0.055/0.058/0.062	0.055/0.060/0.064	0.057/0.061/0.066	0.060/0.065/0.070	0.100/0.109/0.117					
Running amperes	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	0.64/0.65/0.66					
	Heating	A	0.29/0.29/0.30	0.28/0.29/0.30	0.28/0.29/0.30	0.29/0.29/0.30	0.46/0.48/0.49					
Fan motor	Type		Sirocco fan *1				Sirocco fan *2					
	Airflow rate (H/M/L)	m³/min	8/7/6	9/8/7	9.6/8.6/7.6	11/9/8	19/16/14					
	Output	kW			0.03		0.05					
Power sound level (H/M/L)		dB(A)	40/38/35	44/40/37	45/42/39	46/44/40	49/46/44					
Pressure sound level (H/M/L)		dB(A)	30/27/24	33/29/26	34/31/28	35/33/29	38/35/33					
Dimensions	Height	mm	350 + <8>									
	Width	mm	840 <1060>									
	Depth	mm	600 <680>									
Piping connections	Liquid (Flare)	mm	6.35									
	Gas (Flare)	mm	12.7									
	Drain piping		VP-25									
Net weight		kg	23 + <7>									
Rated conditions												
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB												
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB												

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel.

Data subject to change without notice.

Dimensional data



SEMI-CONCEALED CASSETTE 1-WAY AIR DISCHARGE

ADR^{type}



■ Option

- Wired remote controller



RCS-TM80BG

- Wireless remote controller



RCS-TRP80BG.WL

- Simplified remote controller



RCS-BH80BG.WL



RCS-KR1AGB

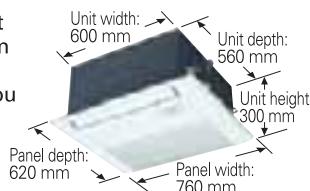
- Panel



PNR-AD124GHB

■ Compact Size in the top class of the industry

The compact design keeps unit width and height to a minimum and delivers the industry's smallest panel width, giving you plenty of leeway in selecting an installation space.



■ Lightweight Construction in the top class of the industry

With a maximum unit weight of 8.5 kg, installation work is a snap.

Weight of Products (kg)

Type	Unit weight (including Panel)	
	B type	Current model
7 type	17+(2.5)	23+(3)
9 type	17+(2.5)	23+(3)
12 type	17+(2.5)	25+(3)

■ Quiet Operation in the top class of the industry

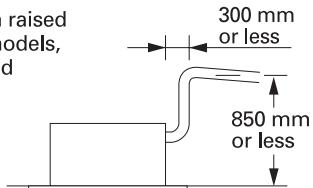
With operating noise reduced by up to 3 dB(A) over existing models, the unit creates a quiet, comfortable room environment.

Operation noise dB(A)

Type	B type	Current model
7 type	33 / 29	34 / 30
9 type	33 / 29	34 / 30
12 type	36 / 31	39 / 33

■ Quiet Operation in the top class of the industry

The drain height has been raised by 63 mm over existing models, so operation can be started from the ceiling and pipe layout design has greater freedom.



■ Auto Flap and Auto Swing Functions

The Auto Flap function lets you set the air direction by remote control, and the Auto Swing function delivers a uniform amount of air to every part of the room. What is more, the flap can be closed when the unit is not operating to keep dust from entering the room.

■ The hanging height of the unit can be easily adjusted



Adjustable covers are equipped on both sides of the ceiling panel so that the hanging height of the unit can be adjusted even after the panel has been installed.

Adjustable covers on both sides of panel



Indoor units specifications

Model name	(SPW-)	ADR74GXH56B	ADR94GXH56B	ADR124GXH56B
Power source		220/230/240V, 1 phase~50, 60Hz		
Cooling capacity	kW	2.2	2.8	3.6
	BTU/h	7,500	9,600	12,000
Heating capacity	kW	2.5	3.2	4.2
	BTU/h	8,500	11,000	14,000
Power input	Cooling kW	0.060/0.061/0.063		0.064/0.064/0.067
	Heating kW	0.037/0.037/0.038		0.039/0.039/0.04
Running amperes	Cooling A	0.24/0.23/0.22		0.25/0.24/0.24
	Heating A	0.16/0.16/0.16		0.17/0.17/0.17
Fan motor	Type	Sirocco fan *1		
	Airflow rate (H/M/L) m³/min	8/7/6		9/8/7
	Output kW	0.02		
Power sound level (H/M/L) dB(A)		44/42/40		47/45/42
Pressure sound level (H/M/L) dB(A)		33/31/29		36/34/31
Dimensions	Height mm	300 + <30>		
	Width mm	600 <760>		
	Depth mm	560 <620>		
Piping connections	Liquid (Flare) mm	6.35		
	Gas (Flare) mm	12.7		
	Drain piping	VP-25		
Net weight kg		17 + <2.5>		

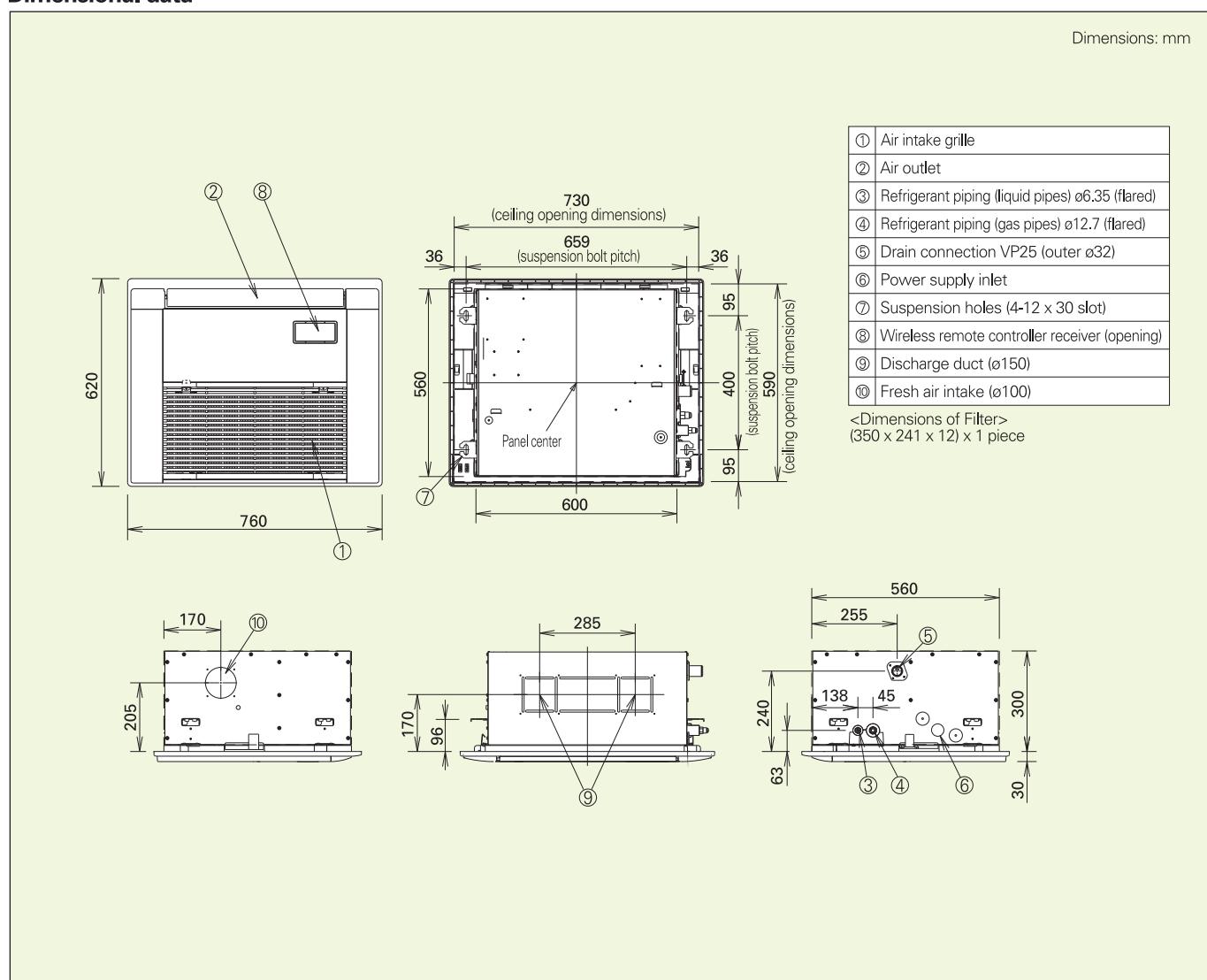
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in <> for external dimensions and net weight are the values for the optional ceiling panel.

Data subject to change without notice.

Dimensional data



SEMI-CONCEALED SLIM CASSETTE

LDR^{type}



Our slim model, which is only 200mm in depth, can air-condition spaces with ceiling heights up to 4.2m.



■ Option

•Wired remote controller



RCS-TM80BG

•Wireless remote controller



RCS-TRP80BG.WL

•Simplified remote controller



RCS-BH80BG.WL



RCS-KR1AGB

•Panel



PNR-LD254GHAB

■ Top industrial capacity*1 to handle ceiling heights up to 4.2m

•Attained height/ceiling height based on fan motor speed setting (m)

Indoor unit type *2	9-type ~18-type		25-type	
	Attained height	Ceiling height	Attained height	Ceiling height
Factory setting	3.2	3.5	3.5	3.8
High-ceiling setting	3.9	4.2	3.9	4.2
Ceiling-mounted installation	2.4	2.7	2.4	2.7

*1 With one-direction type for high ceilings (current as of November 2004)

*2 For setting method, refer to the installation instructions that came with the ceiling panel.

■ Lightweight, Compact and Quiet

With a full model change, all models are now the top industrial lightweight units*. And with all models having coordinated dimensions between the unit and the panel, multi-unit installations have a smart, attractive appearance. (* Current as of November 2004)

■ Product (unit + panel) weight (kg)

	Current model	New model	Reduction
9/12 type	26+(8)kg	21+(5.5)kg	22%
16/18 type	27+(8)kg	21+(5.5)kg	24%
25 type	30+(9)kg	22+(5.5)kg	29%

■ Operating noise [dB(A)] (High/Low operation)

	Current model	New model
9/12 type	43/33	36/33
16 type	44/35	36/34
18 type	44/35	38/34
25 type	46/36	45/36

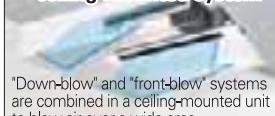
■ With 3 types of air-blow systems, the units can be used in various ways.

(1) One-direction down-blow system



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

(2) Two-direction ceiling-mounted system



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

(3) One-direction ceiling-mounted system



This powerful ceiling-mounted "front-blow" system efficiently air-conditions the space in front of the unit.



■ Smudge-free operation

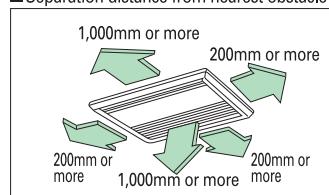
Setting the flap in the smudge-free position suppresses soiling around the air outlet that is seen in conventional ceiling cassettes, so the ceiling stays clean at all times.

■ The hanging height of the unit can be easily adjusted.

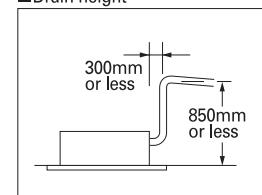
The up-down position of the unit can be easily adjusted by simply removing the panel side covers, without having to remove the ceiling panel.



■ Separation distance from nearest obstacle



■ Drain height



Indoor units specifications

Model name	(SPW-)	LDR94GXH56B	LDR124GXH56B	LDR164GXH56B	LDR184GXH56B	LDR254GXH56B
Power source		220/230/240V, 1 phase-50, 60Hz				
Cooling capacity	kW	2.8	3.6	4.5	5.6	7.3
	BTU/h	9,600	12,000	15,000	19,000	25,000
Heating capacity	kW	3.2	4.2	5.0	6.3	8.0
	BTU/h	11,000	14,000	17,000	21,000	27,000
Power input	Cooling	kW	0.050/0.051/0.052		0.058/0.060/0.061	0.086/0.087/0.089
	Heating	kW	0.039/0.040/0.042		0.046/0.048/0.049	0.075/0.076/0.077
Running amperes	Cooling	A	0.40/0.39/0.39		0.46/0.46/0.46	0.71/0.70/0.69
	Heating	A	0.36/0.35/0.35		0.42/0.41/0.41	0.66/0.65/0.63
Fan motor	Type		Sirocco fan *2			
	Airflow rate (H/M/L)	m³/min	12/10/9	12/11/10	13/11.5/10	18/15/13
	Output	kW		0.05		
Power sound level (H/M/L)		dB(A)	47/45/44	47/46/45	49/47/45	56/51/47
Pressure sound level (H/M/L)		dB(A)	36/34/33	36/35/34	38/36/34	45/40/36
Dimensions	Height	mm	200 + <20>			
	Width	mm	1,000 <1,230>			
	Depth	mm	710 <800>			
Piping connections	Liquid (Flare)	mm	6.35			
	Gas (Flare)	mm	12.7			
	Drain piping		VP-25			
Net weight		kg	21 + <5.5>		22 + <5.5>	

Rated conditions

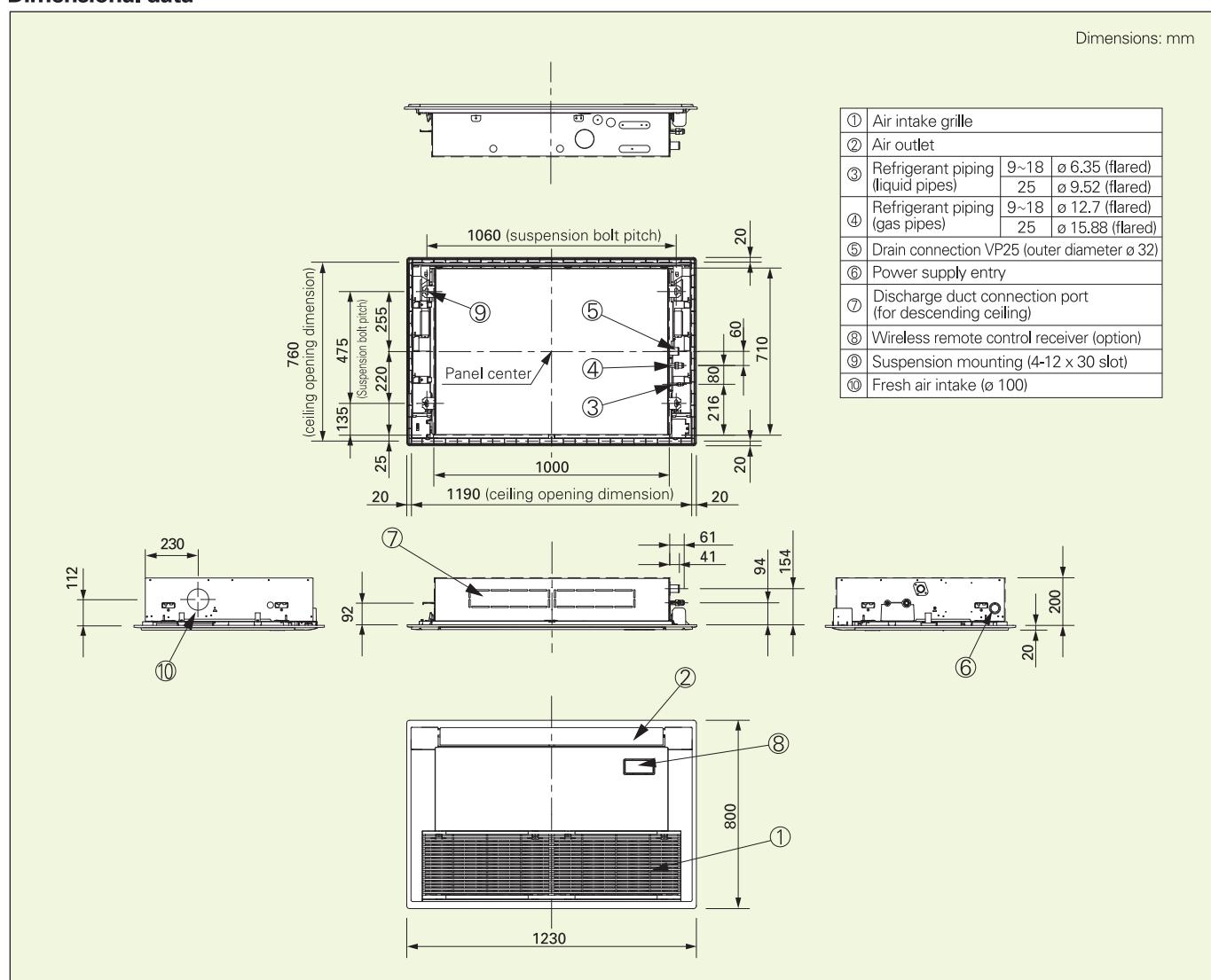
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel.

* The values in () for air flow rate and operating sound are for use of the accessory cable.

Data subject to change without notice.

Dimensional data



CONCEALED DUCT

U type



WIDE OPERATION DRY
-DP

■ Option

● Wired remote controller



RCS-TM80BG

● Wireless remote controller



RCS-BH80BG.WL

● Simplified remote controller



RCS-KR1AGB

■ Realized comfortable space by dispersed arrangement of discharge ports.



■ The static pressure outside the unit can be increased!

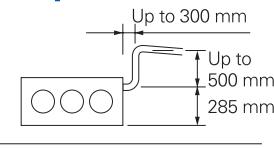
By using the booster cable, the static pressure outside the unit can be increased.

(Pa)

type	7·9·12	16·18	25	36	48·60
Standard	49	40	50	79	78
With booster cable use	69	62	92	122	113

■ Drain pump with increased power!

By adoption of a high-lift drain pump, the drain piping rise height could be increased to 785 mm from the lower surface of the body.



■ Easy maintenance by external installation of the electric equipment box!

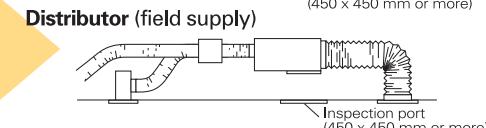
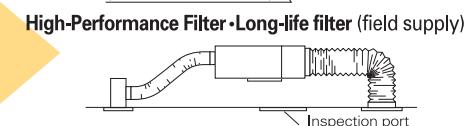
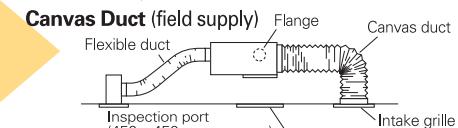


Body electric equipment box



System example

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



■ Unified body height of approx. 310 mm for all models

Even models with different capacities can be installed smoothly in the ceiling.

Indoor units specifications

Model name	(SPW-)	U075XH	U095XH	U125XH	U165XH	U185XH	U255XH	U365XH	U485XH	U605XH				
Power source		220/230/240V, 1 phase~50, 60Hz												
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.3	10.6	14.0	16.0				
	BTU/h	7,500	9,600	12,000	15,000	19,000	25,000	36,000	47,800	54,600				
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0	11.4	16.0	18.0				
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	39,000	54,600	61,400				
Power input	Cooling kW	0.094/0.100/0.106			0.096/0.102/0.109	0.180/0.195/0.210	0.312/0.327/0.342		0.308/0.325/0.341					
	Heating kW	0.082/0.088/0.094			0.084/0.090/0.097	0.168/0.183/0.198	0.300/0.315/0.330		0.296/0.313/0.329					
Running amperes	Cooling A	0.45/0.46/0.47			0.44/0.45/0.46	0.83/0.86/0.89	1.44/1.45/1.46		1.42/1.43/1.44					
	Heating A	0.40/0.41/0.42			0.39/0.40/0.41	0.78/0.81/0.84	1.39/1.40/1.41		1.36/1.37/1.38					
Fan motor	Type	Sirocco fan *1					Sirocco fan *2	Sirocco fan *3						
	Airflow rate (H/M/L)	m³/min	10/8.5/7		12/10.5/9		18/15/13	30/26/21	33/30/25					
	Output	kW	0.05					0.07	0.14					
	External static pressure	Pa	49(69)		40(62)		50(92)	79(122)	78(113)					
Power sound level (H/M/L)		dB(A)	40/37/33		41/39/36		45/41/38	49/44/42	51/48/44					
Pressure sound level (H/M/L)		dB(A)	(32)/29/26/22		(33)/30/28/25		(38)/34/30/27	(42)/38/33/31	(44)/40/37/33					
Dimensions	Height	mm	310					310						
	Width	mm	700					1000	1480					
	Depth	mm	630					630						
Piping connections	Liquid (Flare)	mm	6.35					9.52						
	Gas (Flare)	mm	12.7					15.88						
	Drain piping		VP-25					VP-25						
Net weight	kg	24	25		32		47							

Rated conditions

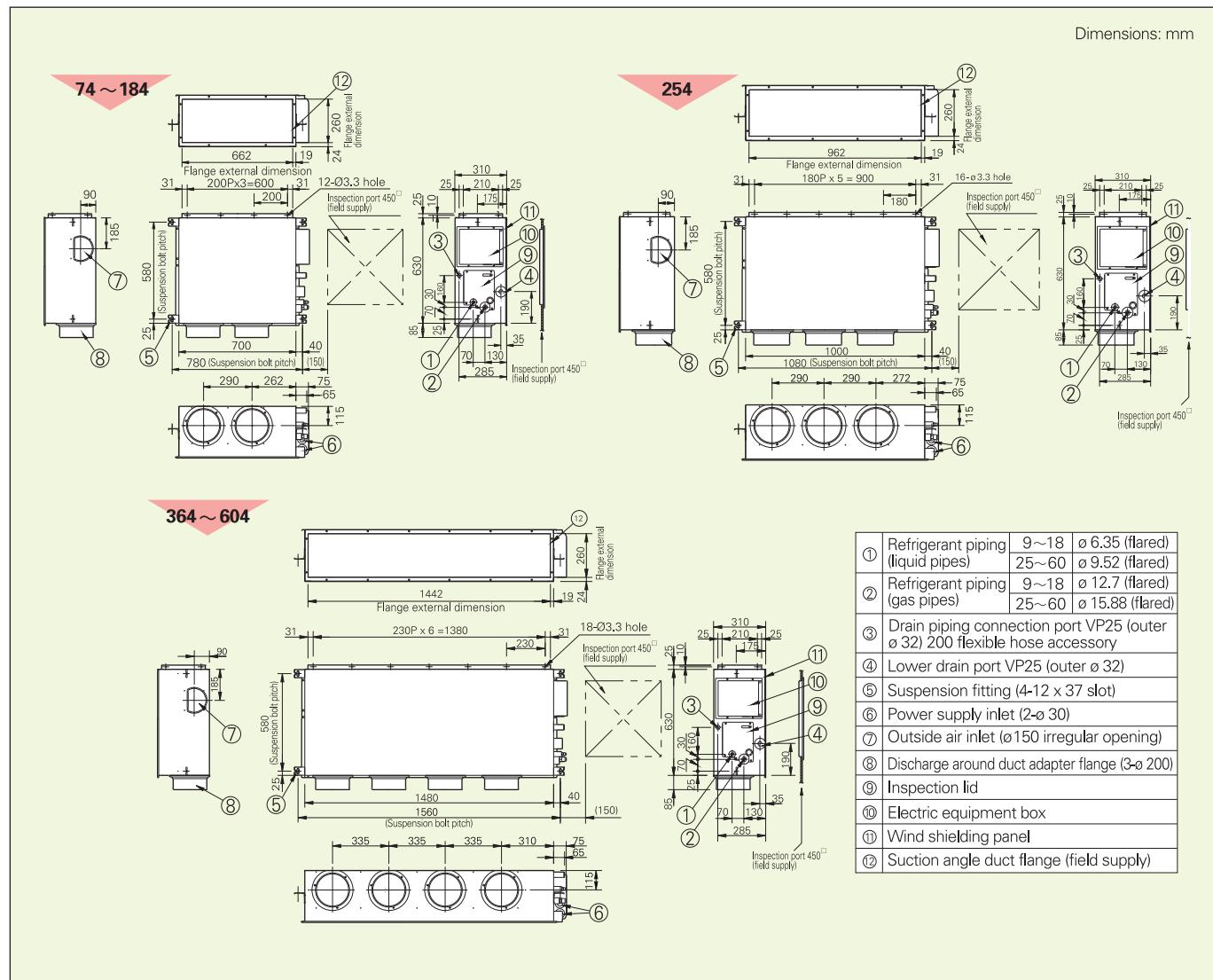
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.

Data subject to change without notice.

Dimensional data



CONCEALED-RECTANGLE DUCT TYPE

UR
type



WIDE
OPERATION !
DRY DP

■ Option

● Wired remote controller



RCS-TM80BG

● Wireless remote controller



RCS-BH80BG.WL

● Simplified remote controller



RCS-KR1AGB

■ The static pressure outside the unit can be increased!

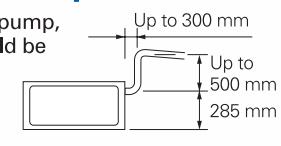
By using the booster cable, the static pressure outside the unit can be increased.

(Pa)

type	7·9·12	16·18	25·30	36	48·60
Standard	49	40	50	79	78
With booster cable use	69	62	92	122	113

■ Drain pump with increased power!

By adoption of a high-lift drain pump, the drain piping rise height could be increased to 785 mm from the lower surface of the body.



■ Easy maintenance by external installation of the electric equipment box!



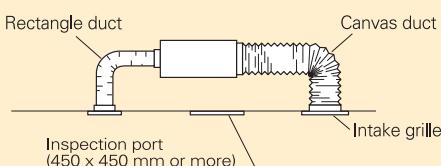
■ Anti-mould washable filters included

■ Unified body height of approx. 310 mm for all models

Even models with different capacities can be installed smoothly in the ceiling.

System example

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



Indoor units specifications

Model name	(SPW-)	U075SXHT	U095SXHT	U125SXHT	U165SXHT	U185SXHT	U255SXHT	U305SXHT	U365SXHT	U485SXHT	U605SXHT		
Power source		220/230/240V, 1 phase-50Hz											
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.3	9.0	10.6	14.0	16.0		
	BTU/h	7,500	9,600	12,000	15,000	19,000	25,000	30,000	36,000	47,800	54,600		
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0	10.0	11.4	16.0	18.0		
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	34,000	39,000	54,600	61,400		
Power input	Cooling	kW	0.094 / 0.100 / 0.106	0.109 / 0.102 / 0.096	0.096 / 0.102 / 0.109	0.180 / 0.195 / 0.210	0.187 / 0.203 / 0.219	0.312 / 0.327 / 0.342	0.308 / 0.325 / 0.341				
	Heating	kW	0.082 / 0.088 / 0.094	0.097 / 0.090 / 0.084	0.084 / 0.090 / 0.097	0.168 / 0.183 / 0.198	0.176 / 0.191 / 0.207	0.300 / 0.315 / 0.330	0.296 / 0.313 / 0.329				
Running amperes	Cooling	A	0.45 / 0.46 / 0.47	0.46 / 0.45 / 0.44	0.44 / 0.45 / 0.46	0.83 / 0.86 / 0.89	0.88 / 0.91 / 0.94	1.44 / 1.45 / 1.46	1.42 / 1.43 / 1.44				
	Heating	A	0.40 / 0.41 / 0.42	0.41 / 0.40 / 0.39	0.39 / 0.40 / 0.41	0.78 / 0.81 / 0.84	0.84 / 0.87 / 0.90	1.39 / 1.40 / 1.41	1.36 / 1.37 / 1.38				
Fan motor	Type		Sirocco fan *1				Sirocco fan *2		Sirocco fan *3				
	Airflow rate (H/M/L)	m³/min	10 / 8.5 / 7		12 / 10.5 / 9		18 / 15 / 13	20 / 17 / 14	30 / 26 / 21	33 / 30 / 25			
Output	kW		0.05				0.07		0.14				
	External static pressure	Pa	49(69)		40(62)		50(92)		79(122)	78(113)			
Power sound level (H/M/L)	dB(A)	40 / 37 / 33		41 / 39 / 36		45 / 41 / 38	45 / 41 / 38	49 / 44 / 42	51 / 48 / 44				
Pressure sound level (H/M/L)	dB(A)	(33) / 29 / 26 / 22		(33) / 30 / 28 / 25		(38) / 34 / 30 / 27	(38) / 34 / 30 / 27	(42) / 38 / 33 / 31	(44) / 40 / 37 / 33				
Dimensions	Height	mm	310				1000		1480				
	Width	mm	700				1000		1480				
	Depth	mm	630				630		630				
Piping connections	Liquid (Flare)	mm	6.35 (1/4)				9.52 (3/8)		15.88 (5/8)				
	Gas (Flare)	mm	12.7 (1/2)				12.7 (1/2)		12.7 (1/2)				
	Drain piping		VP-25				VP-25		VP-25				
Net weight	kg	24		25		32		47		47			

Rated conditions

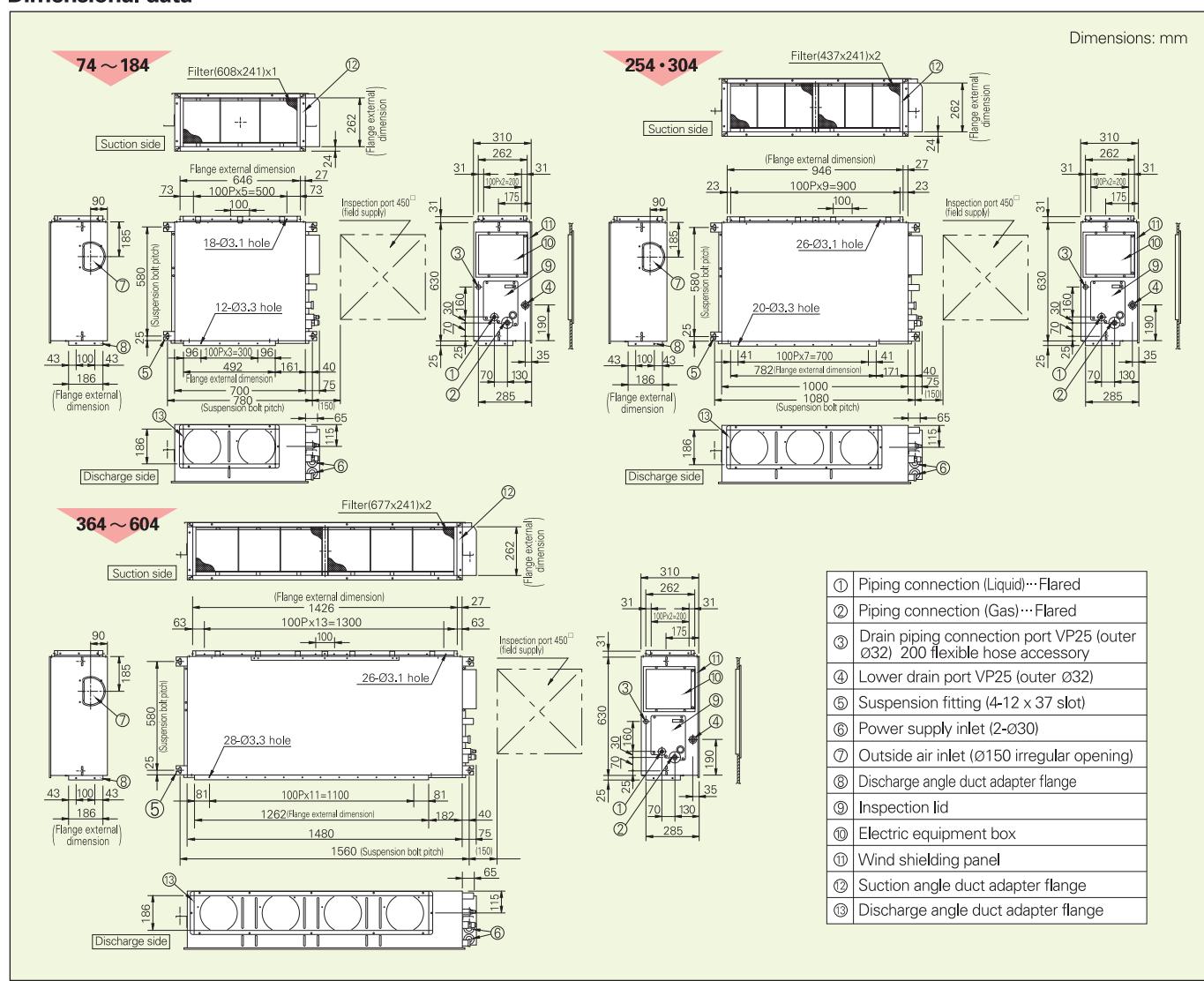
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.

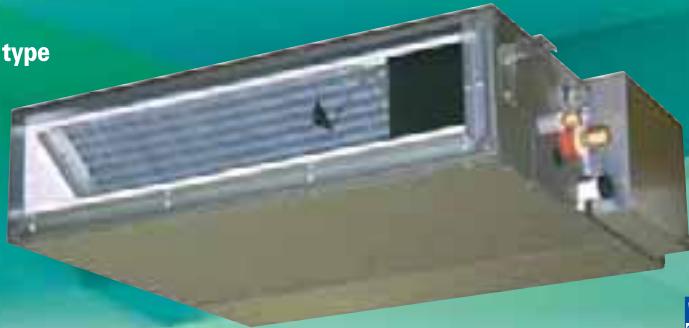
Data subject to change without notice.

Dimensional data



CONCEALED-DUCT

US type



WIDE OPERATION DRY
 DP

■ Option

● Timer remote controller

● Wireless remote controller

● Simplified remote controller



RCS-TM80BG

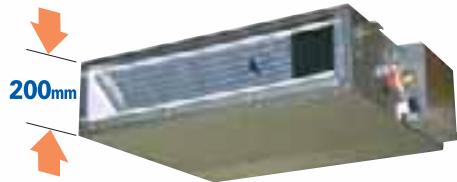


RCS-BH80BG.WL



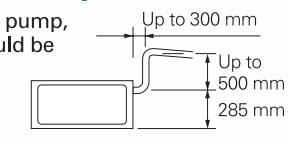
RCS-KR1AGB

■ Ultra-slim profile: 200 mm for all models



■ Drain pump with increased power!

By adoption of a high-lift drain pump, the drain piping rise height could be increased to 785 mm from the lower surface of the body.



■ Ideal for hotel application with very thin false-ceiling

■ Extremely silent: 25 dB-A at low speed (Class 7)

■ Anti-mould washable filters included

■ Easy maintenance and service by external PCB box

■ Three-speed centrifugal fan by wired or wireless remote controller



Indoor units specifications

Model name	(SPW-)	US075XH	US095XH	US125XH	US165XH	US185XH
Power source		220/230/240V, 1 phase-50, 60Hz				
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6
	BTU/h	7,500	9,600	12,000	15,000	19,000
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3
	BTU/h	8,500	11,000	14,000	17,000	21,000
Power input	Cooling kW	0.036 / 0.036 / 0.036	0.040 / 0.040 / 0.040	0.042 / 0.042 / 0.042	0.049 / 0.049 / 0.049	0.064 / 0.064 / 0.064
	Heating kW	0.026 / 0.026 / 0.026	0.030 / 0.030 / 0.030	0.032 / 0.032 / 0.032	0.039 / 0.039 / 0.039	0.054 / 0.054 / 0.054
Running amperes	Cooling A	0.26 / 0.26 / 0.26	0.30 / 0.30 / 0.30	0.31 / 0.31 / 0.31	0.37 / 0.37 / 0.37	0.48 / 0.48 / 0.48
	Heating A	0.23 / 0.23 / 0.23	0.27 / 0.27 / 0.27	0.28 / 0.28 / 0.28	0.34 / 0.34 / 0.34	0.45 / 0.45 / 0.45
Fan motor	Type	Sirocco fan				
	Airflow rate (H/M/L) m³/min	8 / 7 / 6	8.5 / 7.5 / 6.5	9 / 8 / 7	10.5 / 9.5 / 8	12.5 / 11.5 / 10
	Output kW	0.05				
	External static pressure Pa	10 - 30	15 - 30	15 - 40		
Power sound level (H/M/L) dB(A)		43 / 42 / 40	45 / 44 / 42	47 / 45 / 43	49 / 47 / 45	52 / 50 / 48
Pressure sound level (H/M/L) dB(A)		28 / 27 / 25	30 / 29 / 27	32 / 30 / 28	34 / 32 / 30	35 / 33 / 31
Dimensions	Height mm	200				
	Width mm	750				
	Depth mm	640				
Piping connections	Liquid (Flare) mm	6.35 (1/4)				
	Gas (Flare) mm	12.7 (1/2)				
	Drain piping	VP-20				
Net weight kg		19				

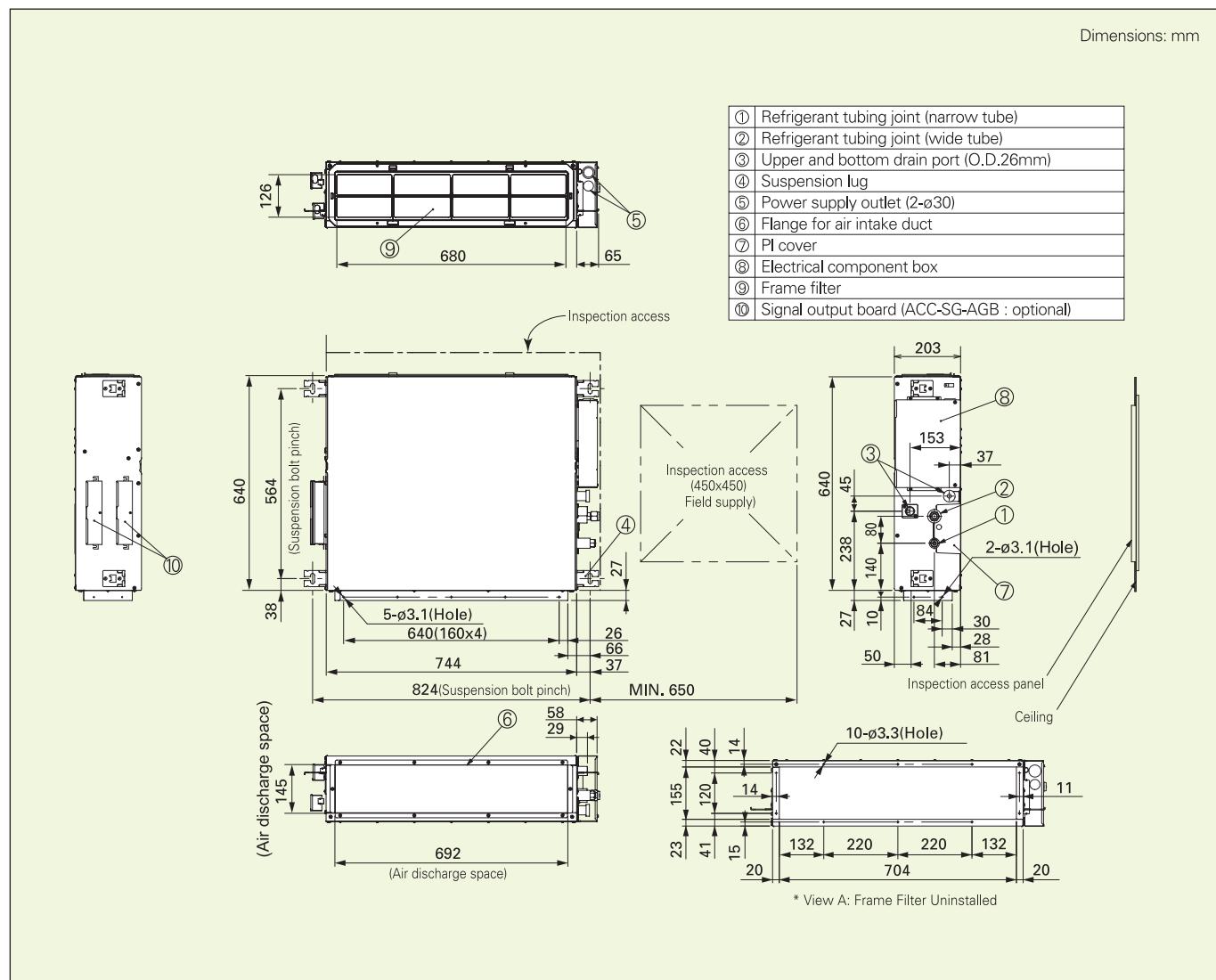
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



FLOOR/CEILING SLIM CONCEALED DUCT

FUR^{type}



WIDE
OPERATION ! ACOUSTIC DRY

■ Option

● Timer remote controller



● Wireless remote controller



● Simplified remote controller



RCS-TM80BG

RCS-BH80AG.WLB

RCS-KR1AGB

■ Ultra-slim profile: 190 mm for all models



■ Suitable for horizontal and vertical installation

■ Ideal for hotel application with very thin false-ceiling

■ Extremely silent: 26dB-A at low speed (Class 7, 9, 12)

■ Anti-mould washable filters included

■ Easy maintenance and service by air suction port

■ Three-speed centrifugal fan by wired or wireless remote controller



Indoor units specifications

Model name		(SPW-)	FUR74EXH56B	FUR94EXH56B	FUR124EXH56B	FUR164EXH56B	FUR184EXH56B	FUR224EXH56B		
Power source		220/230/240V, 1 phase-50 Hz								
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	6.4			
	BTU/h	7,500	9,600	12,000	15,000	19,000	22,000			
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	7.0			
	BTU/h	8,500	11,000	14,000	17,000	21,000	24,000			
Power input	Cooling kW	0.037/0.037/0.037			0.065/0.065/0.065		0.088/0.088/0.088			
	Heating kW	0.037/0.037/0.037			0.065/0.065/0.065		0.088/0.088/0.088			
Running amperes	Cooling A	0.17/0.17/0.17			0.29/0.29/0.29		0.41/0.41/0.41			
	Heating A	0.17/0.17/0.17			0.29/0.29/0.29		0.41/0.41/0.41			
Fan motor	Type	Sirocco fan								
	Airflow rate (H/M/L)	m³/min	7.8/6.3/5.6			10.3/9/7.5		11.3/10/8.7		
	Output	kW	0.04			0.07		0.09		
	External static pressure	Pa	7.5			10				
Power sound level (H/M/L)		dB(A)	48/41/37			56/52/44		60/56/51		
Pressure sound level (H/M/L)		dB(A)	37/30/26			45/41/33		49/45/40		
Dimensions	Height	mm	190							
	Width	mm	890							
	Depth	mm	614							
Piping connections	Liquid (Flare)	mm	6.35 (1/4)							
	Gas (Flare)	mm	12.7 (1/2)							
	Drain piping		VP-26							
Net weight		kg	25							

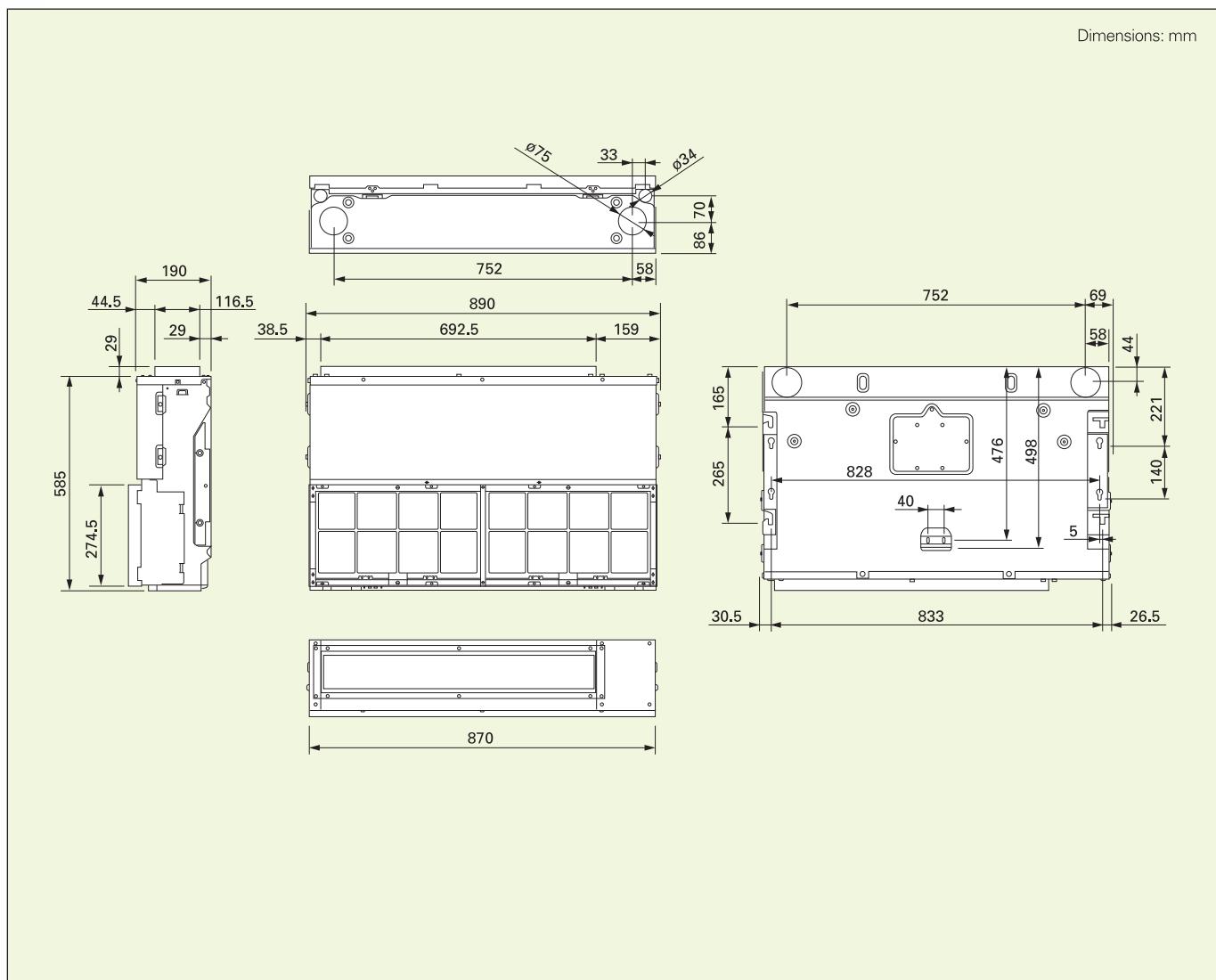
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.

Data subject to change without notice.

Dimensional data



CONCEALED DUCT

UMR^{type}



WIDE OPERATION AUTO DRY DP

■ Option

● Timer remote controller

● Wireless remote controller

● Simplified remote controller



RCS-TM80BG



RCS-BH80AG.WLB



RCS-KR1AGB

■ Integrated pump for condensate discharge

■ Fresh air intake

■ Reduced dimensions

■ Anti-mould and anti-bacteria washable filters

■ Three-speed centrifugal fan by remote control and feature to increase speed/pressure, using the booster cable



Indoor units specifications

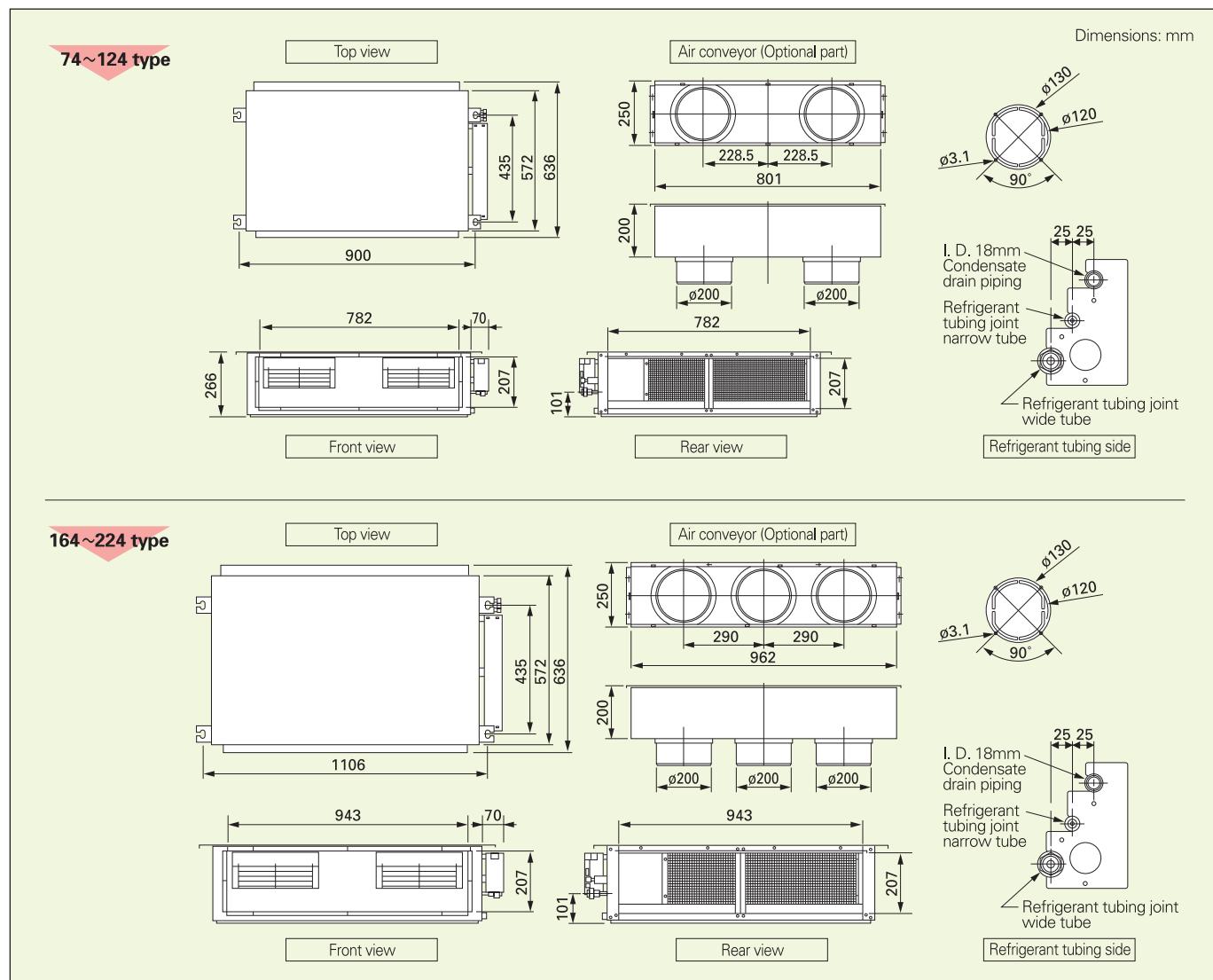
Model name (SPW-)		UMR74EXH56B	UMR94EXH56B	UMR124EXH56B	UMR164EXH56B	UMR184EXH56B	UMR224EXH56B	
Power source		220/230/240V, 1 phase~50 Hz						
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	6.4	
	BTU/h	7,500	9,600	12,000	15,000	19,000	22,000	
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	7.0	
	BTU/h	8,500	11,000	14,000	17,000	21,000	24,000	
Power input	Cooling kW	0.11/0.11/0.11			0.138/0.138/0.138		0.136/0.136/0.136	
	Heating kW	0.11/0.11/0.11			0.138/0.138/0.138		0.136/0.136/0.136	
Running amperes	Cooling A	0.45/0.45/0.45			0.60/0.60/0.60		0.57/0.57/0.57	
	Heating A	0.45/0.45/0.45			0.60/0.60/0.60		0.57/0.57/0.57	
Fan motor	Type	Sirocco fan						
	Airflow rate (H/M/L) m³/min	10/8.5/7.3			14.6/10/6.7		16.7/11.7/10	
	Output kW	0.11			0.14			
	External static pressure Pa	49						
Power sound level (H/M/L) dB(A)		54/52/49			54/47/42		57/49/46	
Pressure sound level (H/M/L) dB(A)		43/41/38			43/36/31		46/38/35	
Dimensions	Height mm	266						
	Width mm	852			1,058			
	Depth mm	572						
Piping connections	Liquid (Flare) mm	6.35 (1/4)						
	Gas (Flare) mm	12.7 (1/2)						
	Drain piping	VP-18						
Net weight kg		30			35			

Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.
Data subject to change without notice.

Dimensional data



CONCEALED-DUCT HIGH-STATIC PRESSURE

DR type



76, 96 type



25~48 type

■ Option

- Wired remote controller



RCS-TM80BG

- Wireless remote controller



RCS-BH80BG.WL

- Simplified remote controller



RCS-KR1AGB

- Rap valve kit

The types 76 and 96 require two rap valve kits for each unit.



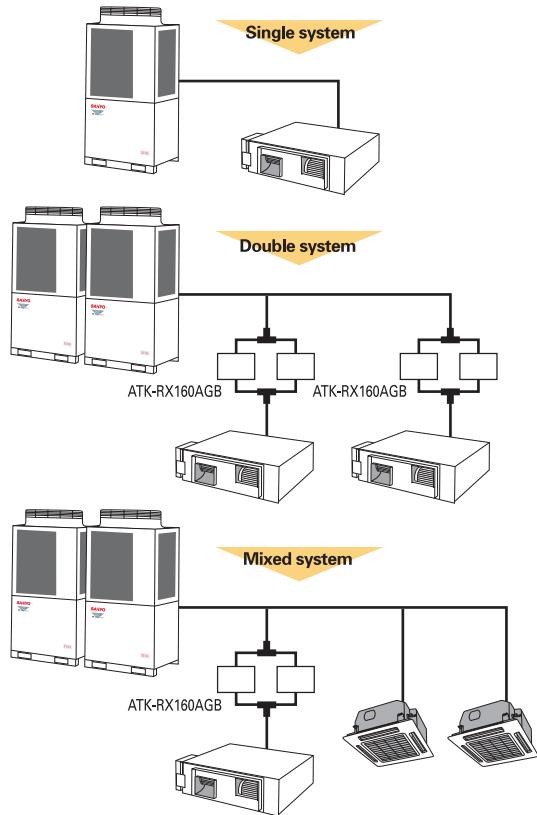
ATK-RX160AGB

■ High static pressure, low-noise design

Embedded ceiling type with high static pressure and excellent low operating sound features. As the discharge port also can be set freely, it is suitable for the office space.

■ Rap valve kit

Except for use as a single system, two rap valve kits are required for each unit for the type 76 and the type 96.



■ : Distribution joint kit (APR-RP160AG/APR-P160 for type 76)
(APR-RP680AG/APR-P680 for type 96)



● "Short duct" use of the type DR

When the type DR is used with a short duct (duct length of 4 to 5 m, external static pressure around 49 Pa (5 mm Aq)), the air volume and the operating sound maybe too large and an air volume adjustment damper or similar should be installed. (The external static pressure for this model is 147 Pa (15 mm Aq) or more.) In such a case, we recommend that you check use of the type UR.

Indoor units specifications

Model name (SPW-)		DR254GXH56B	DR364GXH56B	DR484GXH56B	DR764GXH56B	DR964GXH56B
Power source		220/230/240V, 1 phase-50, 60Hz				
Cooling capacity	kW	7.3	10.6	14.0	22.4	28.0
	BTU/h	25,000	36,000	47,800	76,400	95,500
Heating capacity	kW	8.0	11.4	16.0	25.0	31.5
	BTU/h	27,000	39,000	54,600	85,300	107,500
Power input	Cooling kW	0.480/0.505/0.530	0.520/0.545/0.570	0.600/0.660/0.710	0.870/0.900/0.930	1.270/1.330/1.390
	Heating kW	0.480/0.505/0.530	0.520/0.545/0.570	0.600/0.660/0.710	0.870/0.900/0.930	1.270/1.330/1.390
Running amperes	Cooling A	2.29/2.30/2.31	2.46/2.46/2.47	2.80/2.90/3.00	4.05/4.06/4.07	6.04/6.06/6.07
	Heating A	2.29/2.30/2.31	2.46/2.46/2.47	2.80/2.90/3.00	4.05/4.06/4.07	6.04/6.06/6.07
Fan motor	Type	Sirocco fan *1			Sirocco fan *2	
	Airflow rate (H/M/L) m³/min	23/22/21	30/28/25	36/35/33	56/53.1/49.6	72/70/66
	Output kW	0.2			0.2*2	0.4*2
	External static pressure Pa	186	176	167	176	216
Power sound level (H/M/L) dB(A)		55/54/53	56/55/53	58/57/55	59/58/57	62/61/60
Pressure sound level (H/M/L) dB(A)		44/43/42	45/44/42	47/46/44	48/47/46	51/50/49
Dimensions	Height mm	420		450	467	
	Width mm	1065			1428	
	Depth mm	620			1230	
Piping connections	Liquid (Flare) mm	9.52				
	Gas (Flare) mm	15.88			19.05	22.22
	Drain piping	VP-25				
Net weight kg		47	50	54	110	120

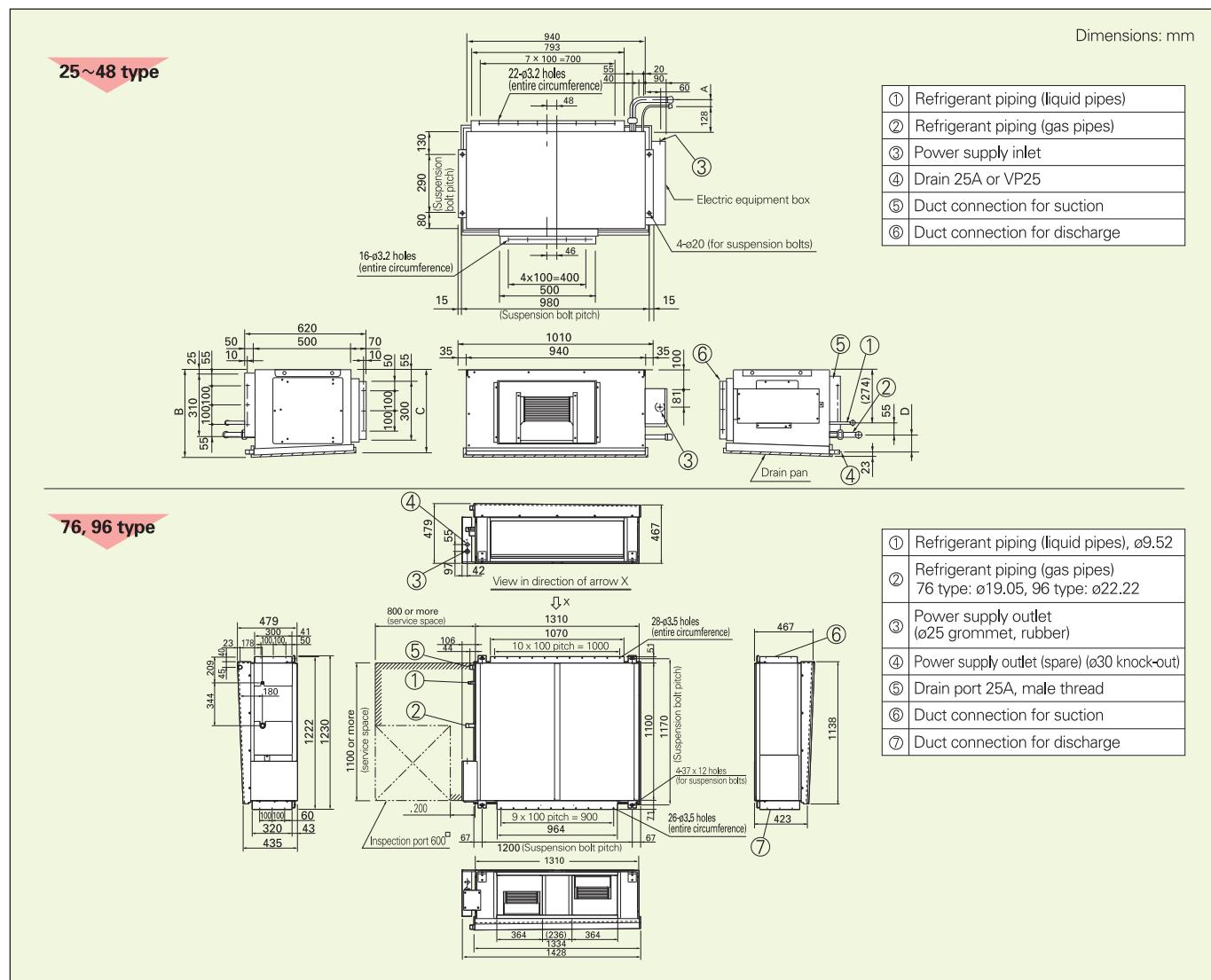
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



CEILING MOUNTED UNITS

T type



■ Option

•Wired remote controller



•Wireless remote controller



•Simplified remote controller



RCS-TM80BG

RCS-TRP80BG.WL

RCS-BH80BG.WL

DRY

WIDE OPERATION

AUTO

DRY

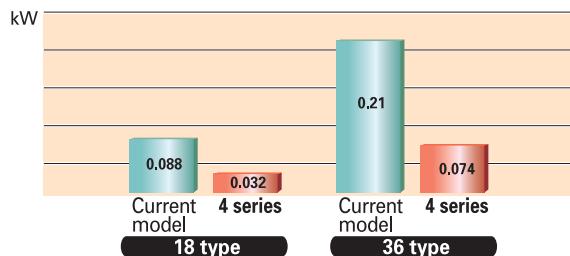
WIDE OPERATION

AUTO

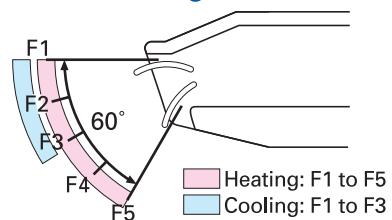
DRY

■ Newly developed DC fan motor with variable speed

Drastic reduction of the power input by adoption of a Sirocco fan with a new shape, a heat exchanger, etc.



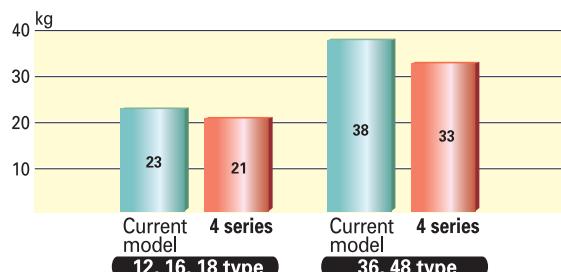
■ Realization of the most suitable air flow for heating and for cooling



Automatic setting of the blowing angle according to heating or cooling. In case of swing operation, the flap moves automatically and smoothly in the range from F1 to F5, independent of the mode.

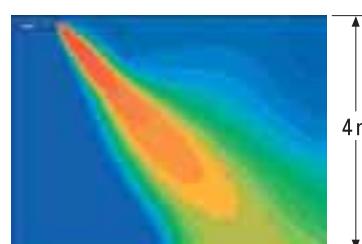
■ Weight reduction for all models!

All models have light weight in the top class of the industry, and the installation work also have been improved. Body height and depth have been unified for all models, and functional design permits clean and good-looking installation also for several units.

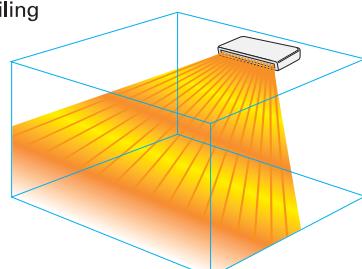


■ Further comfort improvement

The wide air discharge opening widens the air flow to the left and the right, so that a comfortable temperature is obtained in the entire room. The unpleasant feeling caused when the air flow directly hits the human body is prevented by the "Draft prevention position", which changes the swing width, so that the degree of comfort is increased.



Correspondence to ceiling heights up to 4 m



■ New design with lower operating sound

The operating sound has been reduced by max. 2 dB (A) by use of heat exchanger fins and Sirocco fans with a new shape and reduced wind path resistance.

Model	25 type	48 type
Operation noise (H/L)	38/33dB(A)	43/37dB(A)

Indoor units specifications

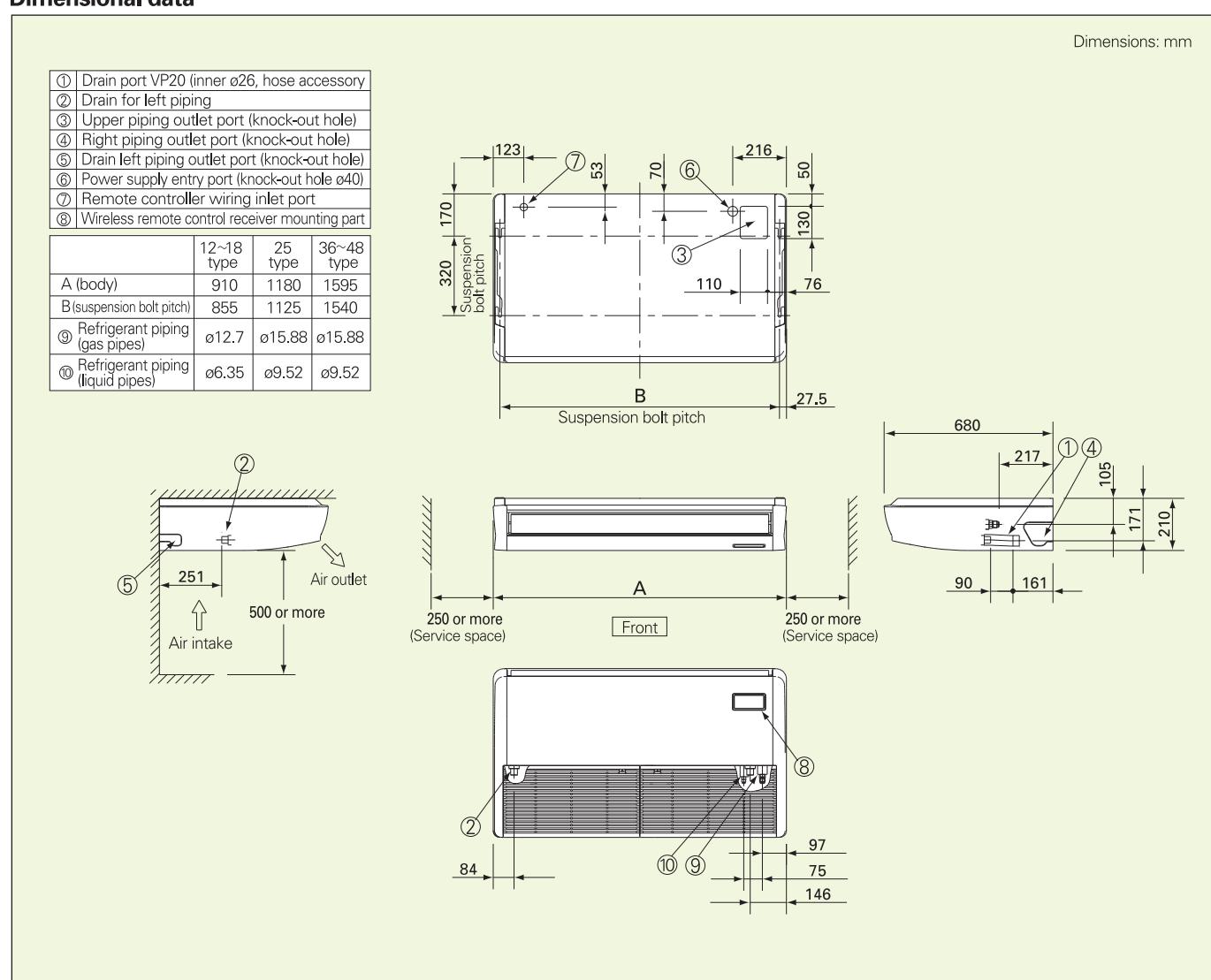
Model name	(SPW-)	T125XH	T165XH	T185XH	T255XH	T365XH	T485XH		
Power source		220/230/240V, 1 phase-50, 60 Hz							
Cooling capacity	kW	3.6	4.5	5.6	7.3	10.6	14.0		
	BTU/h	12,000	15,000	19,000	25,000	36,000	47,800		
Heating capacity	kW	4.2	5.0	6.3	8.0	11.4	16.0		
	BTU/h	14,000	17,000	21,000	27,000	39,000	54,600		
Power input	Cooling kW	0.028/0.029/0.029	0.031/0.032/0.032	0.043/0.043/0.044	0.073/0.074/0.075	0.085/0.086/0.088			
	Heating kW	0.028/0.028/0.029	0.031/0.031/0.032	0.042/0.042/0.043	0.072/0.073/0.074	0.084/0.085/0.086			
Running amperes	Cooling A	0.26/0.24/0.23	0.28/0.26/0.24	0.38/0.35/0.33	0.62/0.57/0.53	0.69/0.63/0.60			
	Heating A	0.26/0.24/0.23	0.28/0.26/0.25	0.38/0.35/0.34	0.62/0.57/0.55	0.69/0.63/0.62			
Fan motor	Type	Sirocco fan *2			Sirocco fan *3	Sirocco fan *4			
	Airflow rate (H/M/L) m³/min	12/10/9	13/11/9		18.5/15/14	27.5/23/20	30/26/22		
	Output kW	0.03			0.04	0.08			
Power sound level (H/M/L) dB(A)		46/43/41	47/44/41		49/47/44	52/49/46	54/51/48		
Pressure sound level (H/M/L) dB(A)		35/32/30	36/33/30		38/36/33	41/38/35	43/40/37		
Dimensions	Height mm	210			1180				
	Width mm	910			1595				
	Depth mm	680							
Piping connections	Liquid (Flare) mm	6.35			9.52				
	Gas (Flare) mm	12.7			15.88				
	Drain piping	VP-20							
Net weight kg		21		25	33				

Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



FLOOR/CEILING MOUNTED UNITS

FTR type



■ Option

● Timer remote controller



RCS-TM80BG

● Wireless remote controller



(Transmitter, common part)

RCS-BH80AG.WLB

● Simplified remote controller



RCS-KR1AGB

■ Three-speed centrifugal fan

■ Anti-mold and anti-bacteria washable filters

■ Ceiling Installation

■ Low operating sound

■ Horizontal flap swinging or set on a fixed position



Indoor units specifications

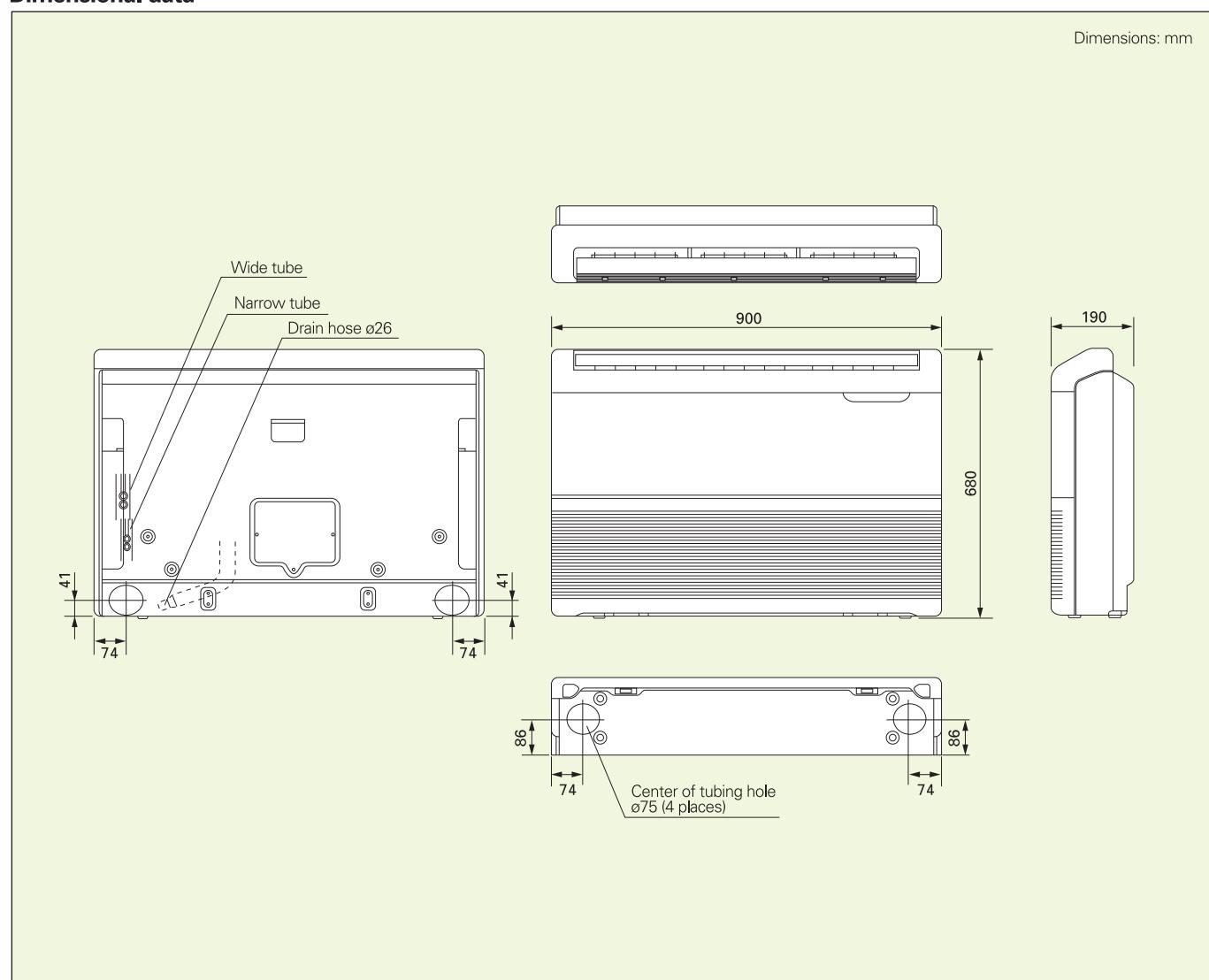
Model name	(SPW-)	FTR74EXH56B	FTR94EXH56B	FTR124EXH56B	FTR164EXH56B	FTR184EXH56B	FTR224EXH56B		
Power source		220/230/240V, 1 phase-50 Hz							
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	6.4		
	BTU/h	7,500	9,600	12,000	15,000	19,000	22,000		
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	7.0		
	BTU/h	8,500	11,000	14,000	17,000	21,000	24,000		
Power input	Cooling	kW	0.65/0.65/0.65		0.88/0.88/0.88				
	Heating	kW	0.65/0.65/0.65		0.88/0.88/0.88				
Running amperes	Cooling	A	0.29/0.29/0.29		0.41/0.41/0.41				
	Heating	A	0.29/0.29/0.29		0.41/0.41/0.41				
Fan motor	Type		Sirocco fan						
	Airflow rate (H/M/L)	m³/min	10.5/9/7.5		12/10.8/9.7		15/13.5/12		
	Output	kW	0.07		0.09				
Power sound level (H/M/L)		dB(A)	60/54/49		62/58/54		63/60/57		
Pressure sound level (H/M/L)		dB(A)	49/43/38		51/47/43		52/49/46		
Dimensions	Height	mm	680						
	Width	mm	900						
	Depth	mm	190						
Piping connections	Liquid (Flare)	mm	6.35 (1/4)						
	Gas (Flare)	mm	12.7 (1/2)						
	Drain piping		VP-26						
Net weight	kg		23.5						

Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

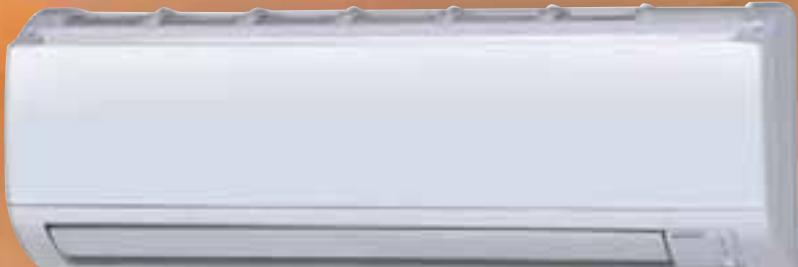
Data subject to change without notice.

Dimensional data



WALL-MOUNTED UNITS

K type



■ Option

- Timer remote controller



RCS-TM80BG

- Wireless remote controller



RCS-SH1BG

- Simplified remote controller



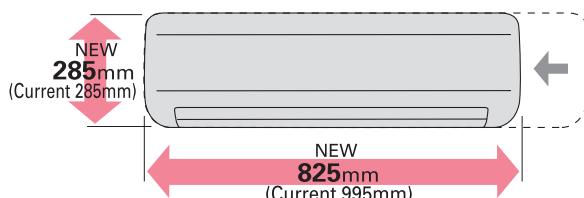
RCS-BH80BG.WL



RCS-KR1AGB

■ Lighter and smaller units make the installation easy!

The width has been removed by approx. 17%, and light weight has been realized.



■ Silent design

Low operation sound in the top class of the industry has been realized, making these models most suitable for hotels and hospitals.

■ Flat & Intimate design

The compact design and flat face make match the interior, and installation without a sense of incongruity is possible even in a small space.

■ Closed discharge port

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

■ Washable front panel

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



■ Piping outlet in three directions

Piping outlet is possible in the three directions of rear, right, and left, making the installation work easier.

■ Anti-mold filters are standard equipment.

IMPORTANT

When indoor unit are installed in a calm place where low noise is required such as hotel rooms, bed rooms or VIP rooms and so on, noise from Electronic Expansion Valve controlling refrigerant flow may be offensive to ear during cooling and heating operation.

In order to prevent the noise, please install optional External Electronic Expansion Valve Kit (ATK-SVRK56BG) at narrow tube 5 to 15m away from indoor unit.

Indoor units specifications

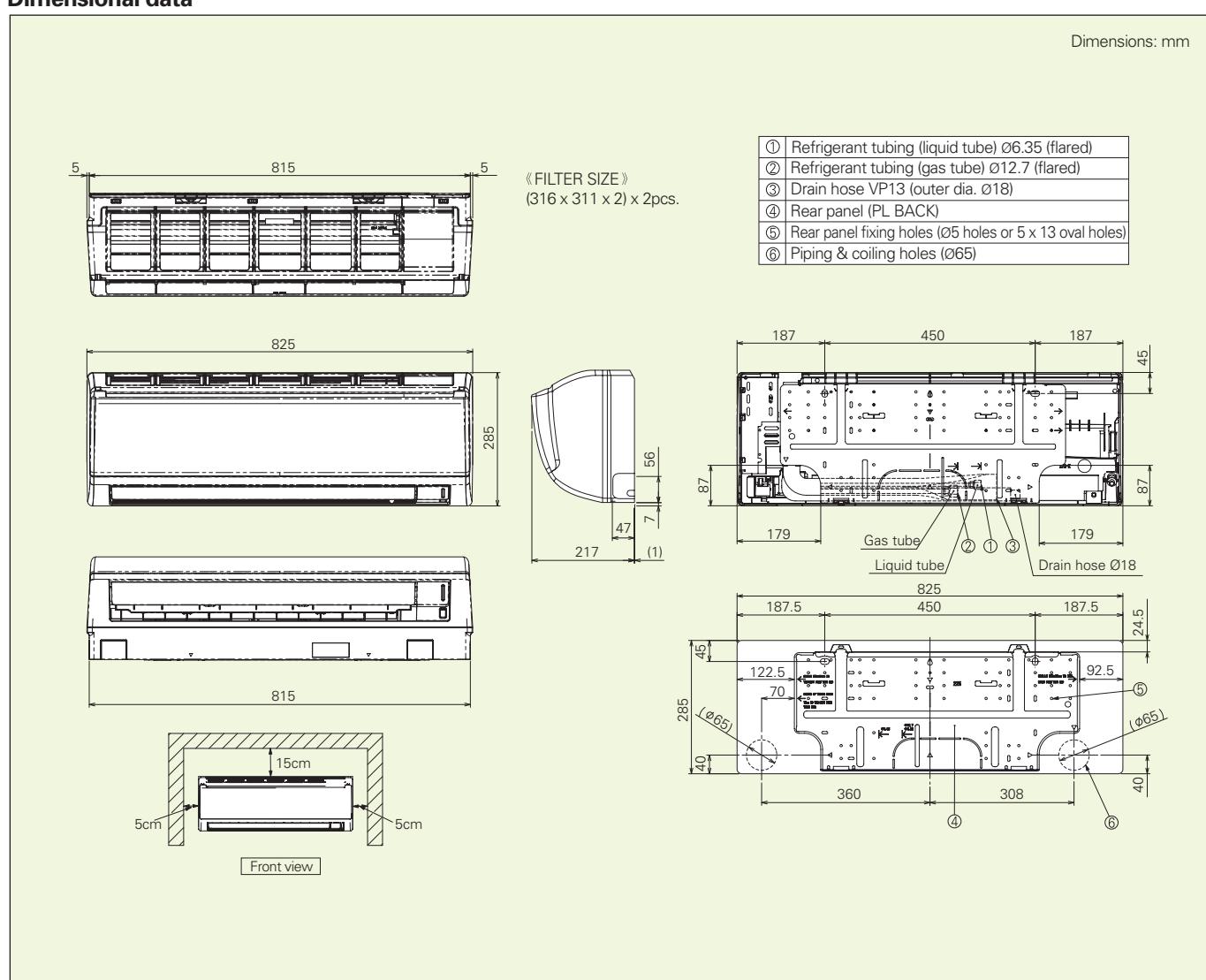
Model name	(SPW-)	K075XH	K095XH	K125XH
Power source		220/230/240V, 1 phase-50, 60 Hz		
Cooling capacity	kW	2.2	2.8	3.6
	BTU/h	7,500	9,600	12,000
Heating capacity	kW	2.5	3.2	4.2
	BTU/h	8,500	11,000	14,000
Power input	Cooling kW	0.018 / 0.019 / 0.019		0.021 / 0.022 / 0.023
	Heating kW	0.019 / 0.019 / 0.020		0.022 / 0.023 / 0.023
Running amperes	Cooling A	0.16 / 0.16 / 0.16		0.19 / 0.19 / 0.20
	Heating A	0.17 / 0.17 / 0.18		0.20 / 0.20 / 0.20
Fan motor	Type	Sirrocco fan		
	Airflow rate (H/M/L) m³/min	9 / 7.5 / 6		10 / 8.5 / 6.5
	Output kW	0.047		
Power sound level (H/M/L)	dB(A)	46 / 43 / 39		48 / 44 / 40
Pressure sound level (H/M/L)	dB(A)	35 / 32 / 28		37 / 33 / 29
Dimensions	Height mm	285		
	Width mm	825		
	Depth mm	217		
Piping connections	Liquid (Flare) mm (in)	6.35 (1/4)		
	Gas (Flare) mm (in)	12.7 (1/2)		
	Drain piping	VP-13		
Net weight	kg	10		

Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



WALL-MOUNTED UNITS

KR type



■ Option

- Wired remote controller



RCS-TM80BG

- Wireless remote controller



RCS-SH1BG

RCS-BH80BG.WL

- Simplified remote controller



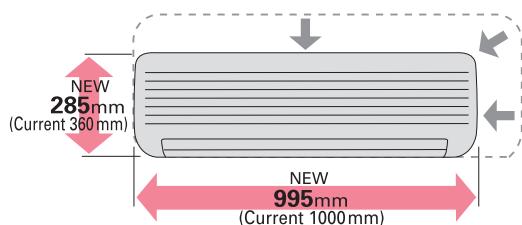
RCS-KR1AGB

■ Closed discharge port

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

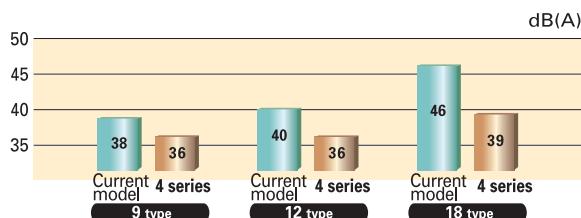
■ Lighter and smaller units make the installation easy!

The height has been removed by approx. 20%, and an extremely thin design has been realized.



■ Silent design

Low operation sound in the top class of the industry has been realized, making these models most suitable for hotels and hospitals.



■ Elegant color and round-shape design, adoption of horizontal stripes.

The compact design matches the interior, and installation without a sense of incongruity is possible even in a small space.

■ Washable front panel

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



■ Piping outlet in three directions

Piping outlet is possible in the three directions of rear, right, and left, making the installation work easier.

■ Anti-mold filters are standard equipment.

IMPORTANT

When indoor unit are installed in a calm place where low noise is required such as hotel rooms, bed rooms or VIP rooms and so on, noise from Electronic Expansion Valve controlling refrigerant flow may be offensive to ear during cooling and heating operation.

In order to prevent the noise, please install optional External Electronic Expansion Valve Kit (ATK-SVRK56BG, ATK-SVRK160BG (with 254 type)) at narrow tube 5 to 15m away from indoor unit.

Indoor units specifications

Model name	(SPW-)	KR74GXH56B	KR94GXH56B	KR124GXH56B	KR164GXH56B	KR184GXH56B	KR254GXH56B		
Power source		220/230/240V, 1 phase-50, 60 Hz							
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.3		
	BTU/h	7,500	9,600	12,000	15,000	19,000	25,000		
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0		
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000		
Power input	Cooling	kW	0.031/0.033/0.035				0.049/0.052/0.055		
	Heating	kW	0.031/0.033/0.035				0.049/0.052/0.055		
Running amperes	Cooling	A	0.15/0.15/0.15				0.23/0.23/0.24		
	Heating	A	0.15/0.15/0.15				0.23/0.23/0.24		
Fan motor	Type	Cross flow fan *1							
	Airflow rate (H/M/L)	m³/min	10/8/6		12/10/8		16/14/10		
	Output	kW	0.011		0.015		0.023		
Power sound level (H/M/L)		dB(A)	47/43/39				53/49/46		
Pressure sound level (H/M/L)		dB(A)	36/32/28				42/38/35		
Dimensions	Height	mm	285				330		
	Width	mm	995				1140		
	Depth	mm	203				228		
Piping connections	Liquid (Flare)	mm	6.35				9.52		
	Gas (Flare)	mm	12.7				15.88		
	Drain piping		VP-13						
Net weight		kg	14				21		

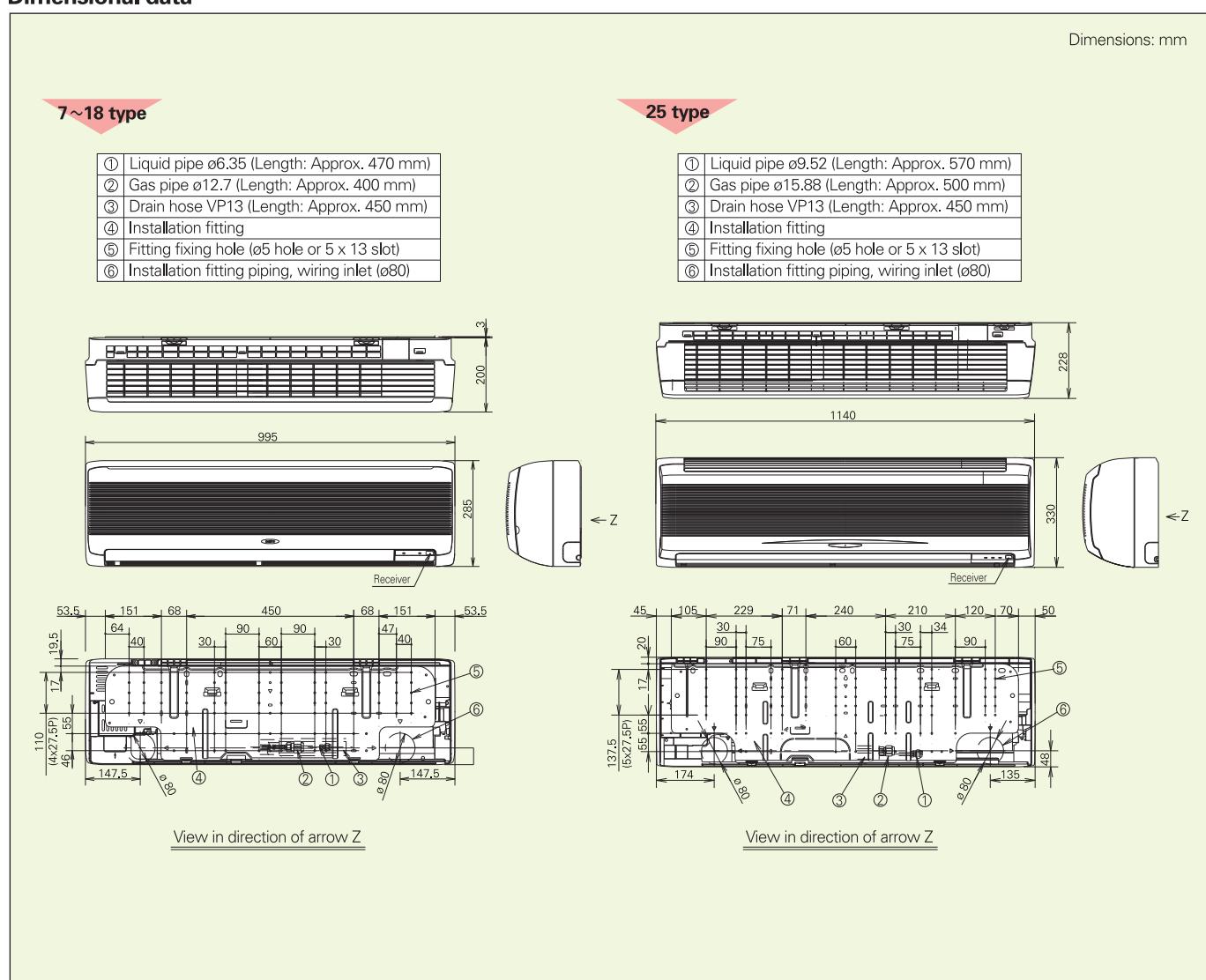
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



CONCEALED FLOOR STANDING UNITS

FLOOR STANDING UNITS

FMR type



WIDE OPERATION DRY

FR type



WIDE OPERATION DRY

■ Option

Wired remote controller



RCS-TM80BG

Wireless remote controller



RCS-BH80BG.WL

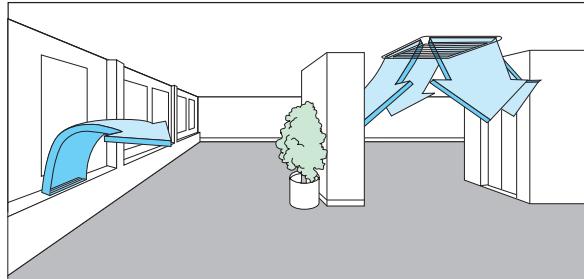
Simplified remote controller



RCS-KR1AGB

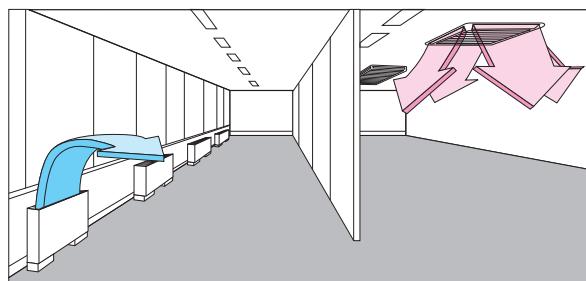
■ Realization of perimeter air condition with high interior quality

Compact and effective air conditioning is performed with embedding in perimeter counters. Most suitable for perimeter air handling in hotels etc.



■ Effective perimeter handling is possible with simple work execution.

As indoor units of a multi-system, the perimeter zone is handled effectively.



■ Large window space can be taken.

The simple external appearance and the streamlined layout make it possible to secure a large window space (unit height: 615mm). Most suitable for perimeter air conditioning in hotels etc.



A wired remote controller can be installed in the body.



Indoor units specifications

Concealed Floor Standing type

Model name	(SPW-)	FMR74GXH56B	FMR94GXH56B	FMR124GXH56B	FMR164GXH56B	FMR184GXH56B	FMR254GXH56B	
Power source		220/230/240V, 1 phase-50, 60Hz						
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.1	
	BTU/h	7,500	9,600	12,000	15,000	19,000	24,000	
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0	
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	
Power input	Cooling kW	0.051/0.056/0.061	0.079/0.085/0.091	0.116/0.126/0.136	0.150/0.160/0.170			
	Heating kW	0.036/0.040/0.045	0.064/0.070/0.076	0.079/0.091/0.101	0.110/0.120/0.130			
Running amperes	Cooling A	0.24/0.25/0.26	0.37/0.38/0.39	0.54/0.56/0.58	0.70/0.72/0.73			
	Heating A	0.17/0.18/0.19	0.30/0.31/0.32	0.37/0.41/0.43	0.52/0.54/0.56			
Fan motor	Type	Sirocco fan *1						
	Airflow rate (H/M/L) m³/min	7/6/5		9/7/6	12/9/8	15/13/11	17/14/12	
	Output kW	0.01		0.02	0.02	0.03	0.06	
Power sound level (H/M/L)	dB(A)	44/41/39		50/46/40	49/46/42	49/46/42	52/49/46	
Pressure sound level (H/M/L)	dB(A)	33/30/28		39/35/29	38/35/31	39/36/31	41/38/35	
Dimensions	HxWxD mm	616x904x229			616x1219x229			
Piping connections	Liquid (Flare) mm	6.35			9.52			
	Gas (Flare) mm	12.7			15.88			
	Drain piping	VP-20						
Net weight	kg	21		28				

Floor Standing type

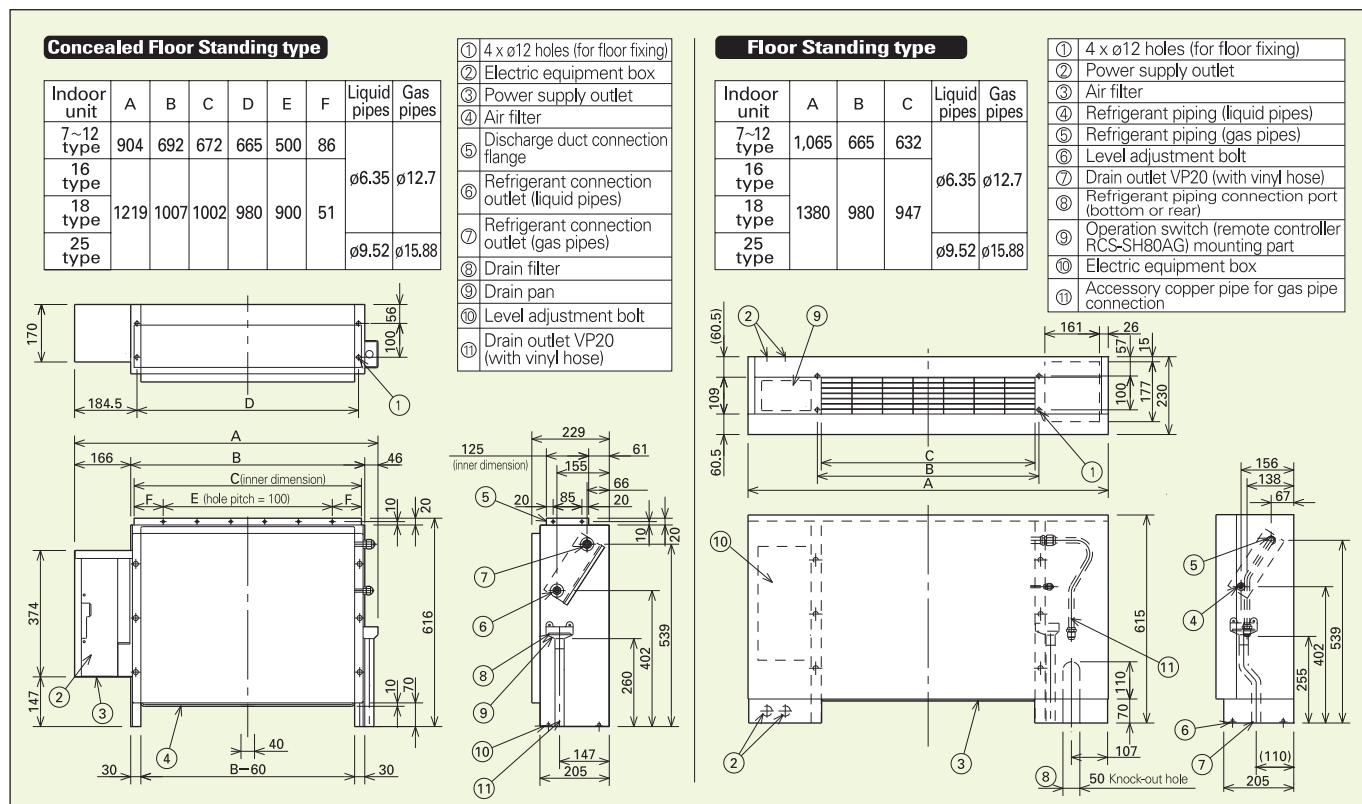
Model name	(SPW-)	FR74GXH56B	FR94GXH56B	FR124GXH56B	FR164GXH56B	FR184GXH56B	FR254GXH56B	
Power source		220/230/240V, 1 phase-50, 60Hz						
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.1	
	BTU/h	7,500	9,600	12,000	15,000	19,000	24,000	
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0	
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	
Power input	Cooling kW	0.051/0.056/0.061	0.079/0.085/0.091	0.116/0.126/0.136	0.150/0.160/0.170			
	Heating kW	0.036/0.040/0.045	0.064/0.070/0.076	0.079/0.091/0.101	0.110/0.120/0.130			
Running amperes	Cooling A	0.24/0.25/0.26	0.37/0.38/0.39	0.54/0.56/0.58	0.70/0.72/0.73			
	Heating A	0.17/0.18/0.19	0.30/0.31/0.32	0.37/0.41/0.43	0.52/0.54/0.56			
Fan motor	Type	Sirocco fan *1						
	Airflow rate (H/M/L) m³/min	7/6/5		9/7/6	12/9/8	15/13/11	17/14/12	
	Output kW	0.01		0.02	0.02	0.03	0.06	
Power sound level (H/M/L)	dB(A)	44/41/39		50/46/40	49/46/42	50/47/42	52/49/46	
Pressure sound level (H/M/L)	dB(A)	33/30/28		39/35/29	38/35/31	39/36/31	41/38/35	
Dimensions	HxWxD mm	615x1065x230			615x1380x230			
Piping connections	Liquid (Flare) mm	6.35			9.52			
	Gas (Flare) mm	12.7			15.88			
	Drain piping	VP-20						
Net weight	kg	29		39				

Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



TOTAL HEAT EXCHANGER WITH DX COIL

GU

type



■ Option

- Timer remote controller



RCS-TM80BG

- Wireless remote controller



RCS-BH80BG.WL

- Simplified remote controller

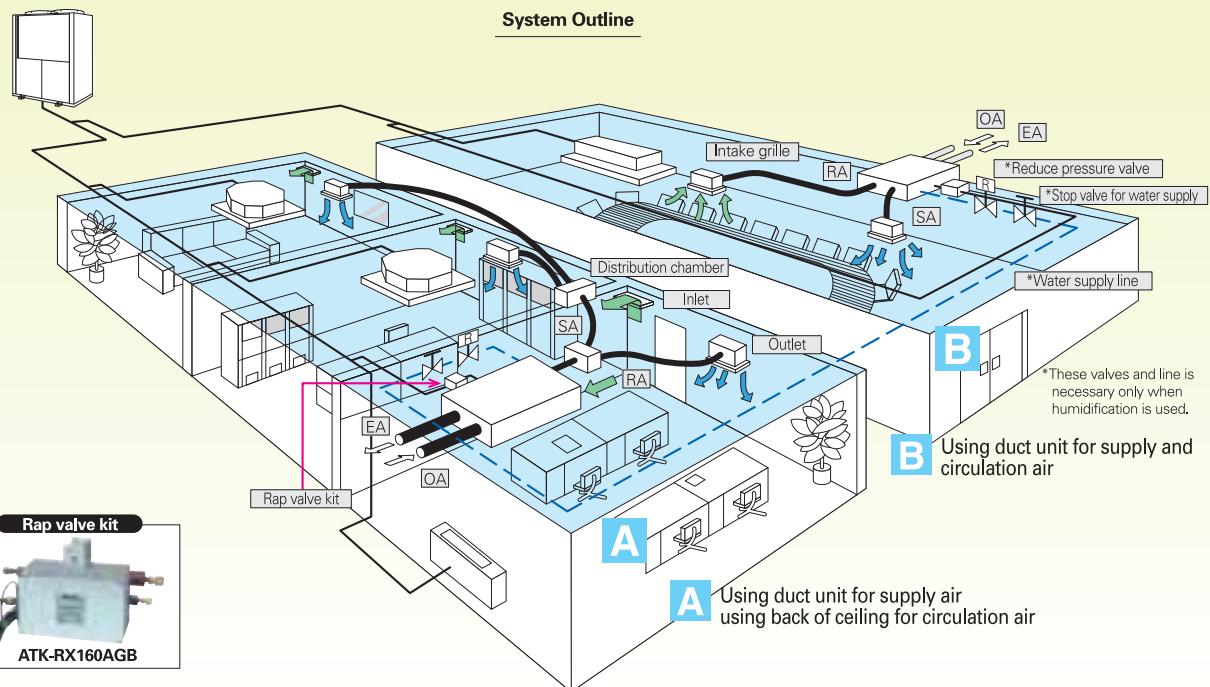


RCS-KR1AGB

- A powerful fresh air incoming to match the right temperature and humidity indoor condition in medium-sized commercial space
- Integration of heat recovery ventilation and DX coil technology for optimum air temperature control
- High efficiency on both temperature and humidity condition
- Compact and quiet design

- High static pressure available
- Standard spigots ensure simple connection to ductwork
- Easy-to-clean filter prevent mould or bacteria from occurring
- Easy maintenance and service by out installation of the electric box

Rap valve kit "ATK-RX160AGB" is required for each unit.



Indoor units specifications

Model name (SPW-)		GU055XH	GU075XH	GU105XH
Air circulation (H) m ³ /h		500	750	1,000
Power source		220/230/240V, 1 phase-50Hz		
Fresh Air Load	Cooling kW	5.3 (1.7)*1	8.2 (2.6)*1	10.7 (3.4)*1
Treatment Capacity	Heating kW	6.5 (2.3)*1	9.8 (3.5)*1	12.6 (4.6)*1
Enthalpy Exchange Efficiency	Cooling %		59	
Efficiency	Heating %		67	
Temp. Exchange Efficiency %		75		
Equivalent cooling capacity kW		3.6	5.6	7.3
BTU/h		12,000	19,000	25,000
Power input	Cooling kW	0.532/0.532/0.532	0.737/0.737/0.737	0.798/0.798/0.798
	Heating kW	0.532/0.532/0.532	0.737/0.737/0.737	0.798/0.798/0.798
Running amperes	Cooling A	2.5/2.4/2.3	3.4/3.2/3.1	3.7/3.5/3.4
	Heating A	2.5/2.4/2.3	3.4/3.2/3.1	3.7/3.5/3.4
Type	Sirocco fan			
Fan motor	External static pressure-Return air Pa	183 (170)	221 (188)	135 (88)
	External static pressure-Supply air Pa	205 (182)	264 (218)	176 (137)
Output	kW	0.28 (4P)×2	0.35 (4P)×2	
Power sound level (C/H) dB(A)	57 (Cooling), 58 (Heating)		58 (Cooling), 59 (Heating)	59 (Cooling), 60 (Heating)
Pressure sound level (C/H) dB(A)	46 (Cooling), 47 (Heating)		47 (Cooling), 48 (Heating)	48 (Cooling), 49 (Heating)
Dimensions	Height mm	425	450	
	Width mm	1785	1903	
	Depth mm	1000	1120	1220
Piping connections	Liquid (Flare) mm	6.35 (1/4)		
	Gas (Flare) mm	12.7 (1/2)		
	Drain piping	VP-25		
Connection Duct Diameter	mm	250	300	
Net weight	kg	134	153	168

Rated conditions

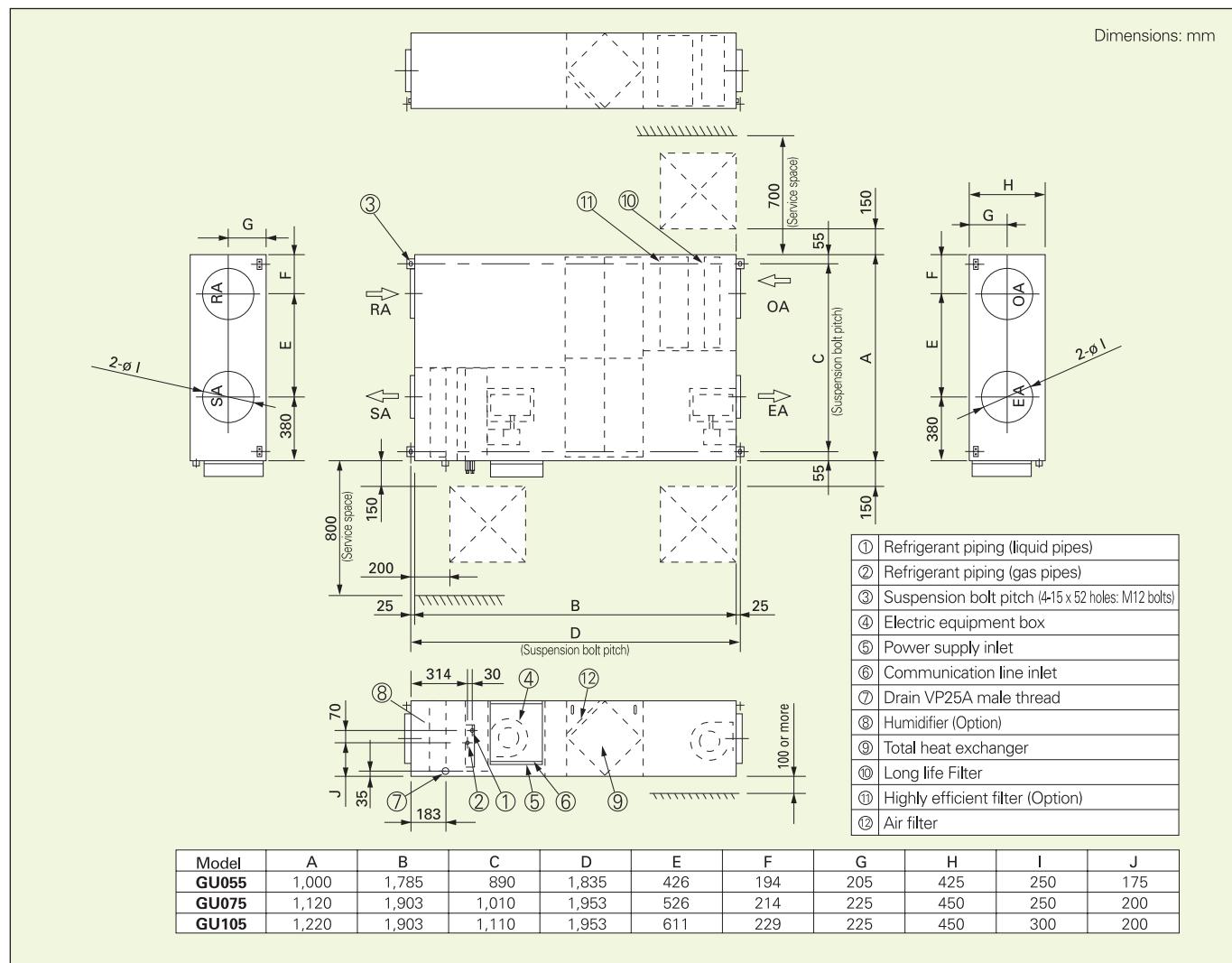
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
 Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.

*1: Heat recovery capacity by heat exchanger.

Data subject to change without notice.

Dimensional data



WATER TERMINAL UNIT

- Wide model range for 2-pipe and 4-pipe design system (X type size 031 and 051)
- K and FT also available with infrared remote controller
- Suitable for any commercial buildings and even for hotels and residential applications
- Silent operation ensures maximum comfort
- 3-way valve kit features precise temperature control in the room
- Cleanable air filter standard included

FW-X031EH5 • FW-X051EH5 • FW-X061EH5 • FW-X081EH5 • FW-X101EH5



Performance	FW-X031EH5	FW-X051EH5	FW-X061EH5	FW-X081EH5	FW-X101EH5
Main power supply V/Ph/Hz	230/1+N/50	230/1+N/50	230/1+N/50	230/1+N/50	230/1+N/50
Total cooling capacity Max/Med/Min* kW	2.60/2.35/2.15	4.70/4.10/3.60	6.00/5.00/4.20	7.60/6.00/5.00	9.92/8.09/6.23
Sensible cooling capacity Max/Med/Min* kW	2.31/2.09/1.91	3.72/3.21/2.80	4.70/3.80/3.20	6.00/4.70/3.80	7.90/6.22/4.62
Heating capacity Max/Med/Min* kW	3.49/3.11/2.83	5.70/4.85/4.35	7.70/6.40/5.40	9.00/7.70/6.40	13.00/10.60/8.16
Air flow Max/Med/Min* m³/h	520/460/400	750/630/530	1300/1060/850	1470/1300/1060	2300/1700/1200
Absorbed power Max/Med/Min* W	60/50/40	90/70/60	120/90/80	150/120/90	180/130/110
Water flow Max/Med/Min* l/h	430/395/360	790/690/600	1030/860/720	1300/1030/860	1700/1400/1070
Sound power level (Lw) Max/Med/Min* dB-A	46/44/41	56/51/48	51/44/40	55/51/44	57/49/43
Sound pressure level (Lp) Max/Med/Min* dB-A	37/35/32	47/42/39	42/35/31	46/42/35	48/40/34
Water connections inch	1/2" female			3/4" female	
Dimensions & Weights					
Dimensions H/W/D body mm	296x575x575	296x575x575	310x760x760	340x760x1050	340x760x1050
grille panel mm	41x730x730	41x730x730	30x860x860	30x860x1150	30x860x1150
Weight (with grille panel) Kg	21	23	28	32	36

FW-K011EH5 • FW-K021EH5 • FW-K031EH5 • FW-K041EH5



Performance	FW-K011EH5	FW-K021EH5	FW-K031EH5	FW-K041EH5
Main power supply V/Ph/Hz	230/1+N/50	230/1+N/50	230/1+N/50	230/1+N/50
Total cooling capacity Max/Med/Min* kW	1.24/0.80	1.67/0.96	2.90/1.57	3.50/2.35
Sensible cooling capacity Max/Med/Min* kW	0.94/0.58	1.30/0.74	2.20/1.20	2.70/1.80
Heating capacity Max/Med/Min* kW	1.72/1.11	2.38/1.49	3.90/2.45	5.40/3.60
Air flow Max/Med/Min* m³/h	220/150	270/180	585/360	720/470
Absorbed power Max/Med/Min* W	24/19	20/16	75/57	86/57
Water flow Max/Med/Min* l/h	215/135	290/165	500/274	615/415
Sound power level (Lw) Max/Med/Min* dB-A	44/37	45/35	50/46	55/48
Sound pressure level (Lp) Max/Med/Min* dB-A	35/28	36/26	41/37	46/39
Water connections inch	1/2" female			
Dimensions & Weights				
Dimensions H/W/D mm	270x805x177	270x805x177	285x995x206	285x995x206
Weight Kg	8.0	8.0	12	12

FW-FT021EH5 • FW-FT031EH5 • FW-FT041EH5



Performance	FW-FT021EH5	FW-FT031EH5	FW-FT041EH5
Main power supply V/Ph/Hz	230/1+N/50	230/1+N/50	230/1+N/50
Total cooling capacity Max/Med/Min* kW	2.10/1.20/0.90	3.19/2.10/0.90	3.90/3.10/1.65
Sensible cooling capacity Max/Med/Min* kW	1.50/1.00/0.70	2.47/1.50/0.70	3.00/2.50/1.25
Heating capacity Max/Med/Min* kW	3.10/2.00/1.60	4.07/3.00/1.60	5.00/4.40/2.10
Air flow Max/Med/Min* m³/h	430/300/210	520/430/210	675/570/327
Absorbed power Max/Med/Min* W	40/30/26	46/37/26	70/53/35
Water flow Max/Med/Min* l/h	360/206/160	550/360/160	670/530/285
Sound power level (Lw) Max/Med/Min* dB-A	48/43/35	50/45/35	54/51/40
Sound pressure level (Lp) Max/Med/Min* dB-A	40/35/27	42/37/27	46/43/32
Water connections inch	1/2" female		
Dimensions & Weights			
Dimensions H/W/D mm		680x900x190	
Weight Kg		23.5	

(*) Fan Speed

NOMINAL CONDITIONS

	Cooling	Heating	Sound pressure level
• Entering Air Temperature	27°C (db) 19°C (wb)	20°C	At 2m distance in closed environment
• Entering Water Temperature	7°C	50°C (at same water flow as for cooling)	100m³ volume with 0.5 sec reverberation time
• Leaving Water Temperature	12°C	60° maximum water entering temperature	

FAN-COIL UNIT

- Very wide and complete line-up: centrifugal or cross flow fan, 2-pipe or 4-pipe design
- Decorative cabinet can easily match with any kind of rooms
- Cleanable air filter included
- Easy to install and very simple maintenance
- Electronic controllers available for unit mounting and remote installation ensure precise control of the room temperature
- Large choice of accessories, either separately supplied or factory mounted

type VM



type HM



type VH



S-VMT/HMT/VHT 151-251-351

CROSS FLOW

Performance		151-4	251-4	351-4
Main power supply	V/Ph/Hz			
Total cooling capacity	Max/Med/Min* kW	1.40/1.20/1.04	2.40/2.08/1.70	3.40/2.80/2.30
Sensible cooling capacity	Max/Med/Min* kW	1.17/0.92/0.78	2.02/1.62/1.31	2.87/2.30/1.89
Heating capacity (standard coil)	Max/Med/Min* kW	2.08/1.66/1.46	3.10/2.70/2.30	4.30/3.60/2.90
Heating capacity (add. 1 row coil)	Max/Med/Min* kW	1.65/1.35/1.20	2.60/2.25/1.95	3.50/3.00/2.45
Air flow	Max/Med/Min* m ³ /h	300/240/190	450/360/290	600/480/380
Absorbed power	Max/Med/Min* W	40/30/27	50/45/37	65/50/42
Water flow cooling	Max/Med/Min* l/h	240/210/180	240/210/180	585/485/400
Water pressure drop heating	Max/Med/Min* kPa	4.0/3.2/2.4	14.7/11.8/8.5	13.2/10.0/7.0
Water flow heating	Max/Med/Min* l/h	145/120/105	225/195/170	300/260/210
Water pressure drop heating	Max/Med/Min* kPa	2.5/1.9/1.5	8.9/6.9/5.4	2.9/2.3/1.7
Sound power level (Lw)	Max/Med/Min* dB-A	48/40/34	47/42/36	48/43/39
Sound pressure level (Lp)	Max/Med/Min* dB-A	39/31/25	38/33/27	39/34/30
Dimensions & Weights				
Dimensions H/W/D	S-VMT	mm	530x775x225	530x990x225
Dimensions H/W/D	S-HMT	mm	225x775x530	225x990x530
Dimensions H/W/D	S-VHT	mm	530x567x218	530x782x218
Weight	S-VMT	kg	18	26
Weight	S-HMT	kg	18	26
Weight	S-VHT	kg	17	25

S-VMC/HMC/VHC 151-251-351-401-501-601-701

CENTRIFUGAL

Performance		151-4	251-4	351-4	401-4	501-4	601-4	701-4
Main power supply	V/Ph/Hz							
Total cooling capacity	Max/Med/Min* kW	1.50/1.30/1.10	2.50/2.15/1.80	3.50/2.90/2.47	4.00/3.44/2.90	4.80/4.15/3.60	5.95/5.08/4.30	6.60/5.50/4.60
Sensible cooling capacity	Max/Med/Min* kW	1.25/1.00/0.83	2.10/1.68/1.39	2.95/2.35/1.95	3.35/2.68/2.21	4.05/3.24/2.67	5.00/4.00/3.30	5.50/4.40/3.64
Heating capacity (standard coil)	Max/Med/Min* kW	2.06/1.70/1.40	3.30/2.70/2.30	4.45/3.70/3.00	5.20/4.35/3.65	6.60/5.50/4.70	8.00/6.70/5.50	8.80/7.30/6.00
Heating capacity (add. 1 row coil)	Max/Med/Min* kW	1.75/1.35/1.25	2.70/2.35/2.05	3.60/3.10/2.65	3.69/3.31/2.65	5.30/4.50/3.90	5.50/5.00/4.20	5.50/5.00/4.20
Air flow	Max/Med/Min* m ³ /h	300/240/190	450/360/290	600/480/380	750/600/480	1000/800/650	1200/950/750	1200/950/750
Absorbed power	Max/Med/Min* W	50/37/25	60/50/45	87/80/60	95/80/65	130/85/65	180/145/120	180/145/120
Water flow cooling	Max/Med/Min* l/h	260/225/190	430/370/310	600/500/425	690/590/500	825/715/620	1020/875/740	1135/950/795
Water pressure drop heating	Max/Med/Min* kPa	5.7/4.3/3.2	14.1/10.6/7.9	12.3/9.2/7.0	17.9/13.5/10.0	27.8/20.5/16.8	21.1/16.0/12.0	4.5/3.3/2.4
Water flow heating	Max/Med/Min* l/h	150/120/110	235/205/180	310/270/230	315/285/250	460/390/340	475/435/365	475/435/365
Water pressure drop heating	Max/Med/Min* kPa	3.7/2.8/2.2	8.6/6.7/5.3	2.8/2.3/1.7	3.7/2.9/2.3	7.3/5.7/4.3	6.9/5.8/4.3	6.9/5.8/4.3
Sound power level (Lw)	Max/Med/Min* dB-A	51/45/40	54/50/42	51/42/37	54/48/45	59/54/48	60/55/48	60/55/48
Sound pressure level (Lp)	Max/Med/Min* dB-A	42/36/31	45/41/33	42/33/28	45/39/36	50/45/39	51/46/39	51/46/39
Dimensions & Weights								
Dimensions H/W/D	S-VMC	mm	530x775x225	530x990x225	530x1205x225	530x1420x225	530x1420x255	530x1420x255
Dimensions H/W/D	S-HMC	mm	225x775x530	225x990x530	225x1205x530	225x1420x530	255x1420x530	255x1420x530
Dimensions H/W/D	S-VHC	mm	530x510x218	530x725x218	530x940x218	530x940x218	530x1155x248	530x1155x248
Weight	kg	17	24	27	28	33	43	48
Weight	kg	17	24	27	28	33	43	48
Weight	kg	16	23	26	27	31	40	45

(*) Fan Speed

NOMINAL CONDITIONS

	Cooling	Heating	additional	1-row coil
• Entering Air Temperature	27°C (db)	19°C (wb)	20°C	
• Entering Water Temperature	7°C		70°C	
• Leaving Water Temperature	12°C		60°	

Sound pressure level

At 2m distance in closed environment
100m³ volume with 0.5 sec reverberation time

Convenient system control

Sanyo control equipment meets the needs of various of customers.

Operation system	Individual control systems			Timer operation
Needs	Normal operation	Operation from each seat	Quick and easy operation	Daily and weekly program
External appearance				
Type, model name	Wired remote controller RCS-TM80BG	Wireless remote controller RCS-XM18BG.WL RCS-SH80BG.WL RCS-SS80BG.WL RCS-BH80BG.WL RCS-TRP80BG.WL RCS-SH1BG	Simplified remote controller RCS-KR1AGB	Schedule timer SHA-TM64AGB
Number of indoor units which can be controlled	1 group, 8 units	1 group, 8 units	1 group, 8 units	64 groups, max. 64 units
Use limitations	● Up to 2 units can be connected per group.	● Up to 2 units can be connected per group.	● Up to 2 units can be connected per group.	● Power supply from the system controller ● When there is no system controller, connection is possible to the T10 terminal of an indoor unit.
Connectable indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit
Function	ON/OFF	○	○	○
	Mode setting	○	○	○
	Fan speed setting	○	○	○
	Temperature setting	○	○	○
	Air flow direction	○	○	○
	Permit/Prohibit switching	—	—	—
	Weekly program	○	—	○

*1 Select two of the following: "Fan speed", "Air flow direction", "Central/Individual", and "Filter sign".

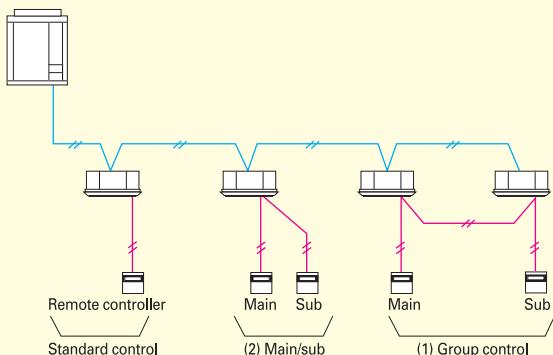
*2 Setting is not possible when a remote control unit is present. (Use the remote control for setting.)

Centralized control systems			
Operation with various function from center station	Only ON/OFF operation from center station	Simplified charge ratio for each tenant	
Touch screen panel	Personal computer (field supply)		
			
System controller SHA-KC64AGB	ON/OFF controller SHA-KC16KAGB	Intelligent controller SHA-KT256EG	Communication adaptor SHA-KA128AGB
64 groups, max. 64 units	16 groups, max. 64 units	64 units x 4 systems, max. 256 units	2 systems, max. 128 units
<ul style="list-style-type: none"> Up to 10 units, 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. 	<ul style="list-style-type: none"> Up to 8 units (4 main units + 4 sub units) can be connected to one system. Use without remote controller is impossible. 	<ul style="list-style-type: none"> A communication adaptor (SHA-KA128AGB) must be installed for three or more systems. 	
4 & 5 series indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit
○	○	○	○
○	—	○	○
○	—	○	○
○	—	○	○
○*2	—	○*2	○*2
○	○	○	○
—	—	○	○

Convenient system control

Remote controller (Wired remote controller/Wireless remote controller)

● System example



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 first-pressed priority of the remote controller. ○ Switching between remote controller sensor and body sensor is possible.	● Wired remote controller RCS-TM80BG ● Wireless remote controller RCS-XM18BG.WL RCS-SH80BG.WL RCS-SS80BG.WL RCS-BH80BG.WL RCS-TRP80BG.WL RCS-SH1BG	1 unit each
(1) Group control ○ Batch remote control of 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 RCS-TM80BG	1 unit
(2) Main/sub remote control ○ Max. 2 remote controllers per indoor unit. (Main remote controller and sub remote controller can be connected.) ○ The button pressed last has priority. ○ Timer setting is possible even with the sub remote controller.	Main or sub ● Wired remote controller RCS-TM80BG ● Wireless remote controller RCS-XM18BG.WL RCS-SH80BG.WL RCS-SS80BG.WL RCS-BH80BG.WL RCS-TRP80BG.WL RCS-SH1BG	As required

■ Wired remote controller (RCS-TM80BG)



(Dimensions: H 120 x W 120 x D 16 mm)

● Basic remote controller ON/OFF

- Operation mode changeover (Cooling, Heating, Dry, Auto, Fan)
- Temperature setting (Cooling/Dry: 18-30deg Heating: 16-30deg)
- Air volume adjustment (HH, H, LL, Auto)
- Air flow direction adjustment

● Time Function

- 24 hours real time clock
- Day of the week indicator

● Weekly Program Function

- A maximum of 6 action can be programmed for each day.

● 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.

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

■ Wireless remote controller



XM type
RCS-XM18BG.WL



X type
RCS-SH80BG.WL



T, L, A type
RCS-TRP80BG.WL



K type
RCS-SH1BG



S type
RCS-SS80BG.WL



For all indoor units
RCS-BH80BG.WL

● 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).

● Easy installation for the 4-way cassette type simply by replacing the corner part.

● 24 hours timer function

● Remote control by main remote controller and sub controller is possible.

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

Do not perform group control for 3 Series indoor unit and 4 Series indoor unit together.

● When RCS-BH80BG.WL 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 like temperature setting, operation switching, wind direction/fan speed setting, etc.

■ Simplified remote controller (RCS-KR1AGB)



(Dimensions: H 120 x W 70 x D 16 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.)

■ Schedule timer (SHA-TM64AGB)



(Dimensions: H 120 x W 120 x D 16 mm)

* 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.

● 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.)

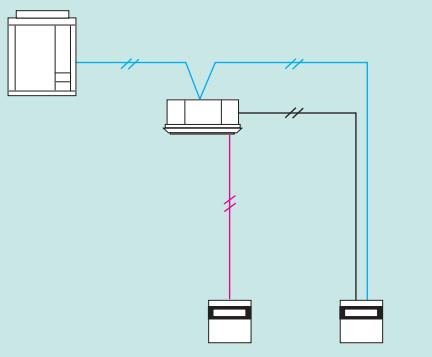
*The power supply for the schedule timer is taken from one of the following.

1 Control circuit board (T10) of a nearby indoor unit
(Power supply wiring length: Within 200 m from the indoor unit)

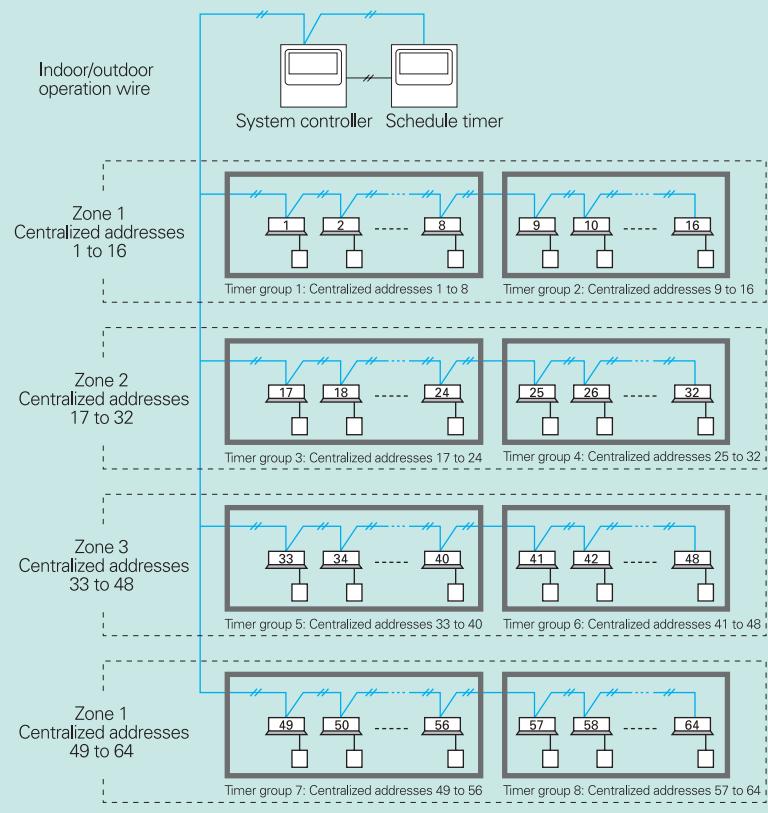
2 System controller
(Power supply wiring length: Within 100 m from the indoor unit)

*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.

● Connection example 1 (power supply from the indoor unit)



● Connection example 2 (power supply from the central controller)



Convenient system control

■ System controller (SHA-KC64AGB)



(Dimensions: H 160 x W 160 x D 21 + 69 (embedding dimension) mm)

- * Power supply ○ AC 220 to 240 V
- * I/O part ○ Remote input (effective voltage: DC 24 V)
 - : All ON/All OFF
 - Remote output (voltage-free contact)
 - : All ON/All OFF
 - (external power supply within DC 30 V)
- * 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 (only when used without a remote controller), operation monitoring, alarm monitoring, ventilation, remote controller local operation prohibition, etc.

Individual	All operations are possible also from the remote controller. However, the contents will be changed to the contents of the controller operated last.
Central: 1	The remote controller cannot be used for ON/OFF. (All other operations are possible from the remote controller.)
Central: 2	The remote controller cannot be used for ON/OFF, mode change, and temperature setting. (All other operations are possible from the remote controller.)
Central: 3	The remote controller cannot be used for mode change or temperature setting change. (All other operations are possible from the remote controller.)
Central: 4	The remote controller cannot be used for operation mode change. (All other operations are possible from the remote controller.)

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

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

- Central control mode: The system controller is used as centralized 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.)

Ⓑ 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.

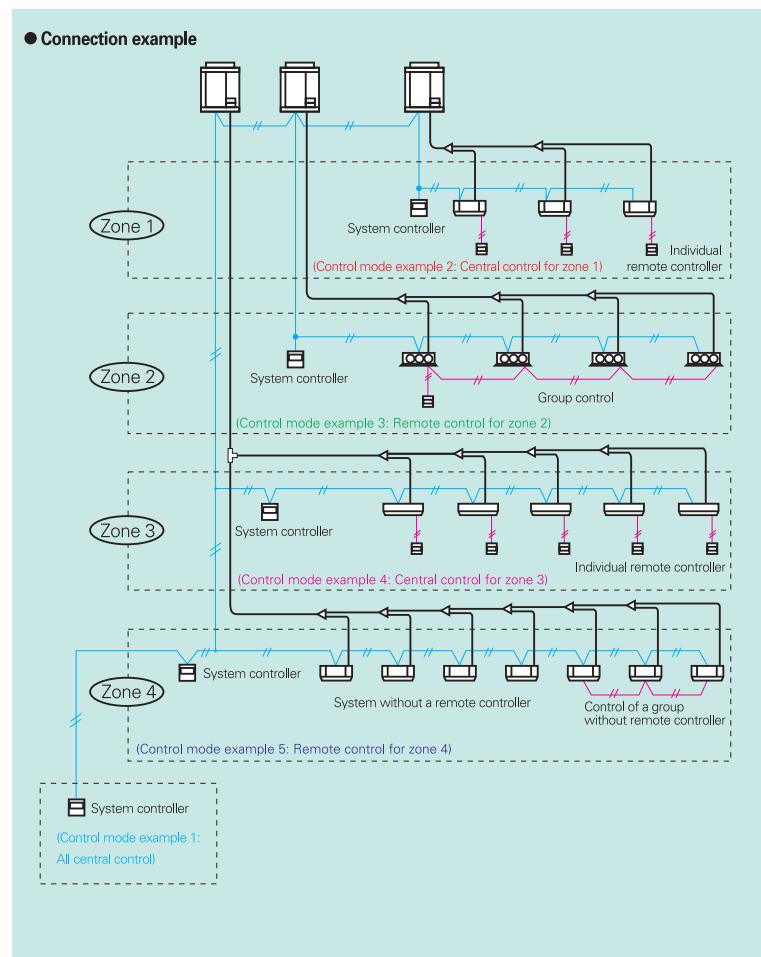
Ⓐ Controlled unit number mode	Ⓐ Operation mode	
	Central control mode	Remote control mode
All mode	All central control *Example 1	All remote control
Zone 1 mode	Zone 1 central control *Example 2	Zone 1 remote control
Zone 2 mode	Zone 2 central control *Example 3	Zone 2 remote control
Zone 3 mode	Zone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

● Joint use with a remote controller, an intelligent controller, a schedule timer, etc. is possible.

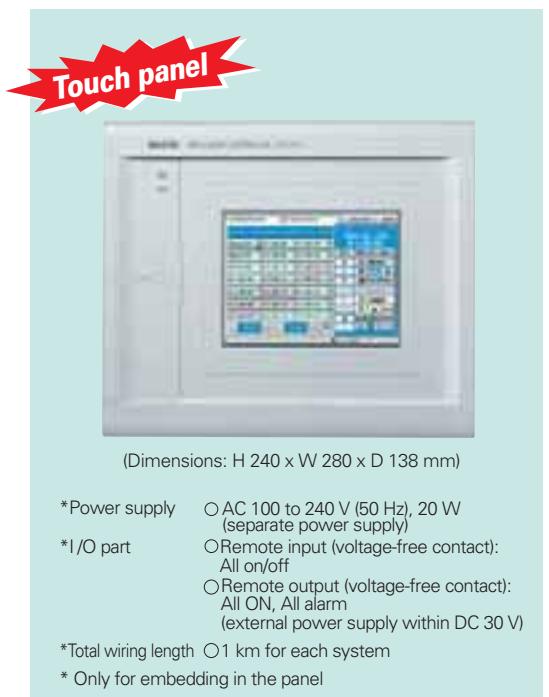
(The maximum number of connectable system controllers is 10, including other central controllers on the same circuit.)

(In case of joint use with a wireless remote controller, there are limitations for the control mode. Please use only with "Individual" and "Central 1".)

● Control of systems without a remote controller and of main/sub systems (a total of up to two units) is possible.



■ Intelligent controller (SHA-KT256EG)



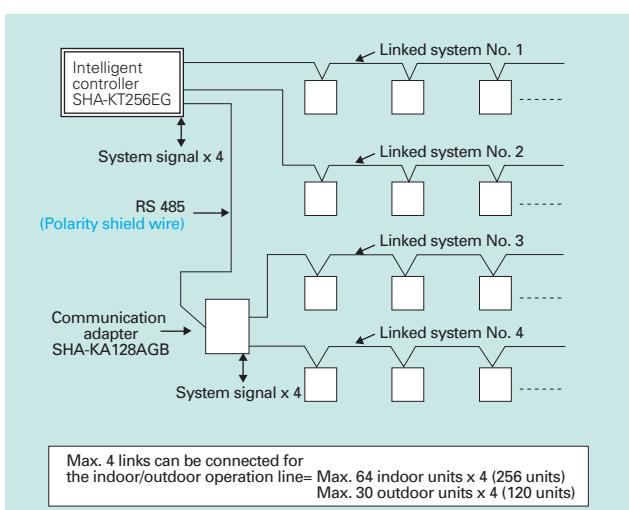
- Limitation contents for prohibited operation
Prohibition means limitation of the operation contents from the remote controller. It is also possible to change the prohibition items.

	Limitation contents
Individual	There is no limitation for the operation of the remote controller. However, the contents will be changed to the contents of the controller operated last. (Last-pressed priority)
Prohibition: 1	The remote controller cannot be used for ON/OFF. (All other operations are possible from the remote controller.)
Prohibition: 2	The remote controller cannot be used for ON/OFF, operation mode change, and temperature setting. (All other operations are possible from the remote controller.)
Prohibition: 3	The remote controller cannot be used for operation mode change and temperature setting. (All other operations are possible from the remote controller.)
Prohibition: 4	The remote controller cannot be used for operation mode change. (All other operations are possible from the remote controller.)
Note: Avoid joint use of the AMY system and the intelligent controller on the same indoor/outdoor operation line.	



- Max. 256 indoor units (4 systems x 64 units) can be controlled. In case of three or more systems, a communication adapter SHA-KA128AG must be installed on the outside.
- Operation is possible as batch, in zone units, in tenant units, and in group units.
- ON/OFF, operation mode setting, temperature setting, for 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.
- A system without a remote controller is possible. Joint use with a remote controller or a system controller etc. also is possible.
- Use of a schedule timer and holiday setting also can be done.
- Proportional distribution of the air-conditioning energy is possible.
- Input pulse signal from Electric or Gas consumption meter.

* In case of joint use with a wireless remote control system, there are limitations for the control mode. Please use only with "Permission" and "Prohibition 1".



■ Communication adaptor (SHA-KA128AGB)



- Required to connect three or more linked wiring systems (indoor/outdoor operation lines) to the intelligent controller .
- Also required for connection of the AMY software.
* For more detail, please take a look at page 58.
- Two linked wiring systems can be connected to one SHA-KA128AG, but max. 4 systems can be connected for the entire intelligent controllers.
- As this is not a splash-proof design, it must be installed indoors or in the control panel etc.

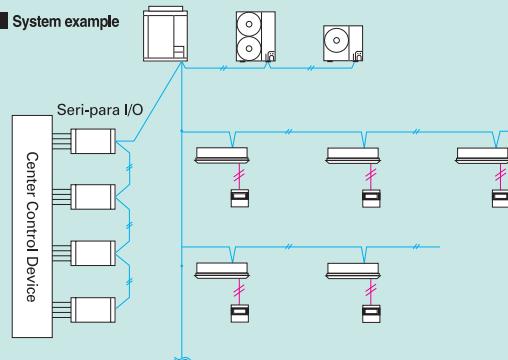
CONVENIENT SYSTEM CONTROL

Seri-Para I/O Unit (ACC-SP16TAG)



- This is the interface for connecting signals from the center control device with the SANYO air conditioner unit control network.
- This unit can control and monitor the status up to 16 groups of indoor units (Max 64 indoor units).
- Up to 4 seri-para units can be connected in one system.
- From the center control device, it is possible to set the temperature and to monitor the room temperature or intake air temperature.

System example



Input	Output
1.On/Off (Pulse DC24V) 2.Local prohibit (Continuous DC24V) 3.Temp setting (Analog DC1~5V) 4.All On/Off (Pulse DC24V) 5.All local prohibit & Emergency stop (Continuous DC24V)	1.On/Alarm/Answer back/Filter sign 2.Room temp (Analog DC4-20mA) 3.All On/Off

LonWorks Interface (SHA-LN16UGB)



- This interface is a communications converter for connecting LonWorks to the Sanyo air conditioner unit (PAC • GHP) control network.
- From the host connected to LonWorks, basic settings and status monitoring is possible for up to 16 groups of A/C units.

FUNCTIONS

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

* Select two of the following: remote controller prohibit, fan speed setting, air direction setting, filter sign reset.

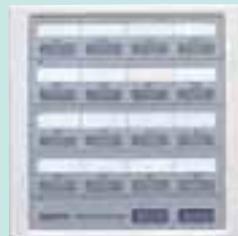
Remote sensor

● ART-K45AGB



- This is a remote sensor which can be used with 4 series indoor unit. Please use it to detect the room temperature when no remote controller sensor or body sensor is used. (Correspondence 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.

ON/OFF controller (SHA-KC16KAGB)



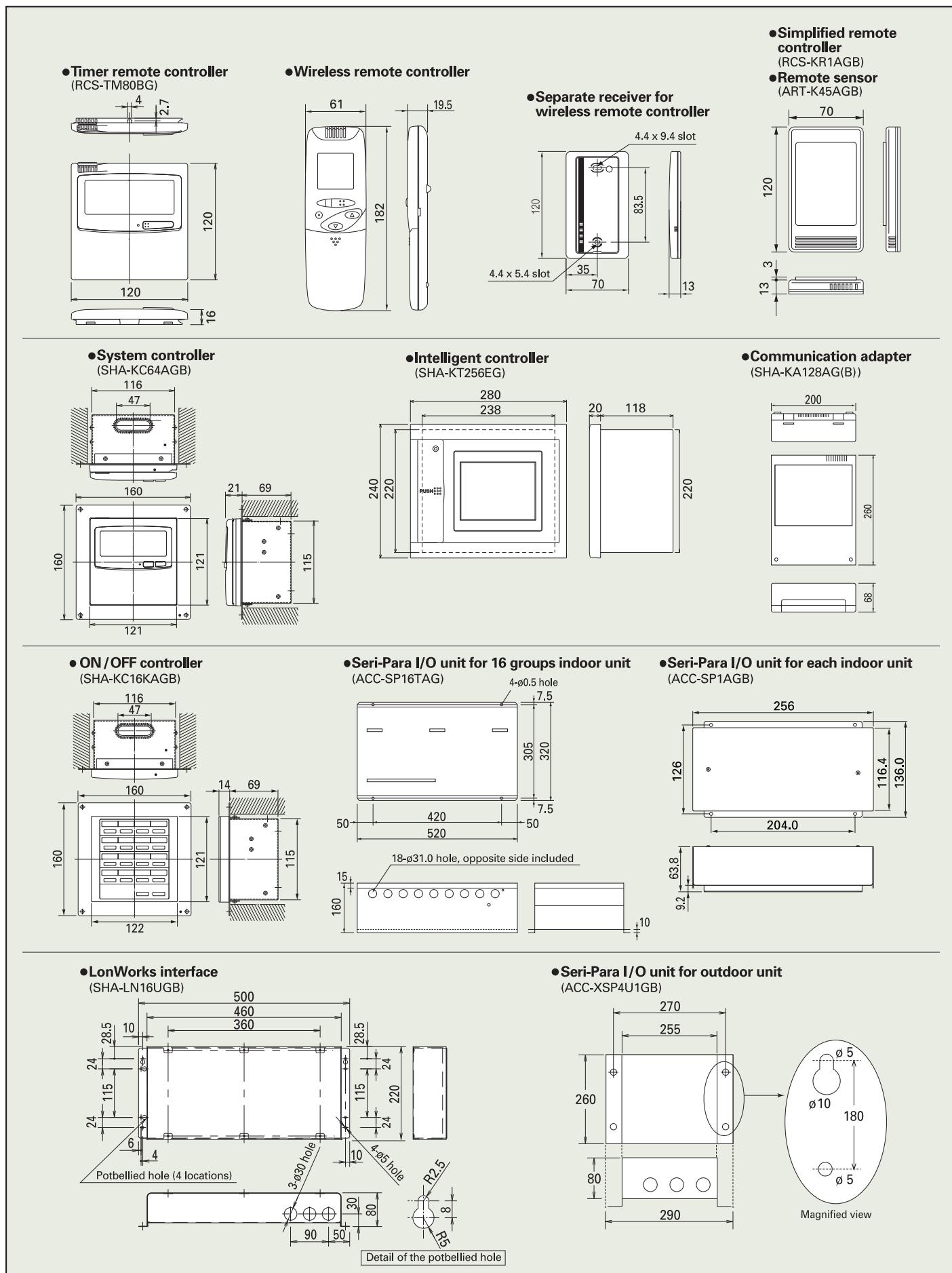
(Dimensions: H 121 x W 122 x D 14 + 52 (embedding dimension) mm)

- * Power supply ○ AC 220 to 240 V
- * I/O part ○ Remote input (effective voltage: within DC 240V) : All ON/OFF
- Remote output (allowable voltage: within DC 30V) : All ON, All alarm

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

*As operation mode and temperature settings are not possible with the ON/OFF controller, it must be used together with a remote controller a system controller etc.

CONTROL EQUIPMENT EXTERNAL APPEARANCE DRAWINGS

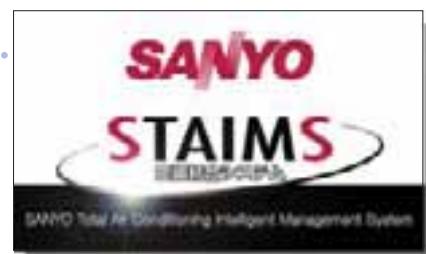


STAIMS Basic software / TECS-5000

~ Up to 1024 indoor units can be controlled by one PC ~

Functions of basic software

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



With 4 upgrade packages the basic software can be upgraded to suit individual requirements

STAIMS optional software

TECS-5000A 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

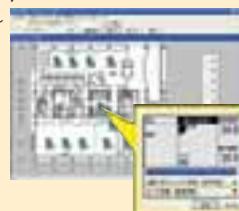


STAIMS optional software

TECS-5000G 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.

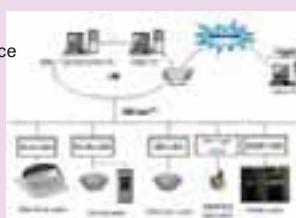


STAIMS optional software

TECS-5000B for BACnet interface

~ Connectable to BMS system ~

- Can communicate with other equipment by BACnet protocol.
- SANYO air conditioner's system can be controlled by both BMS and STAIMS.
- Max. 256 indoor units can be connected to 1 PC (that has STAIMS basic & BACnet software).



STAIMS optional software

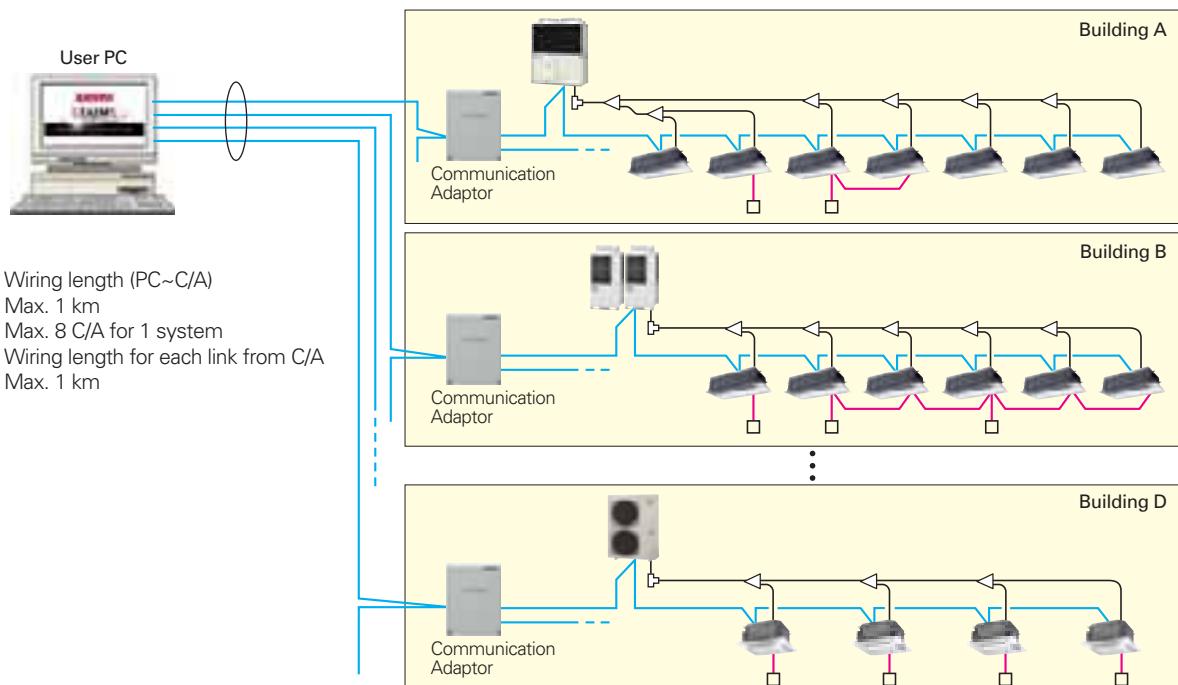
TECS-5000W for Web application

~ Web access & control from remote station ~

- Accessing STAIMS software from remote PC.
- You can monitor/operate SANYO system by using Web browser (Internet Explorer).



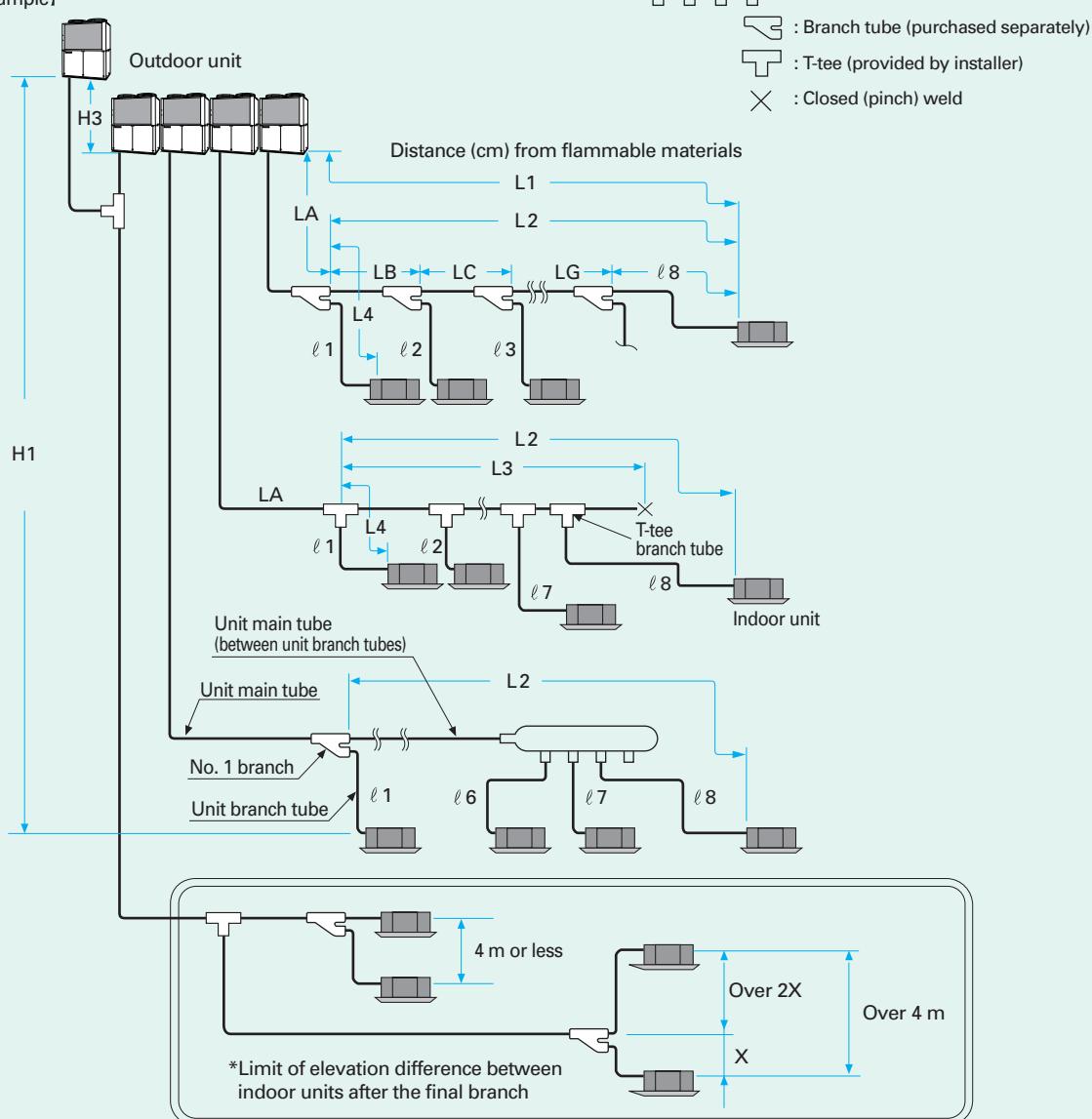
STAIMS is suitable for large shopping centers and universities with many areas/ buildings. 1 "STAIMS" PC can have 4 independent systems at once. Each system can have max. 8 C/A units, and control max. 512 units. In total, 1024 indoor units can be controlled by 1 "STAIMS" PC.



DESIGN & EXECUTION (Refrigerant tubing)

In regard to the refrigerant tubing length

[System Example]



Item	Symbol	Details	Actual length (m)	
			2 way	3 way
Allowable tubing length	L1	Maximum allowable tubing length	≤ 170 (200)*1	≤ 120 (145)*1
	LA	Maximum main tubing length	≤ 120	—
	△ L(L2-L4)	Difference between longest and shortest tubing lengths after the No. 1 branch (first branching point)	≤ 40	≤ 30
	l1, l2, -l8	Maximum length of each branch tube	≤ 30	
	L5	Maximum length between outdoor units	≤ 10	
Allowable elevation difference	H1	If outdoor unit is above	≤ 50	
		If outdoor unit is below	≤ 35*2	
	H2	Maximum difference between indoor units	≤ 15*3	
	H3	Maximum difference between outdoor units	≤ 4	
Allowable header tubing length	L3	Maximum length from the first tees to the front seal	≤ 2	

(*1) Equivalent length

(*2) If cooling mode is expected to be used when the external temperature is 10°C or below, install so the maximum length is 30 m.

(*3) Install so that the height difference between indoor units after the final branch is within the limits shown in the figure.

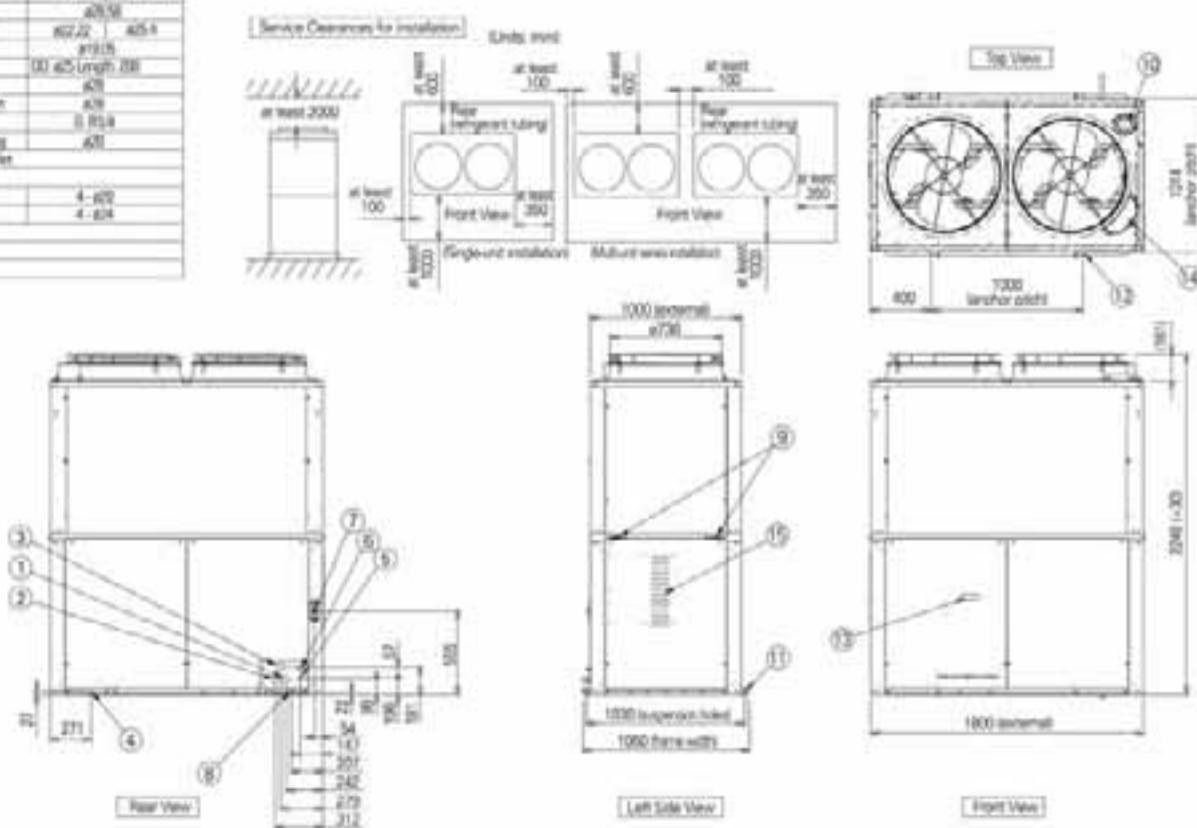
Outdoor Unit External Dimensions

G POWER

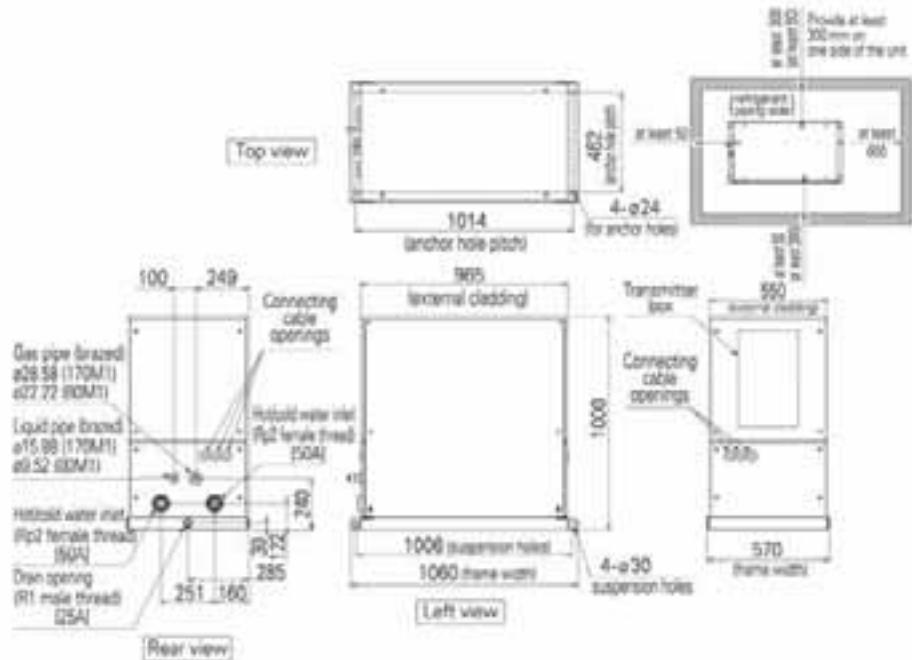
Size (mm)	
1) Gas refrigerant pipe (Gas tube)	Ø25.0
2) Liquid refrigerant pipe (Liquid tube)	ø15.8
3) Refrigerant balance pipe (Balance tube)	ø15.2
4) Exhaust gas return hose	Ø50 Length: 10
5) Electrical power supply cable	ø2.5
6) Inter-unit cable part	ø2.5
7) Inter-unit cable part	ø2.5
8) Fuel gas part	ø2.5
9) Suspension holes	Ø15.2
10) Compensation drain opening	Ø15.2
11) Fan and condenser outlet	
12) Engine exhaust outlet	
13) Suspension holes	Ø15.2
14) Anchor holes L = 62	
15) Segmented Inquiry	
16) Custom made base	
17) Grommet	
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3WAY MULTI

	Dimensions
Model Type:	150 180 300
1) External refrigerant pipe	ø28.58
2) Charge refrigerant pipe	ø27.22 (RDM1)
3) Liquid refrigerant pipe	ø15.88 (RDM1)
4) Exhaust gas drain hose	(Ø 40) Length 200
5) Water and cable port	ø25
6) Electrical power supply port	ø19
7) Fuel gas port	Ø 31.8
8) Condensate drain opening	ø25
9) Fan and condenser panel	
10) Engine exhaust outlet	
11) Suspension holes	4 - ø20
12) Anchor holes	4 - ø24
13) Segmented display	
14) Condensate intake hole	
15) Vent	



Water heat exchanger unit



Single MULTI — Design of tubing —

■ Refrigerant tubing size

① : In case of standard installation

② : L1 longer than 90m (Equivalent length) or more than 130% connection ratio

● Main tubing size [LA] and Balance tubing size

Outdoor Unit	Capacity		①		②	
	HP	kW	Gas	Liquid	Gas	Liquid
120	13	35.5	ø25.4	ø12.7	ø28.58	ø15.88
150	16	45.0	ø28.58	ø12.7	ø31.75	ø15.88
190	20	56.0	ø28.58	ø15.88	ø31.75	ø19.05
240	25	71.0	ø28.58	ø15.88	ø31.75	ø19.05

● Main tubing size after branch [LB, LC, -, -, -]

Outdoor Unit	Indoor unit total capacity After branch	①		②	
		Gas	Liquid	Gas	Liquid
120	Under 16.0kW	ø15.88	ø9.52	ø15.88	ø9.52
	16.1 - 22.4	ø19.05	ø9.52	ø22.22	ø12.7
	22.5 - 28.0	ø22.22	ø9.52	ø25.4	ø12.7
	28.1 - (71.0)	ø25.4	ø12.7	ø28.58	ø15.88
150	Under 16.0kW	ø15.88	ø9.52	ø15.88	ø9.52
	16.1 - 22.4	ø19.05	ø9.52	ø22.22	ø12.7
	22.5 - 28.0	ø22.22	ø9.52	ø25.4	ø12.7
	28.1 - 35.5	ø25.4	ø12.7	ø28.58	ø15.88
	35.6 - (90.0)	ø28.58	ø12.7	ø31.75	ø15.88
190	Under 16.0kW	ø15.88	ø9.52	ø15.88	ø9.52
	16.1 - 22.4	ø19.05	ø9.52	ø22.22	ø12.7
	22.5 - 28.0	ø22.22	ø9.52	ø25.4	ø12.7
	28.1 - 35.5	ø25.4	ø12.7	ø28.58	ø15.88
	35.6 - 45.0	ø28.58	ø12.7	ø31.75	ø15.88
	45.1 - (112.0)	ø28.58	ø15.88	ø31.75	ø19.05
240	Under 16.0kW	ø15.88	ø9.52	ø15.88	ø9.52
	16.1 - 22.4	ø19.05	ø9.52	ø22.22	ø12.7
	22.5 - 28.0	ø22.22	ø9.52	ø25.4	ø12.7
	28.1 - 35.5	ø25.4	ø12.7	ø28.58	ø15.88
	35.6 - 45.0	ø28.58	ø12.7	ø31.75	ø15.88
	45.1 - (142.0)	ø28.58	ø15.88	ø31.75	ø19.05

● Indoor unit connection size [In]

Indoor Unit	Capacity	Gas	Liquid
7 - 18	2.2 - 5.6	ø12.7	ø9.52
22 - 60	6.4 - 16.0	ø15.88	ø9.52
76	22.4	ø19.05	ø9.52
96	28	ø22.22	ø9.52

● Branch Kit table

Capacity after branch	Branch joint Kit		
	APR-P160BG	APR-P680BG	APR-P1350BG
Under 16.0kW	●	—	—
16.1 - 35.5	—	●	—
Over 35.6	—	●	—

● Header Kit table

Capacity after branch	Header joint Kit		
	SGP-HCH280M	SGP-HCH280K	SGP-HCH560K
Under 16.0kW	●	—	—
16.1 - 28.0	●	●	—
28.1 - 45.0	—	●	—
Over 45.1	—	—	●

* Regarding more detail information, please refer to the Installation manual or Technical data

■ Refrigerant tubing size

① : In case of standard installation

② : L1 longer than 90m (Equivalent length) or more than 130% connection ratio

● Main tubing size [LA] and Balance tubing size

Outdoor Unit	Capacity		①		②		Balance
	HP	kW	Gas	Liquid	Gas	Liquid	
120+120	26	71.0	ø28.58	ø15.88	ø31.75	ø19.05	
120+150	29	80.5	ø31.75	ø19.05	ø38.1	ø22.22	
150+150	32	90.0	ø31.75	ø19.05	ø38.1	ø22.22	
150+190	36	101.0	ø31.75	ø19.05	ø38.1	ø22.22	
190+190	40	112.0	ø38.1	ø19.05	ø38.1	ø22.22	
190+240	45	127.0	ø38.1	ø19.05	ø38.1	ø22.22	
240+240	50	142.0	ø38.1	ø19.05	ø38.1	ø22.22	

● Main tubing size after branch [LB, LC, -, -, -]

Indoor unit total capacity	①		②	
	Gas	Liquid	Gas	Liquid
After branch				
Under 16.0kW	ø15.88	ø9.52	ø15.88	ø12.7
16.1 - 22.4	ø19.05	ø9.52	ø22.22	ø12.7
22.5 - 28.0	ø22.22	ø9.52	ø25.4	ø12.7
28.1 - 35.5	ø25.4	ø12.7	ø28.58	ø15.88
35.6 - 45.0	ø28.58	ø12.7	ø31.75	ø15.88
45.1 - 71.0	ø28.58	ø15.88	ø31.75	ø19.05
71.1 - 101.0	ø31.75	ø19.05	ø38.1	ø22.22
Over 101.1	ø38.1	ø19.05	ø38.1	ø22.22

● Indoor unit connection size [In]

Indoor Unit	Capacity	Gas	Liquid
7 - 18	2.2 - 5.6	ø12.7	ø9.52
22 - 60	6.4 - 16.0	ø15.88	ø9.52
76	22.4	ø19.05	ø9.52
96	28	ø22.22	ø9.52

● Branch Kit table

Capacity after branch	Branch joint Kit			Header joint Kit		
	APR-P160BG	APR-P680BG	APR-P1350BG	SGP-HCH280M	SGP-HCH280K	SGP-HCH560K
Under 5.6kW	●	●	●	●	●	●
5.6 - 16.0	●	●	●	●	●	●
16.1 - 22.4	●	●	●	●	●	●
22.5 - 28.0	—	●	●	●	●	●
28.1 - 35.5	—	●	●	●	●	●
35.6 - 45.0	—	●	●	—	●	●
45.1 - 71.0	—	●	●	—	—	●
Over 71.0	—	—	●	—	—	●

* Regarding more detail information, please refer to the Installation manual or Technical data

3 WAY MULTI — Design of tubing —

■ Refrigerant tubing size

① : In case of standard installation

② : L1 longer than 90m (Equivalent length) or more than 130% connection ratio

● Main tubing size [LA] and Balance tubing size

Outdoor Unit	Capacity		①		②		Liquid
	HP	kW	Suction	Discharge	Suction	Discharge	
150	16	45.0	ø28.58	ø22.22	ø31.75	ø22.22	ø19.05
190	20	56.0	ø28.58	ø25.4	ø31.75	ø25.4	
240	25	71.0	ø28.58	ø25.4	ø31.75	ø25.4	

● Main tubing size after branch [LB, LC, -, -, -]

Outdoor Unit	Indoor unit total capacity after branch	①		②		Liquid
		Suction	Discharge	Suction	Discharge	
150	Under 8.9kW	ø15.88	ø12.7	ø15.88	ø12.7	ø9.52
	9.0 - 16.0	ø19.05	ø15.88	ø19.05	ø15.88	ø9.52
	16.1 - 28.0	ø25.4	ø19.05	ø25.4	ø19.05	ø12.7
	28.1 - 35.5	ø28.58	ø22.22	ø28.58	ø22.22	ø15.88
	Over 36.5	ø28.58	ø22.22	ø31.75	ø22.22	ø19.05
190	Under 8.9kW	ø15.88	ø12.7	ø15.88	ø12.7	ø9.52
	9.0 - 16.0	ø19.05	ø15.88	ø19.05	ø15.88	ø9.52
	16.1 - 28.0	ø25.4	ø19.05	ø25.4	ø19.05	ø12.7
	28.1 - 35.5	ø28.58	ø22.22	ø28.58	ø22.22	ø15.88
	Over 36.5	ø28.58	ø25.4	ø31.75	ø25.4	ø19.05
240	Under 8.9kW	ø15.88	ø12.7	ø15.88	ø12.7	ø9.52
	9.0 - 16.0	ø19.05	ø15.88	ø19.05	ø15.88	ø9.52
	16.1 - 28.0	ø25.4	ø19.05	ø25.4	ø19.05	ø12.7
	28.1 - 35.5	ø28.58	ø22.22	ø28.58	ø22.22	ø15.88
	Over 36.5	ø28.58	ø25.4	ø31.75	ø25.4	ø19.05

● Tubing size after branch [In]

Indoor unit total capacity after branch	Indoor unit - SVK		Branch - SVK		
	Gas	Liquid	Suction	Discharge	Liquid
2.2 - 5.6kW	ø12.7	ø9.52	ø15.88	ø12.7	ø9.52
7.1 - 16.0	ø15.88	ø9.52	ø15.88	ø12.7	ø9.52

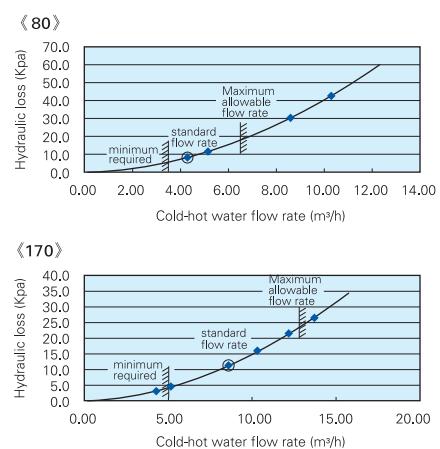
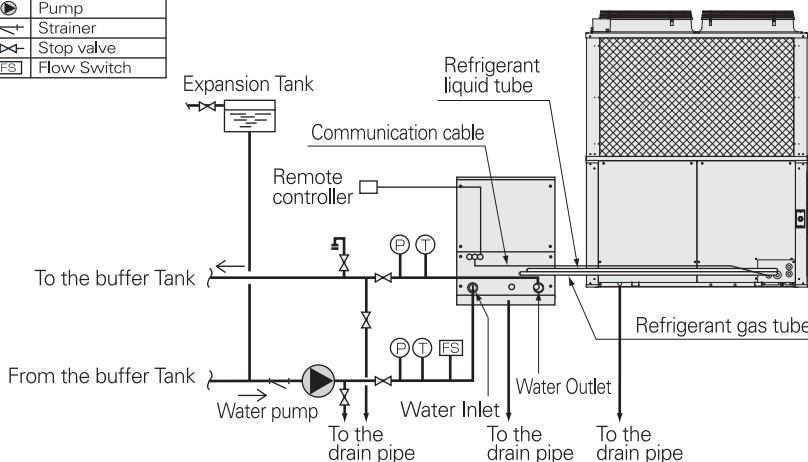
● Branch Kit table

Capacity after branch	①			②		
	APR-RZP224BGB	APR-RZP680BGB	APR-RZP1350BGB	APR-RZP224BGB	APR-RZP680BGB	APR-RZP1350BGB
Under 8.9kW	●	●	●	●	●	●
9.0 - 16.0	●	●	●	●	●	●
16.1 - 28.0	—	●	●	—	●	●
28.1 - 35.5	—	●	●	—	●	●
35.6 - 45.0	—	●	●	—	—	●
Over 45.0	—	●	●	—	—	●

WATER HEAT EXCHANGER INSTALLATION INSTRUCTION

Installation instruction of GHP Water Heat Exchanger

(T)	Thermometer
(P)	Pressure Gauge
(P)	Pump
(S)	Strainer
(SV)	Stop valve
(FS)	Flow Switch



Water piping construction

Warning

- Only use water as the heat medium for the hot and cold water and the chilled water. Otherwise, this could result in fires or explosions.

Caution

- Use water that complies with water standards for hot and cold water and for cooling water. Poor quality water can cause breakdown or water leaks.
- Dispose of brine and cleaning fluid in accordance with the applicable regulations. If these items are illegally disposed, not only will this result in legal matters, but it will also have bad effect on the environment and health.

- (1) Water pipes can be connected to either the front or the rear of the water heat exchanger unit. When shipped from the factory, rubber stoppers are fitted to the openings. Openings that are not being used should be closed with the rubber stopper.
- (2) Connect the hot and cold water circulation pump to the inlet pipe side of the water heat exchanger.
- (3) Make the opening of the water pipe larger than the opening of the connector (50A), and use as few bends as possible, in order to reduce the pipe resistance as much as possible. Also, use unions or flanges near the unit, so that the unit can be easily removed.
- (4) Install a suitable water removal valve and air removal valve in the water pipes. If air becomes mixed with the liquid in the pipes, this can cause noise, corrosion, and reduced performance.
- (5) Make sure that there is always at least the minimum quantity of water (0.3m³) in the system. (if the water quantity is small, provide a storage tank or similar). If there is insufficient water in the unit this will cause the system to stop frequently or to breakdown.
- (6) Provide a water thermometer and flow rate adjustment valve, so that during test running it is possible to adjust the cold (hot) water flow rate while watching the water temperature. Also, after adjusting, do not touch the adjustment valve.

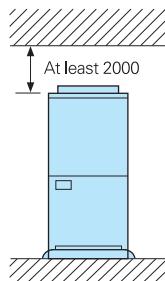
- (7) Adjust the water pressure so that the pressure in the water heat exchanger is less than, 0.69N/mm².
- (8) Install an expansion tank within the water pipe system.
- (9) The hot and cold water flow rate should be within the range shown in Figure 3. If used outside this range then it could cause breakdown due to corrosion or freezing of the water heat exchanger unit.
- (10) Provide sufficient insulation to the water pipes. If insufficient insulation is provided then this will result in loss of heat. Also, in a severe cold period damage due to freezing of the pipes can occur.
- (11) Within the water heat exchanger unit there is a circuit such that, if the external air temperature and the temperature of the water within the unit fall, the hot and cold water circulation pump automatically starts, to prevent freezing within the water heat exchanger unit. However, if the unit location or if the insulation to the water pipes is insufficient, the temperature of the water in the pump and hot and cold water pipes might fall and freeze before the temperature of the water in the unit falls. In this situation provide a circuit which detects the outdoor air temperature at the position of the whole water circulation system where the water temperature falls fastest, so that the hot and cold water circulation pump can automatically start. Attach suitable suspension fittings to the pipes, so that no unreasonable load is applied to the water heat exchanger unit.

Precautions

Securing adequate space for servicing

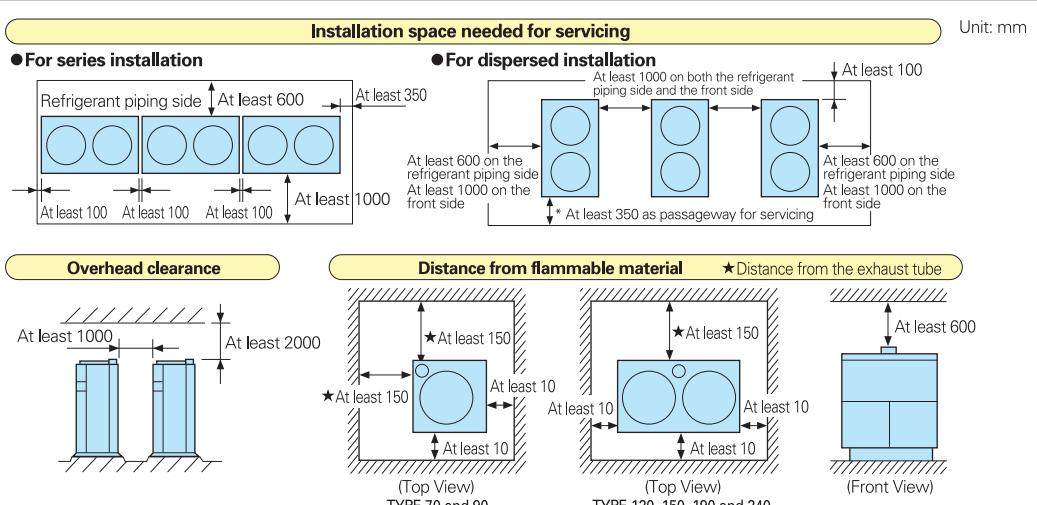
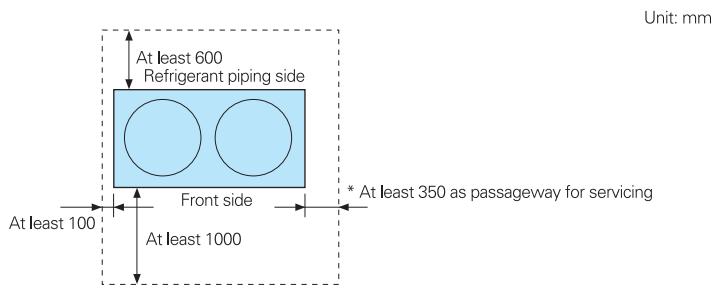
① Several units can be installed in series

Install the outdoor unit in a well-ventilated location that will help the heat exchanger work at its optimum level. Be sure to secure enough space for maintenance work, referring to the diagram below for minimum clearances. When installing up to three units in series provide a passageway between units for servicing.



② Installing 8 or more outdoor units in series

When installing eight or more outdoor units in series, or when installing units near a wall or other location where air circulation may be inadequate, give sufficient consideration to the possibility of the units shorting out.



Avoid the following installation locations.

Install the unit safely and securely in a place where it will be adequately protected and be able to perform at its designed specifications.

● A place that has no space for servicing

Maintenance work can require a large number of instruments and tools. Lack of sufficient space for servicing may prevent the unit from being properly maintained and cared for.

● A place that is unsafe for maintenance work

If the unit is installed on the roof of a building (even if the spot is level) and it is not prevented from falling with a guardrail or similar means, not only will maintenance work become impossible but the unit may fall or other accident may occur.

● A place where a ladder must be used to access the unit

An installation that requires maintenance workers to go up and down a ladder or stairs makes safe and reliable maintenance work not only difficult but dangerous as well.

● A poorly ventilated location

If the top, side, or front of the unit is close to a wall or other obstruction, poor ventilation and lack of sufficient air circulation may not only cause trouble but also prevent the unit from operating normally.

● Near a street lamp or tree

Insects attracted by street lamps in large numbers and leaves from trees can get sucked into the unit and cause it to malfunction.

Other locations to avoid:

- * Places where chemicals are used
- * Places where the unit will disturb others
- * Near a chimney or exhaust outlet
- * Places exposed to strong winds
- * An installation that has no vibration-proof pad
- * Near a wall other than a soundproof wall
- * Places where salt damage may occur and no preventive measures are taken
- * Places with no protection from snow

In addition, if the area below the outdoor unit is to be used, make sure the installation pad is constructed so that water drops and oily or greasy dirt will not drip down into the area below. Do not use a pad fabricated by metal punching or similar process.

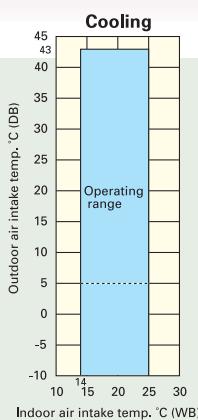
FEATURES

High technology features

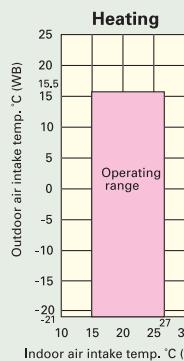
WIDE OPERATION

Wider operation

Rated Condition



Cooling can be performed throughout the year for computer rooms, banquet halls, etc. Wider operation range covers outdoor temperatures of as low as -10°C DB for cooling and -21°C WB for heating.



Automatic restart function for power failure

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



Self-diagnosing function

By using electronic control valves for Details of past record of warnings are stored and can be verified on the liquid crystal display. This makes it easier to diagnose malfunctions, greatly reducing service labor.

Simple, convenient features (Indoor Units)



Automatic fan operation

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



Mild Dry

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



Air Sweep

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



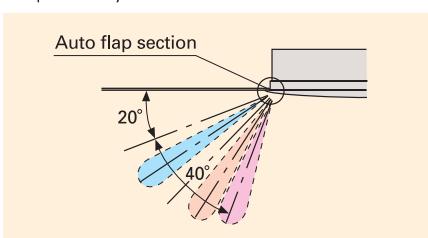
Built-in drain pump

Max. head 50cm (or 75cm: U type) from the bottom of the unit.



Comfortable auto-flap control

When the unit is first turned on, flap position is automatically adjusted in accordance with the cooling or heating operation. This initial flap position can be preset within a certain range, for both cooling and heating. Auto button is included for continuous movement of flap to vary airflow direction.



"Maintenance and inspection" is a must for gas heat pump air-conditioning systems.

Just like an automobile, a heat pump air-conditioning system requires periodic servicing so that it can perform efficiently.

Maintenance and inspection

Fixing problems

Efficient operation

Preserving durability

Safe and reliable operation

Energy saving

Main maintenance and inspection items

1. Changing the engine oil
2. Checking the coolant level
3. Inspecting the engine system
4. Checking the safety protection system
5. Checking and adjusting the running conditions, collecting operating data, etc.

Since a heat pump air-conditioning system uses a gas engine as its power source, it should be periodically inspected to avoid trouble and keep it running efficiently. We recommend a maintenance contract for your Sanyo Gas Heat Pump, a great value because it not only ensures that problems will be fixed, but it helps reduce running costs and improve comfort and economical efficiency as well.



Indicates conformation
with EC Directives



ISO 9001: 2001
Certificate Number: JQ116B



ISO 14001: 2001
Certificate Number: ECOOJ0303-33

SANYO reserves the right to make any variation in specification to the equipment described or to withdraw or replace products without prior notification or public announcement. All descriptions, illustrations, drawings and specifications in this publication are given in good faith, but are intended to present only general particulars and shall not form any part of the contract. For full installation details, please contact your SANYO distributor.

REF: GHPMSG08V1

Rating Conditions

The cooling and heating capacities are based on the following conditions:
Cooling: Indoor temperature 27°C DB / 19°C WB, Outdoor temperature 35°C DB / 24°C WB.
Heating: Indoor temperature 20°C DB, Outdoor Temperature 7°C DB 6°C WB.



Printed using paper produced from 50% recycled material and 50% from sustainable forestry.

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SANYO Air Conditioners. The natural choice.

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