inventor

Your-conditions

DC INVERTER MULTI VRF

TECHNICAL SALES GUIDE

CAPACITY RANGE : 10 -180 kW





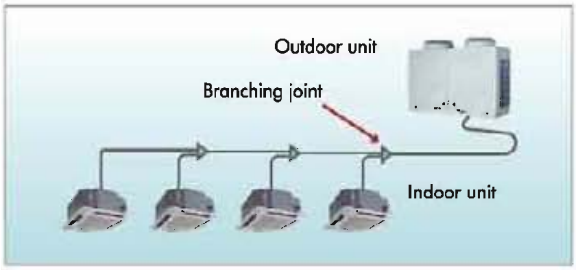
R410A

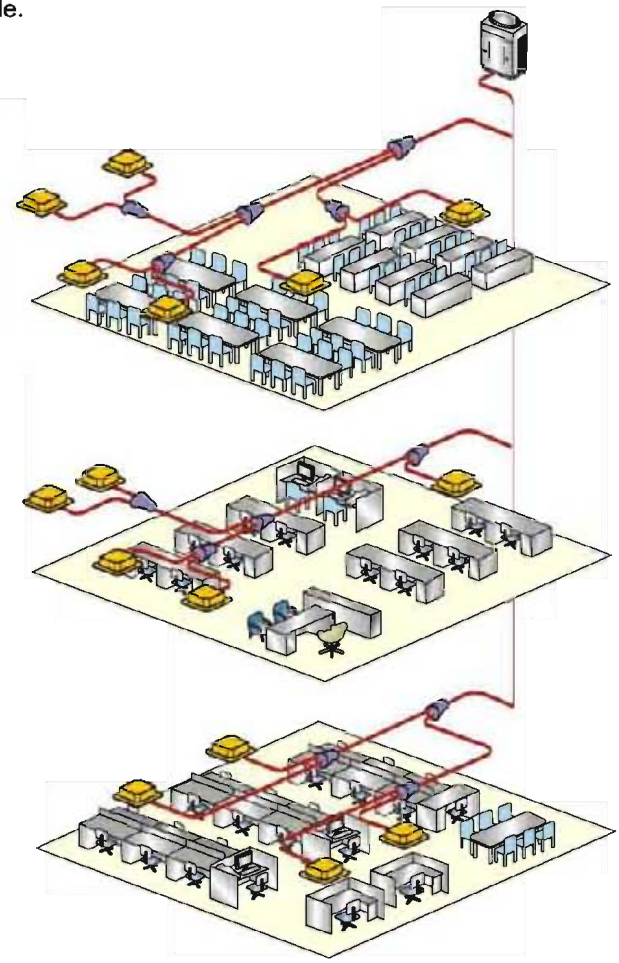
CONTENTS

1 OUTLINE OF MULTI VRF

Shortest Route Design by Free Branching

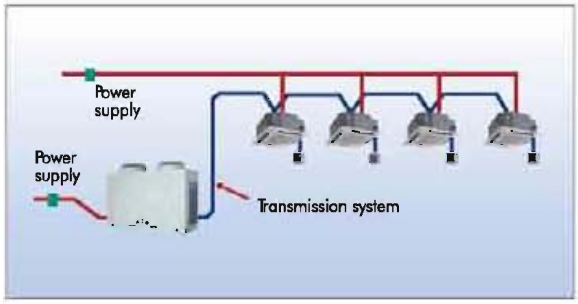
Combination of line and branching is highly flexible. This follows for the shortest design route possible, thereby saving on installation time and cost.





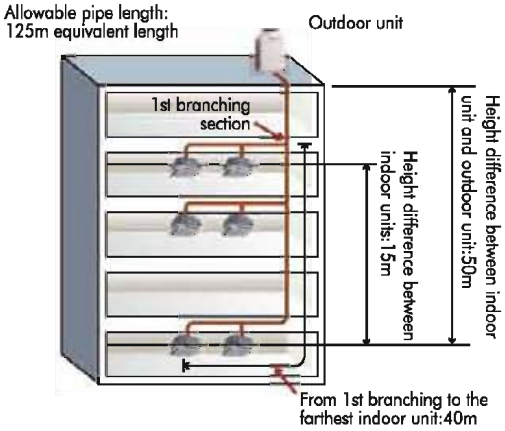
Simple Wiring

2-wire multiplex transmission system makes it possible to connect multiple indoor units to one outdoor unit with a 2-core wire,thus simplify the wiring operation.



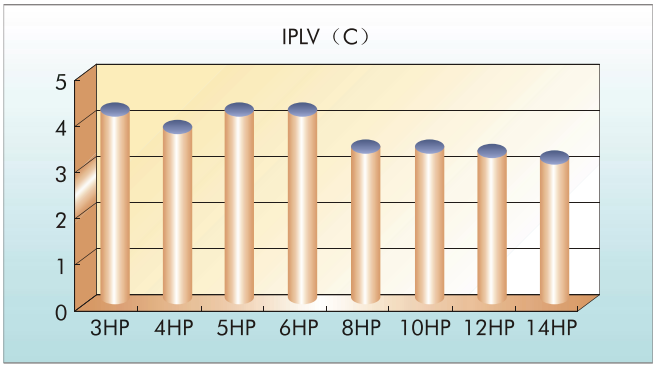
High Lift Design

Equivalent pipe length of 125m and vertical lift of 50m is made possible with INVENTOR INV
Vertical lift between indoor units of 15m is the highest in the industry. This allows for greater flexibility in the location of the system.



Energy Saving

Because each room is controlled individually,only those rooms requiring air conditioning are cooled or heated.In addition,thanks to inverter technology,the level of air conditioning can be precisely controlled depending on the condition of each room.High IPLV is achieved by employing advanced technology,contributing to smooth and econnmical operation.The largest IPLV value can reach 4.4w/w,Compared with the conventional chiller fan coil system,a large energy saving can be realized.



Self Diagnostics System

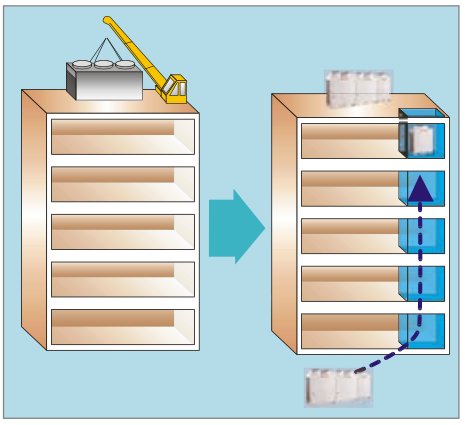
Comprehensive troubleshooting code allows for fimely identification of problems arising.

Self diagnostics examples

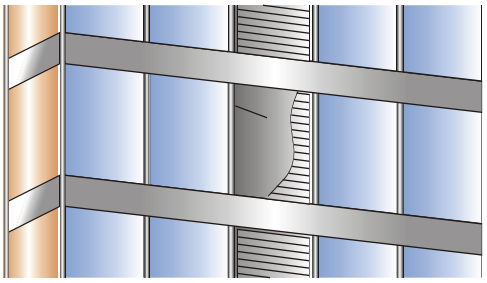
Error code	Malfunction
E1	High pressure protection of compressor
E2	Indoor anti-frozen protection
E3	Low pressure protection of compressor
E4	Discharge temp.protection of compressor
E5	Compressor overload protection
E6	Communication error
E7	Modes conflict

Compact Design

We offer a wide lineup of outdoor and indoor units to answered the needs of building size and interior design. The length of refrigerant pipes is layed without narrow on design, thus it allowing of flexibility more greater in planning.
Indoor units are so lightweight and compact that they can be installed in any ceiling space. Outdoor units do not require the special cranes or conveyors to move them. They can even be hauled in a building elevator. the diameter of pipes is narrow,and the number is few, so making layout simpler. Inspection after installation is straightforward.

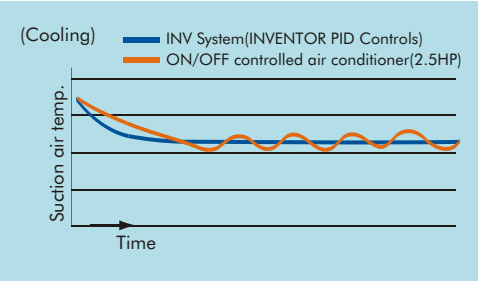


If necessary,installation can be performed by floor.The installers do not have to wait until the entire system is installed in the building to test the system in each section.



Intelligent Control

INVENTOR INV intelligent controls and modulating valves could deliver the required capacity, according to the load variation from 10% to 100%.the intelligent controls and modulating valves limit or increase the cooling modulating valves limit or increase the cooling capacity, so humidity and temperature are kept in the comfort range.
Electronic expansion valves respond to the changes in load of indoor units and continually control the flow rate of the refrigerant.In this way,We can get a nearly constant room temperature with the INV system without the typical temperature changes that occurs with a conventional ON/OFF control system.The extremely refined PID controls to maintains the room temperature within.



Wide Control Application

- Central control available （ provided with weekly timer function)
- Monitoring system available
- Single remote controller and wired controller of indoor units Region
- Monitoring controller
- Region wired controller

2 SUMMARY OF SYSTEM EQUIPMENTS

2.1 Outdoor Unit

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm224W/NaB-H	
Cooling Capacity(kW)	22.4	
Heating Capacity(kW)	25.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm280W/NaB-H	
Cooling Capacity(kW)	28.0	
Heating Capacity(kW)	31.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm335W/NaB-H	
Cooling Capacity(kW)	33.5	
Heating Capacity(kW)	37.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm400W/NaB-H	
Cooling Capacity(kW)	40.0	
Heating Capacity(kW)	45.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm450W/NaB-H	
Cooling Capacity(kW)	45.0	
Heating Capacity(kW)	50.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm504W2/NaB-H	
Cooling Capacity(kW)	50.4	
Heating Capacity(kW)	56.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm560W2/NaB-H	
Cooling Capacity(kW)	56.0	
Heating Capacity(kW)	63.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm615W2/NaB-H	
Cooling Capacity(kW)	61.5	
Heating Capacity(kW)	69.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm670W2/NaB-H	
Cooling Capacity(kW)	68.0	
Heating Capacity(kW)	76.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm730W/NaB-H	
Cooling Capacity(kW)	73.0	
Heating Capacity(kW)	81.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm785W2/NaB-H	
Cooling Capacity(kW)	80	
Heating Capacity(kW)	90	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm850W2/NaB-H	
Cooling Capacity(kW)	85.0	
Heating Capacity(kW)	95.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm900W2/NaB-H	
Cooling Capacity(kW)	90.0	
Heating Capacity(kW)	100.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm950W3/NaB-H	
Cooling Capacity(kW)	96.0	
Heating Capacity(kW)	108.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1008W3/NaB-H	
Cooling Capacity(kW)	101.0	
Heating Capacity(kW)	113.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1065W3/NaB-H	
Cooling Capacity(kW)	108	
Heating Capacity(kW)	121.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1130W3/NaB-H	
Cooling Capacity(kW)	113.0	
Heating Capacity(kW)	126.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1180W3/NaB-H	
Cooling Capacity(kW)	118.0	
Heating Capacity(kW)	131.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1235W3/NaB-H	
Cooling Capacity(kW)	125	
Heating Capacity(kW)	140	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1300W3/NaB-H	
Cooling Capacity(kW)	130.0	
Heating Capacity(kW)	145.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1350W3/NaB-H	
Cooling Capacity(kW)	135.0	
Heating Capacity(kW)	150.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1405W4/NaB-H	
Cooling Capacity(kW)	141.0	
Heating Capacity(kW)	158.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1456W4/NaB-H	
Cooling Capacity(kW)	146.0	
Heating Capacity(kW)	163.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1512W4/NaB-H	
Cooling Capacity(kW)	153	
Heating Capacity(kW)	171.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1570W4/NaB-H	
Cooling Capacity(kW)	155.0	
Heating Capacity(kW)	176.5	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1650W4/NaB-H	
Cooling Capacity(kW)	163.0	
Heating Capacity(kW)	181.5	

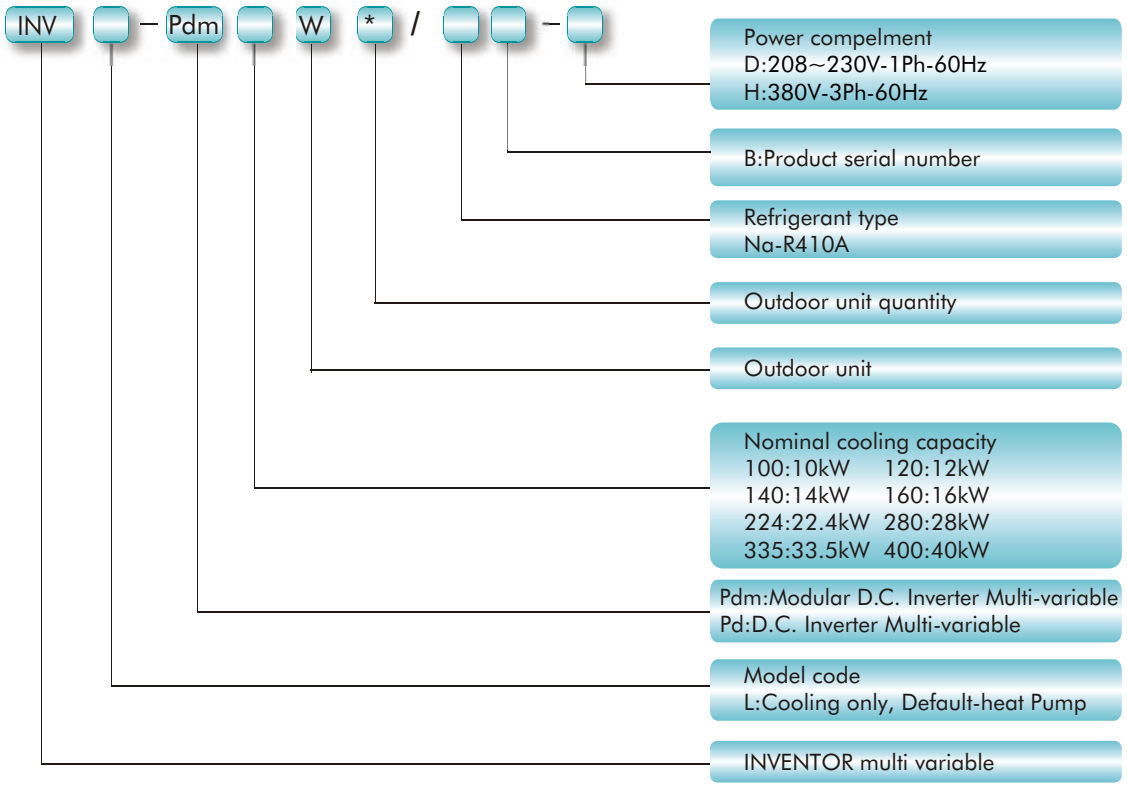
	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1700W4/NaB-H	
Cooling Capacity(kW)	170	
Heating Capacity(kW)	190	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1750W4/NaB-H	
Cooling Capacity(kW)	175.0	
Heating Capacity(kW)	195.0	

	D.C.Inverter Multi-variable outdoor unit	Appearance
Model	INV-Pdm1800W4/NaB-H	
Cooling Capacity(kW)	180.0	
Heating Capacity(kW)	200.0	

Conversion Formula: 1kW=3412Btu/h

a. Nomenclature



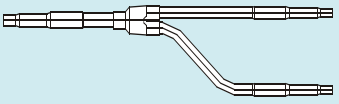
Example: INV-Pdm1700W4/NaB-H:D .C.Inverter Multi-variable outdoor unit of INVENTOR,with 4 outdoor units and the nominal cooling capacity is 170kW. The power supply is 380V-3Ph-60Hz.

b. Rated Conditions

Cooling : Indoor air temperature 27 ℃ (80.6 ℉)DB/19 ℃ (66.2 ℉)
Outdoor air temperature 35 ℃ (95 ℉)DB/24 ℃ (75.2 ℉)

Heating : Indoor air temperature 20 ℃ (68 ℉)DB/1 ℃ (59 ℉)
Outdoor air temperature 7 ℃ (44.6 ℉)DB/1 ℃ (42.8 ℉)

2.2 Branching Joints

	Model name	Indoor unit capacity code total X	Appearance
Y-Type branching joint	FQ01A/A	X≦200	
	FQ01B/A	200＜X≦300	
	FQ02/A	300＜X≦700	

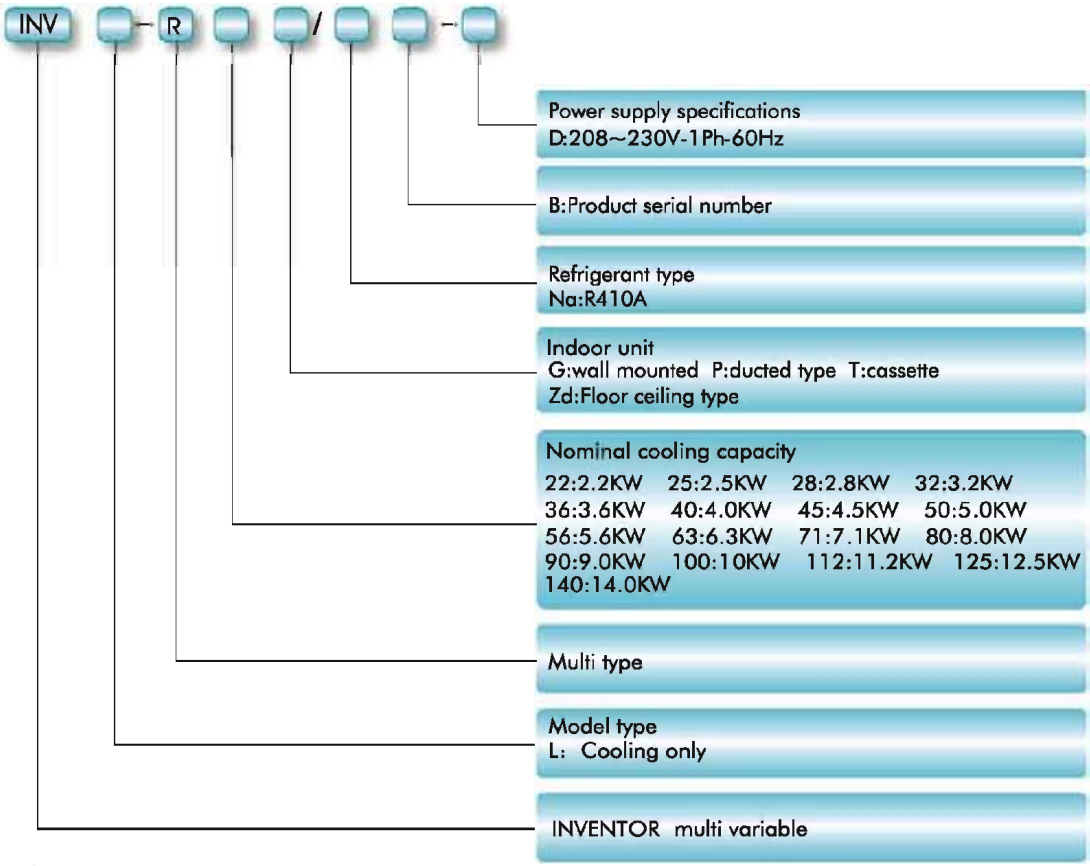
2.3 Indoor Unit

Type	Appearance	Model Name	Capacity Code	Cooling Capacity(kW)	Heating Capacity(kW)
4-way Air Discharge Cassette Type		INV-R28T/Na-D	28	2.8	3.2
		INV-R36T/Na-D	36	3.6	4.0
		INV-R56T/Na-D	56	5.6	6.3
		INV-R71T/Na-D	71	7.1	8.0
		INV-R90T/Na-D	90	9.0	10.0
		INV-R112T/Na-D	112	11.2	12.5
		INV-R125T/Na-D	125	12.5	13.5
		INV-R140T/Na-D	140	14.0	14.5
		INVL-R28T/Na-D	28	2.8	--
		INVL-R36T/Na-D	36	3.6	--
		INVL-R56T/Na-D	56	5.6	--
		INVL-R71T/Na-D	71	7.1	--
		INVL-R90T/Na-D	90	9.0	--
		INVL-R100T/Na-D	100	10.0	--
		INVL-R112T/Na-D	112	11.2	--
		INVL-R125T/Na-D	125	12.5	--
		INVL-R140T/Na-D	140	14.0	--
Conceded Duct Standard Type		INV-R22P/NaB-D	22	2.2	2.5
		INV-R25P/NaB-D	25	2.5	3.0
		INV-R28P/NaB-D	28	2.8	3.2
		INV-R36P/NaB-D	36	3.6	4.0
		INV-R45P/NaB-D	45	4.5	5.0
		INV-R56P/NaB-D	56	5.6	6.3
		INV-R71P/NaB-D	71	7.1	8.0
		INV-R90P/NaB-D	90	9.0	10.0
		INV-R112P/NaB-D	112	11.2	12.5
		INV-R140P/NaB-D	140	14.0	15.0
		INVL-R22P/NaB-D	22	2.2	--
		INVL-R25P/NaB-D	25	2.5	--
		INVL-R28P/NaB-D	28	2.8	--
		INVL-R36P/NaB-D	36	3.6	--
		INVL-R45P/NaB-D	45	4.5	--
		INVL-R56P/NaB-D	56	5.6	--
		INVL-R71P/NaB-D	71	7.1	--
		INVL-R90P/NaB-D	90	9.0	--
		INVL-R112P/NaB-D	112	11.2	--
		INVL-R140P/NaB-D	140	14.0	--
Wall-mounted Type		INV-R22G/NaG-D	22	2.2	2.5
		INV-R28G/NaG-D	28	2.8	3.2
		INV-R36G/NaG-D	36	3.6	4.0
		INV-R45G/NaG-D	45	4.5	5.0
		INV-R50G/NaG-D	50	5.0	5.8
		INV-R56G/NaG-D	56	5.6	6.3
		INV-R63G/NaG-D	63	6.3	7.0
		INV-R71G/NaG-D	71	7.1	8.8
		INVL-R22G/NaG-D	22	2.2	--
		INVL-R28G/NaG-D	28	2.8	--
		INVL-R36G/NaG-D	36	3.6	--
		INVL-R45G/NaG-D	45	4.5	--
		INVL-R50G/NaG-D	50	5.0	--
		INVL-R56G/NaG-D	56	5.6	--
		INVL-R63G/NaG-D	63	6.3	--
		INVL-R71G/NaG-D	71	7.1	--

Type	Appearance	Model Name	Capacity Code	Cooling Capacity(kW)	Heating Capacity(kW)
Floor ceiling Type		INV-R28Zd/NaB-D	28	2.8	3.2
		INV-R36Zd/NaB-D	36	3.6	4.0
		INV-R50Zd/NaB-D	50	5.0	5.8
		INV-R71Zd/NaB-D	71	7.1	8.0
		INV-R90Zd/NaB-D	90	9.0	10.0
		INV-R112Zd/NaB-D	112	11.2	12.5
		INV-R125Zd/NaB-D	125	12.5	13.5
		INVL-R28Zd/NaB-D	28	2.8	--
		INVL-R36Zd/NaB-D	36	3.6	--
		INVL-R50Zd/NaB-D	50	5.0	--
		INVL-R71Zd/NaB-D	71	7.1	--
		INVL-R90Zd/NaB-D	90	9.0	--
		INVL-R112Zd/NaB-D	112	11.2	--
		INV-R125Zd/NaB-D	125	12.5	--

Conversion Formula: 1kW=3412Btu/h

a. Nomenclature



Example:

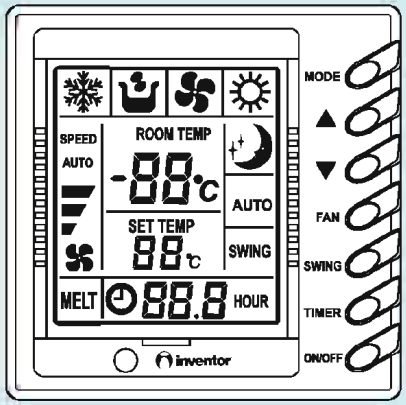
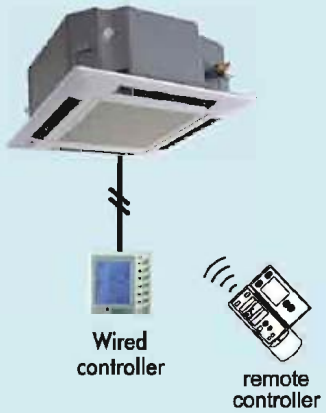
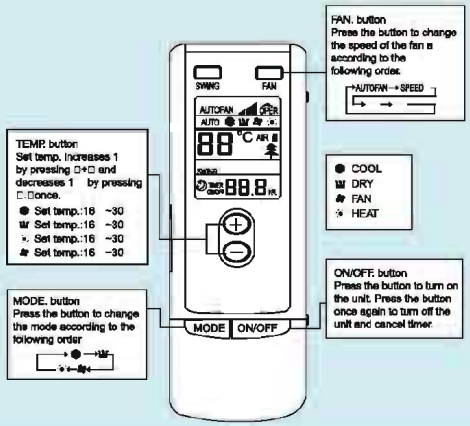
INV — R22P/Na-D: A ducted type indoor unit of INVENTOR, and the nominal cooling capacity is 2.2kw. It the R410A product, and can connected to D.C. Inverter Multi-variable outdoor unit. The power supply is 208~230V-1Ph-60Hz.

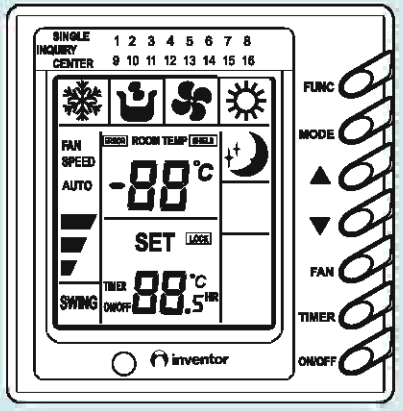
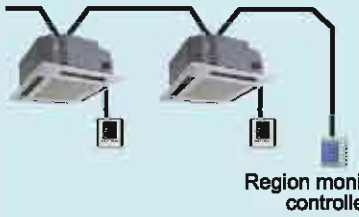
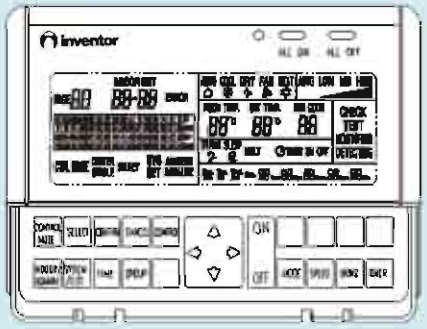
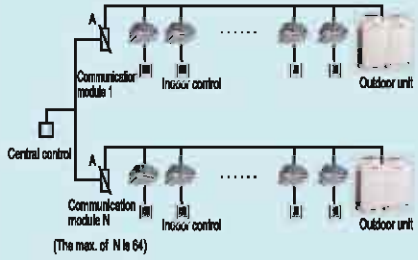
b. Rated Conditions

Cooling : Indoor air temperature 27 ℃ (80.6 ℉)DB/19 ℃ (66.2 ℉)
Outdoor air temperature 35 ℃ (95 ℉)DB/24 ℃ (75.2 ℉)

Heating : Indoor air temperature 20 ℃ (68 ℉)DB/1 ℃ (59 ℉)
Outdoor air temperature 7 ℃ (44.6 ℉)DB/1 ℃ (42.8 ℉)

2.4 Controller

Name	Model Name	Appearance	Application	Function
Wired controller	Z60151F Z60351F Z63151F Z63351F			• Start / Stop • mode Changing • Temperature setting • Air flow changing • Timing setting • Self-diagnosis function Display codes of trouble. • Control by 2 remote control - lers is available. Two remote controllers can be connected to one indoor unit. The indoor unit can be separately operated from the isolated places.
remote controller	Y512A1			• Start / Stop • mode Changing • Temperature setting • Air flow changing • Timing setting

Name	Model Name	Appearance	Application	Function
Region controller	ZJA011 (MC207006)		A.  Region monitoring controller B.  Region wired controller	**Region Controller has two functions.** •01 Function mode: **Region monitoring controller** •Individual control up to 16 indoor units. •Central control up to 16 indoor units •Each outdoor can only connect one Region monitoring controller. •two control mode Individual control mode Central control mode •02 Function mode: **Region wired controller** •It can replace the No.1-16 selected wired controllers to uniformly set or control the indoor units.
Centralized controller	ZJ7011 (MC207004)			•Individual control up to 1024 indoor units. •Up to 64 outdoor units are connectable. •4 type central control setting to inhibit individual operation by remote controller can be selected. •Three control mode: **Individual control mode** **Central control mode** **Select control mode** •Each indoor unit can set Timer On/Off time by central, single or select control. Both Timer On and Timer Off can be set at the same time, and it is available that set the timer which days of the 7 days from Sunday to Saturday works.

3 BASIC SYSTEM CONFIGURATION

System Legend (ex.)

Model name of outdoor unit:

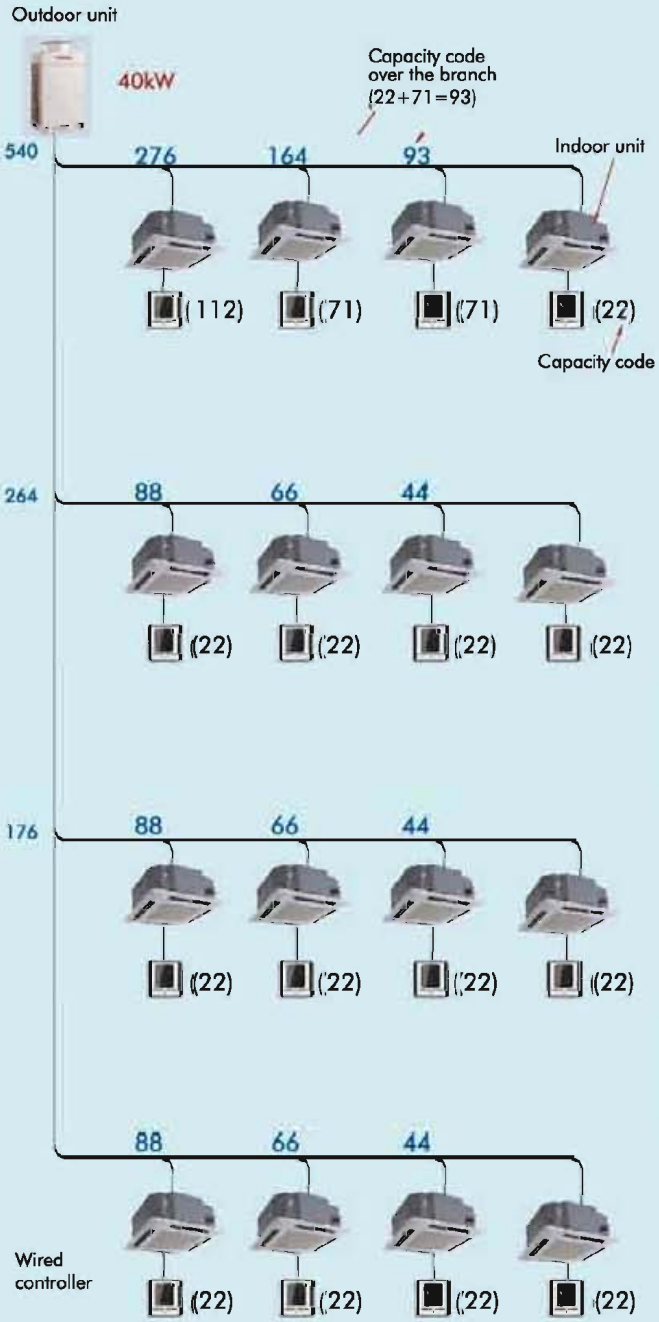
INV-Pdm400W/NaB-H

16 units

Allowed capacity code of indoor unit:

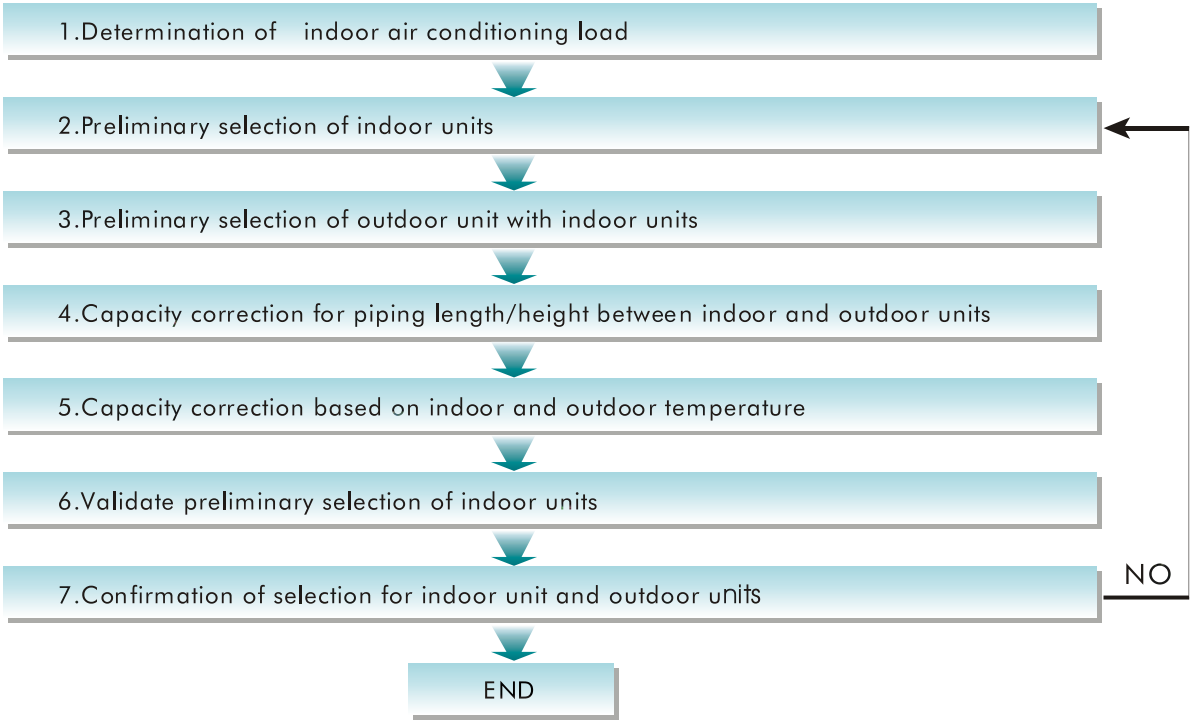
Min. : 20.0 Max. : 54.0

Capacity code
Total 540
No. of total units
16



4 EQUIPMENT SELECTION PROCEDURE

4.1 Selection Flow Chart



4.2 Combination Conditions for Indoor Unit and Outdoor Unit

(1) The capacity code of indoor units = the nominal cooling capacity (W)
(2) For outdoor unit, maximum No. of connectable indoor units and total capacity code of indoor units are decided.

Model name of outdoor unit	Capaicity code of outdoor unit	Max. No.of indoor units	Total capacity code of indoor units
INV-Pdm224W/NaB-H	224	14	112 to 308
INV-Pdm280W/NaB-H	280	16	140 to 380
INV-Pdm335W/NaB-H	335	16	160 to 454
INV-Pdm400W/NaB-H	400	16	196 to 540
INV-Pdm450W/NaB-H	450	16	225 to 607
INV-Pdm504W2/NaB-H	504	16	252 to 680
INV-Pdm560W2/NaB-H	560	32	280 to 756

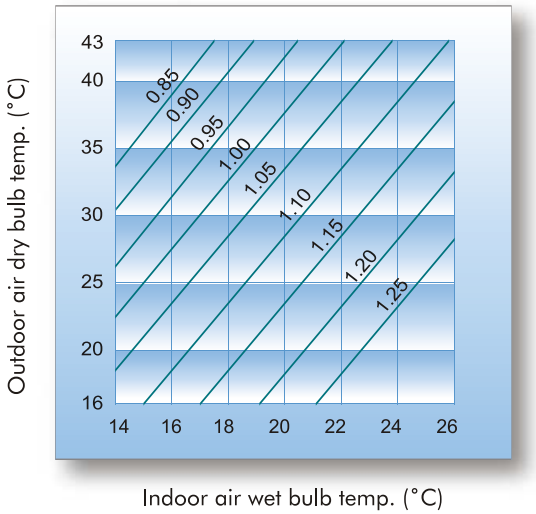
Model name of outdoor unit	Capaicity code of outdoor unit	Max. No.of indoor units	Total capacity code of indoor units
INV-Pdm615W2/NaB-H	615	32	307 to 830
INV-Pdm670W2/NaB-H	670	32	335 to 904
INV-Pdm730W2/NaB-H	730	32	365 to 985
INV-Pdm785W2/NaB-H	785	32	392 to 1059
INV-Pdm850W2/NaB-H	850	32	425 to 1147
INV-Pdm900W2/NaB-H	900	32	450 to 1350
INV-Pdm950W3/NaB-H	950	48	475 to 1282
INV-Pdm1008W3/NaB-H	1008	48	504 to 1360
INV-Pdm1065W3/NaB-H	1065	48	532 to 1437
INV-Pdm1130W3/NaB-H	1130	48	565 to 1532
INV-Pdm1135W3/NaB-H	1135	48	567 to 1532
INV-Pdm1405W4/NaB-H	1405	54	702 to 1896
INV-Pdm1456W4/NaB-H	1456	54	728 to 1965
INV-Pdm1512W4/NaB-H	1512	54	728 to 1965
INV-Pdm1570W4/NaB-H	1570	54	756 to 2119
INV-Pdm1650W4/NaB-H	1650	54	825 to 2227
INV-Pdm1700W4/NaB-H	1700	54	850 to 2295
INV-Pdm1750W4/NaB-H	1750	54	875 to 2362
INV-Pdm1800W4/NaB-H	1800	54	900 to 2430

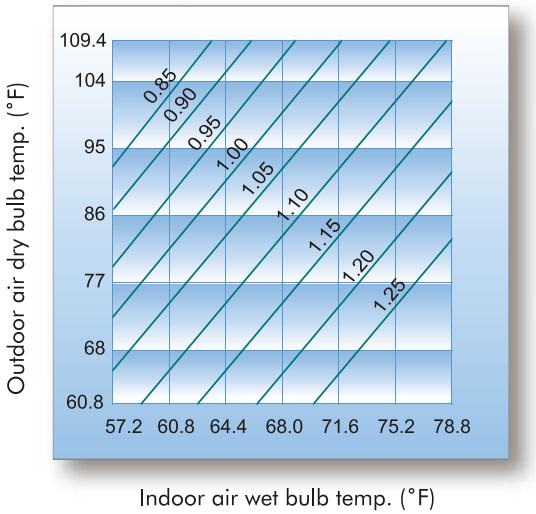
4.3 Cooling/Heating Capacity Characteristics

4.3.1 Cooling Capacity Calculation Method

Required cooling capacity=cooling capacity×Factor①×Factor②kW

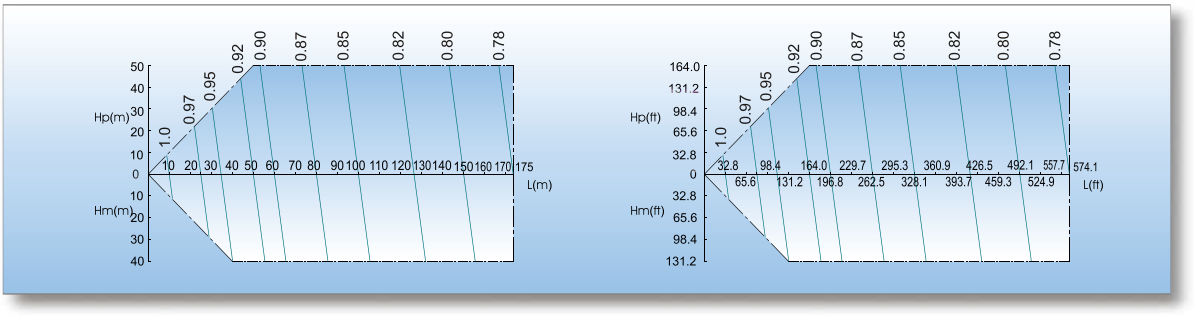
① Ambient Temperature vs. Capacity Correction Value





② **Connecting Pipe Length and Height Difference Between Indoor and Outdoor Units vs.Capacity Correction Value**

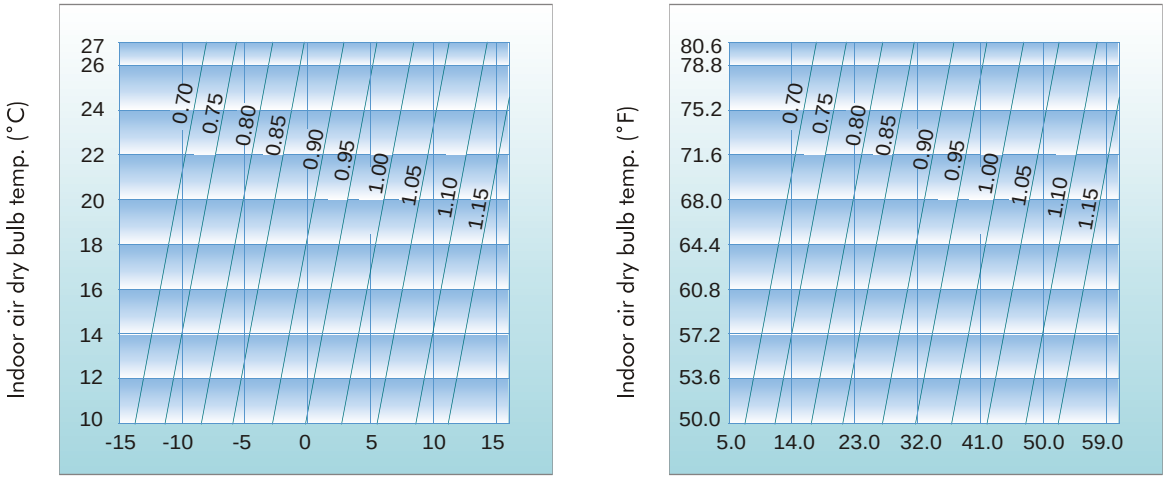
- Hp: Height Difference Between Indoor and Outdoor Units(Outdoor unit higher)
- Hm: Height Difference Between Indoor and Outdoor Units(Outdoor unit lower)
- L:Equivalent pipe length



4.3.2 Heating Capacity Calculation Method

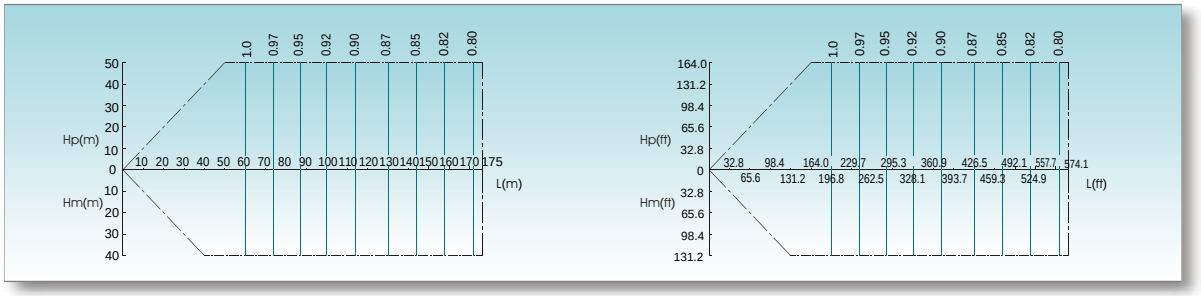
Required heating capacity= Heating capacity × Factor ①× Factor ②

① **Ambient Temperature vs. Capacity Correction Value**



② **Connecting Pipe Length Between Indoor and Outdoor Units vs. Capacity Correction Value**

- Hp: Height Difference Between Indoor and Outdoor Units（Outdoor unit higher）
- Hm: Height Difference Between Indoor and Outdoor Units（Outdoor unit lower）
- L: Equivalent pipe length



4.3.3 Capacity Calculation for Each Indoor Unit

Capacity for each indoor unit

$$= \text{Capacity after correction of outdoor uni} \times \frac{\text{Required standard capacity of indoor unit}}{\text{Total value of standard indoor unit capacity}}$$

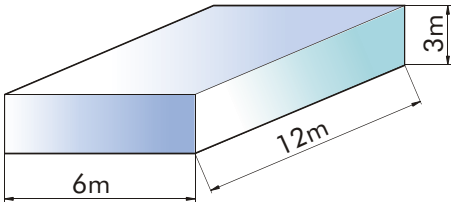
4.3.4 Operating temperature range

Mode \ Range	Outdoor temperature range ℃(℉)
Cooling	10~48℃(50~118. 4℉)
Heating	-20 ~27℃(-4~81℉)

4.4 Example of Equipment Selection

4.4.1 Overview of Building Model

<Outside view>



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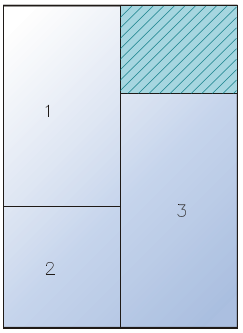


Non-air conditioning zone

Steel frame, reinforced concrete building,
ten stories above ground.

An apartment area : 72m^2

Outdoor unit is installed on the balcony

Design indoor conditions

Cooling : 27.0 ℃ (80.6 ℉)/19.0 ℃ (66.2 ℉)DB/WB

Design outdoor conditions

Cooling : 35 ℃ (95 ℉)DB (Standard condition)

4.4.2 Selection Criteria for Each Apartment

Outdoor capacity exactly matches the total indoor capacity.

Total indoor HP = Outdoor unit HP

Indoor : 1.5 HP + 1HP + 2 HP = 4.5 HP

Outdoor : 5 HP (Same capacity)

4.4.3 Procedure and Result of Equipment Selection

a. Procedure of Equipment Selection

① Calculate cooling for every rooms.

② Select an indoor unit to match the cooling load for every room.

③ Choose a tentative outdoor that will match with the indoor units. Perform capacity correction based on the pipe length, system lift, indoor set temperature, outdoor temperature. Then, make sure the corrected system cooling capacity satisfies the cooling load.

b Equipment Selection and Capacity Check

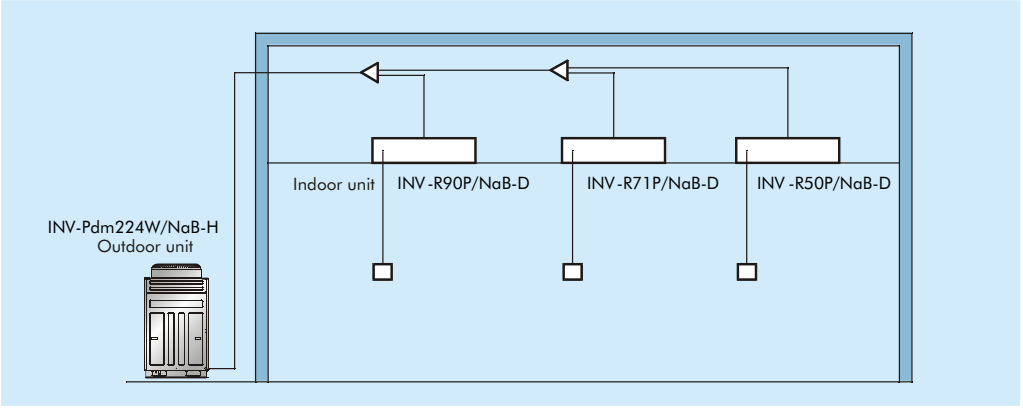
Air conditioning load			Equipment selection					
Floor	Room No.	Indoor cooling load (kW)	Indoor unit			Outdoor unit		
			Model	Capacity (kW)		Model	Capacity (kW)	
				Cooling	Heating		Cooling	Heating
5F	1	8.5	INV-R90P/NaB-D	9.0	10.0	INV-Pdm224W /NaB-H	21.1	23.8
	2	6.9	INV-R71P/NaB-D	7.1	8.0			
	3	4.5	INV-R50P/NaB-D	5.0	5.8			

Conversion Formula: 1kW=3412Btu/h

Piping distance				Capacity correction		Capacity check after correction		
Floor	Room No.	Equivalent length (m)	Height Pipe difference (m)	correction x temp. correction		Capacity		Judgment
						Capacity (kW)		
				Cooling	Heating	Cooling	Heating	
5F	1	30	0	0.95	1	8.55	10.0	good
	2					6.75	8.0	
	3					4.75	5.8	

Conversion Formula: 1kW=3412Btu/h

c. Schematic Diagram



5 REFRIGERANT PIPING DESIGN

5.1 Warning on Refrigerant Leakage

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.
The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.
Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).
In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

5.1.1 The Concentration Limit of R410A Which is Used in Multi Air Conditioners

The concentration limit of R410A which means the concentration limit of R410A that can be control by emergency measures to prevent human body from harming. The refrigerant concentration unit is kg/m3 (Which means the weight of refrigerant per m^3 air).

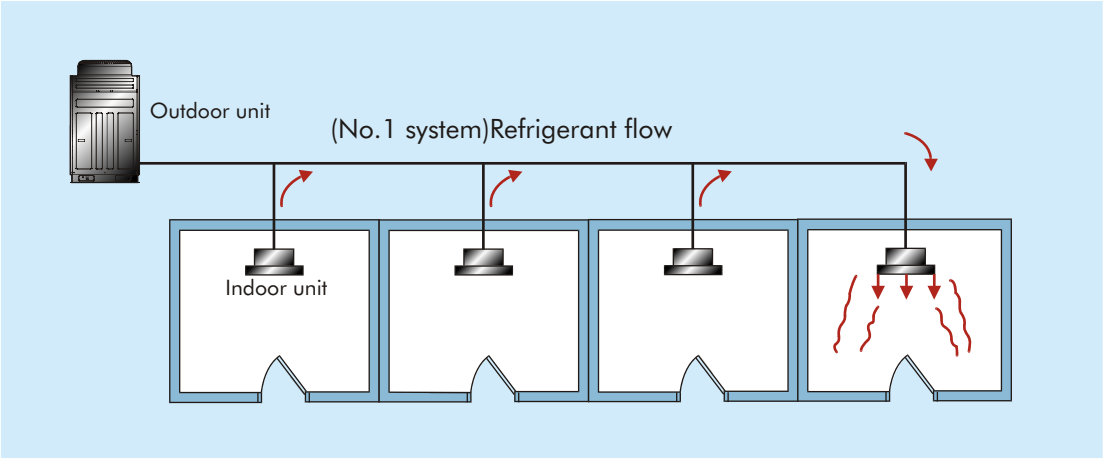


Fig.5.1

5.1.2 Check of Refrigerant Leakage

Calculate the refrigerant concentration as follows:

¨ ç**Calculate the Amount of Refrigerant of Each Refrigeration System**

[The amount of refrigerant of each system of outdoor unit] + [Additional charged amount at field installation]
Refrigerant amount of the outdoor unit at ex-factory — According to the liquid tube length and diameter

= **System total amount of refrigerant(kg)**

NOTE:

When single refrigeration system is consists of several independent refrigeration circuit, figure out the total refrigerant amount by each independent refrigerant circuit
For the amount of charge in this example:

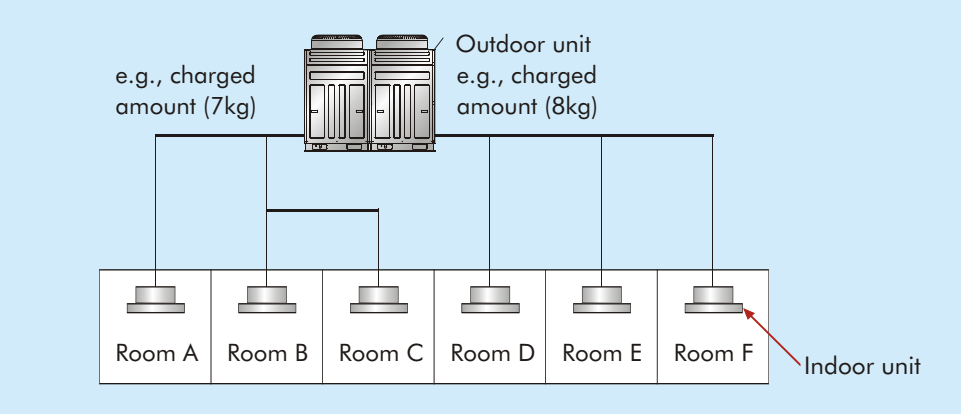


Fig.5.2

The possible amount of leaked refrigerant gas in rooms A, B and C is 7kg.
The possible amount of leaked refrigerant gas in rooms D, E and F is 8kg.

② **Calculate the Minimum Room Volume are as Follows**

- No partition (shaded portion)

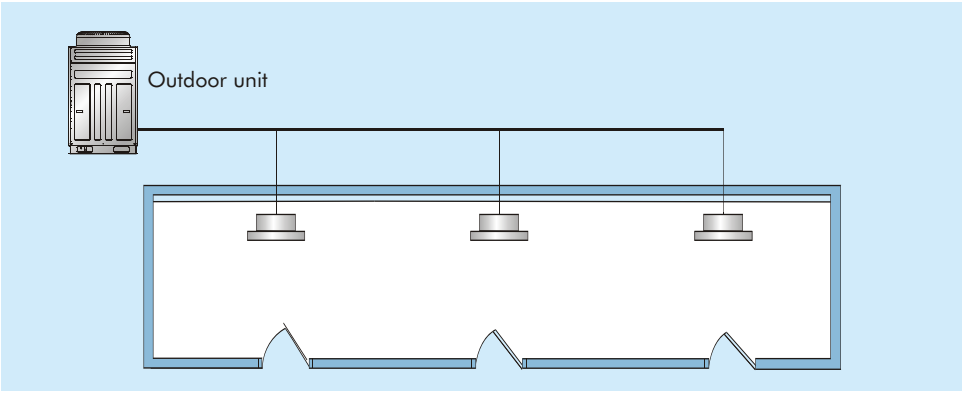
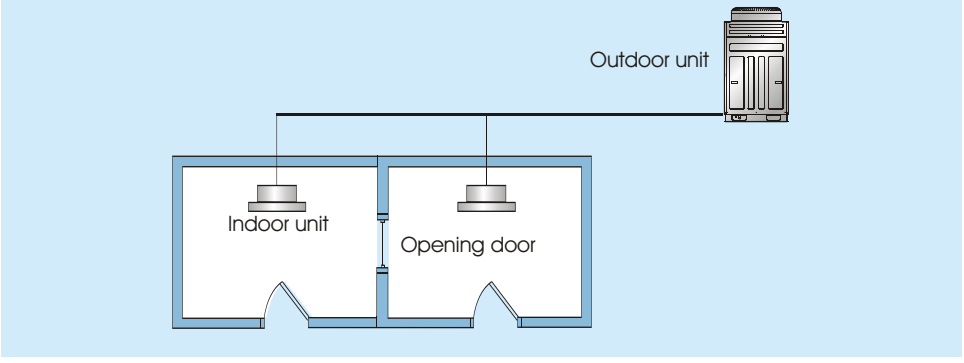


Fig.5.3

- When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas(opening with a door,or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).



- If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object.

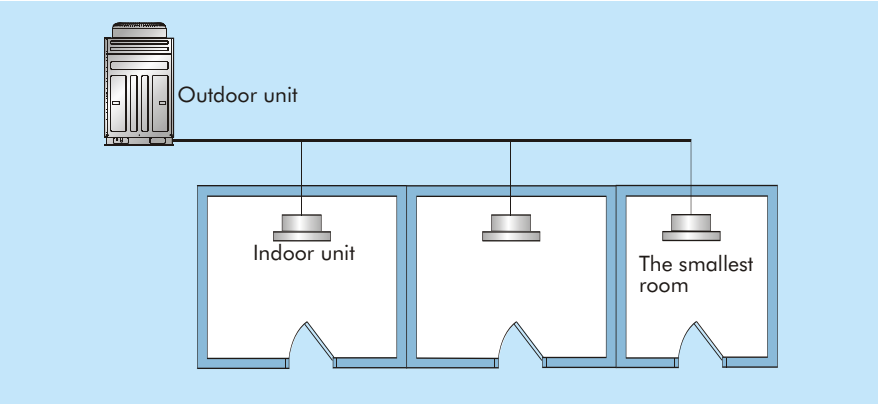


Fig.5.5

The concentration limit of R410A which is used in multi air conditioners is 0.3kg/m

③ Use the results of calculations ① and ② to calculate the refrigerant concentration:
The concentration is as given below.

$$\frac{\text{Total amount of refrigerant(kg)}}{\text{Min.volume of the indoor unit installed room}(m^3)} \leq \text{Concentration limit } (kg/m^3)$$

5.1.3 Measures When The Refrigerant Concentration Limit is Exceeded(JRA-GL 13-1998)

When the refrigerant concentration exceeds the density limit value relative to indoor volume, take proper actions according to following key points:

- **Method 1:** Set up an opening for efficient air exchange

opening with a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door

- **Method 2:** Decrease the total amount of refrigerant in refrigerant equipment

Shorten the Length of Refrigerant Pipe

Install the outdoor unit closer to the indoor unit and shorten the length of refrigerant pipe, hence to decrease the total amount of refrigerant in refrigerant equipment.

Decrease the Capacity of Outdoor Unit

Split the outdoor unit into multiple sets, thus decreasing the capacity of each outdoor unit to which one refrigerant system corresponds and hence to decrease the filling amount of refrigerant.

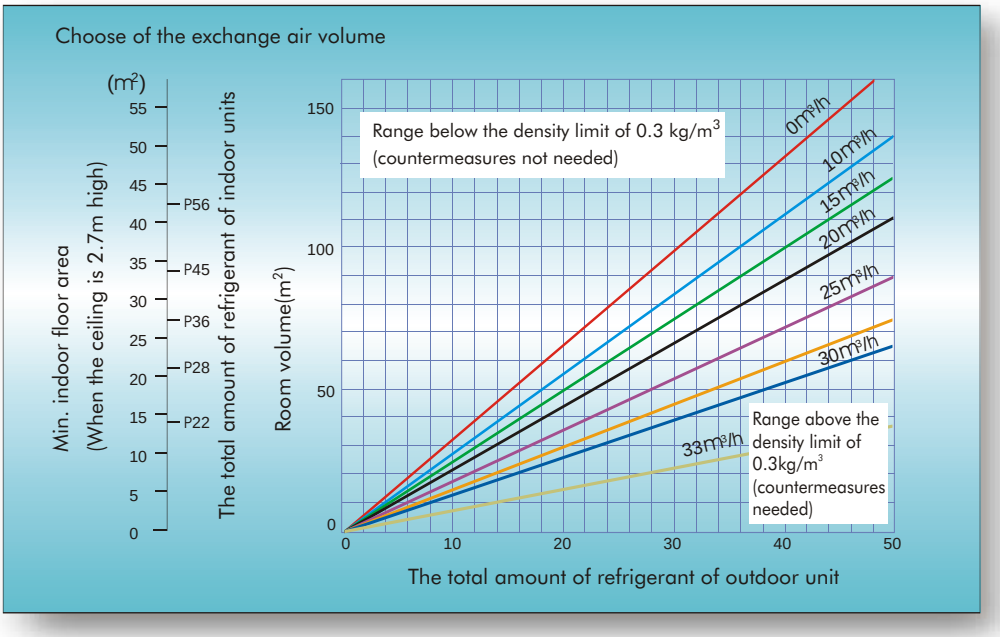
For example: If one 10HP system is split into 2 sets of 5HP systems, the amount of refrigerant in one refrigerant system may be half decreased approximately.

- **Method 3:** Set up an air exchange system

An air exchange system can be set to avoid too high concentration of refrigerant in event of refrigerant leakage. The air exchange system includes twp types, i.e. external air import and air discharge. From the property of refrigerant, it is recommended to adopt the external air import.

Exchanging Air Volume

According to the total amount of refrigerant of refrigerant equipment and the room volume, air exchange volume should be greater than the volume showed in Fig.5.6.



Detector and Interlink

In principle, the air exchange system shall always work normally no matter the air conditioner is used or any person stays in the room. If it is impossible to realize long-term working, please use a detector system to activate the air exchange system upon leakage of refrigerant.

Shown in Fig. 5.7 is the air exchange system in long-term working. Shown in Fig. 5.8 is the detector interlink system.

Note:

(a) In order to avoid malfunction of air exchange system, please do not choose the range showed in oblique line in Fig. 5.6 even though equipped with air exchange system. If entering into this range, should set effective air exchange port, expand room volume or decrease the amount of outdoor unit, change the piping length in order to decrease total refrigerant amount, in principle according to method 1 and 2.

(b) Where an air exchange system is provided but it is impossible to take Method 1 or Method 2 when the refrigerant concentration is within the range indicated by the oblique line in Fig. 5.6, please use other means independent from air exchange system to ensure safety. In detail, we can set a refrigerant cutoff valve that can be activated by the detector upon refrigerant leakage and as well, set an alarm system that can notify the indoor person. The detector here is different from the detector in aforementioned air exchange system. Shown in Fig. 5.9 is the status that a refrigerant cutoff valve is set.

(c) To set an air exchange system, please ensure to leave an efficient air exchange gap (e.g. gap below the door) at the lowest part of the room.

(d) For connection of pipes within living area, please make sure to comply with JIS specification and perform thorough airtight test after the work is completed. Additionally, please ensure that the pipe is installed with shockproof device to avoid damage due to earthquake or the other external forces. (But on axial direction, a leeway shall be left to eliminate the stress caused by temperature variation).

Long Term Working Air Exchange System

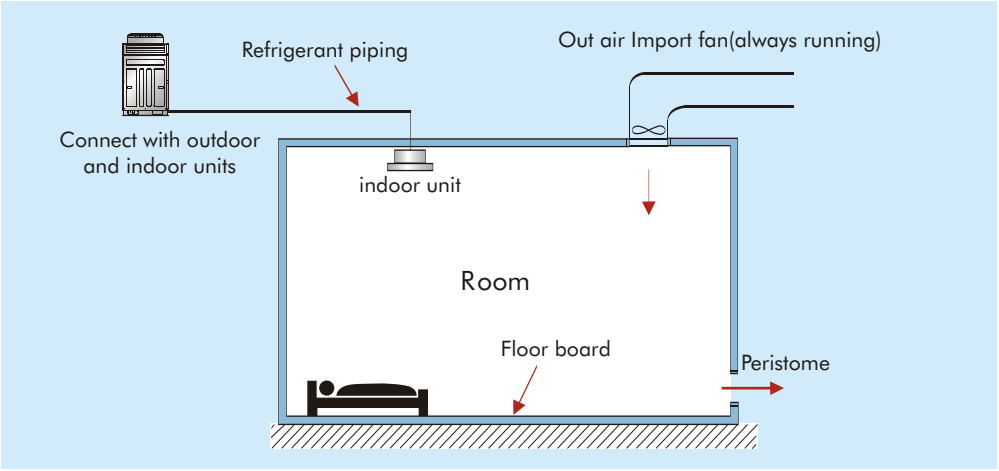


Fig.5.7

Detector Interlink System

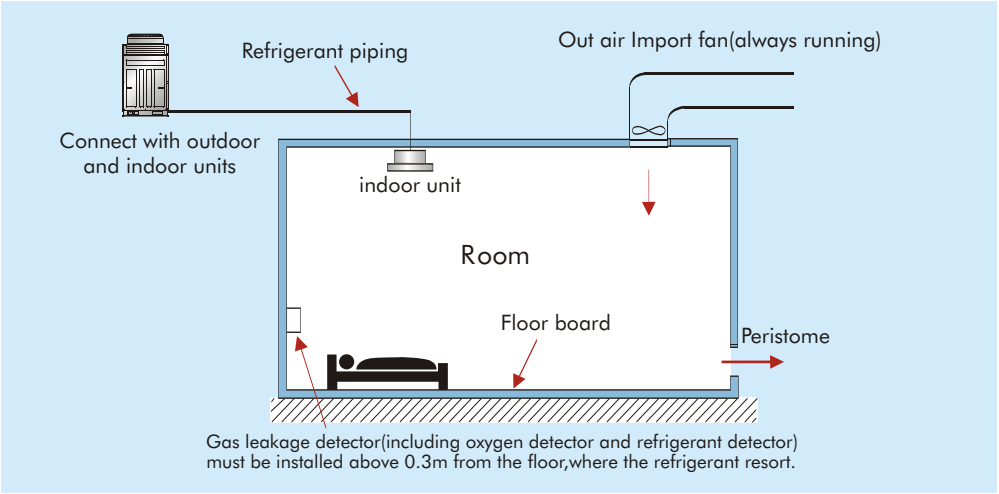


Fig.5.8

Position of Long Term Running Ventilation System and Refrigerant Cut-off Valve

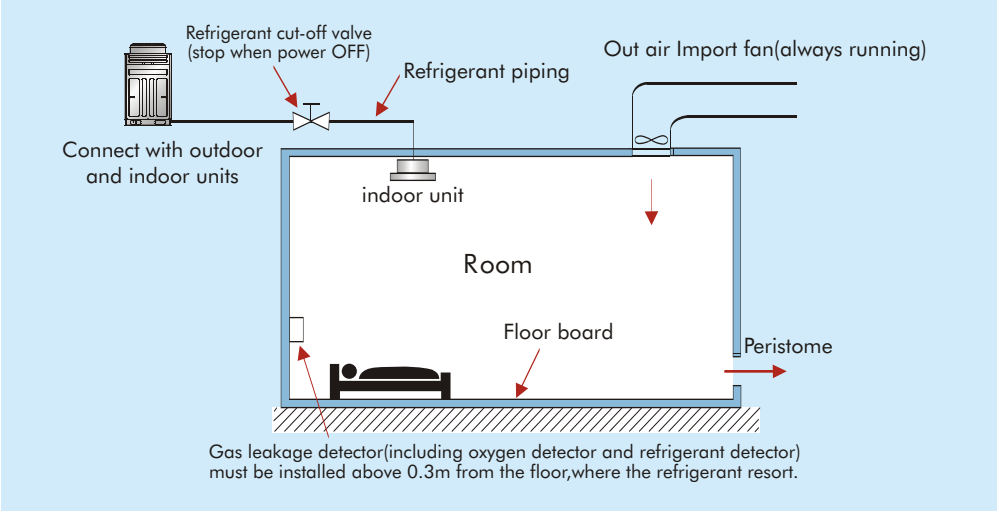
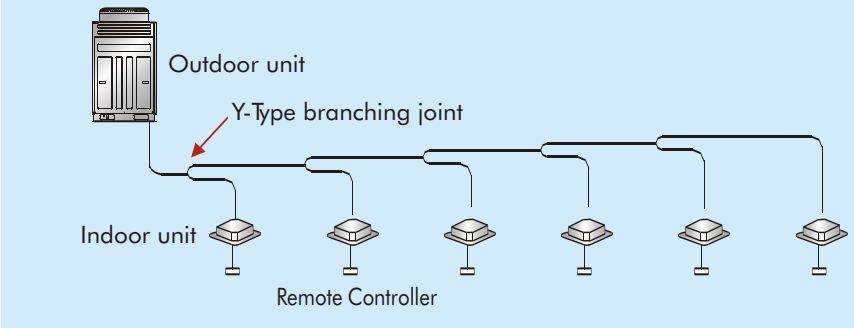
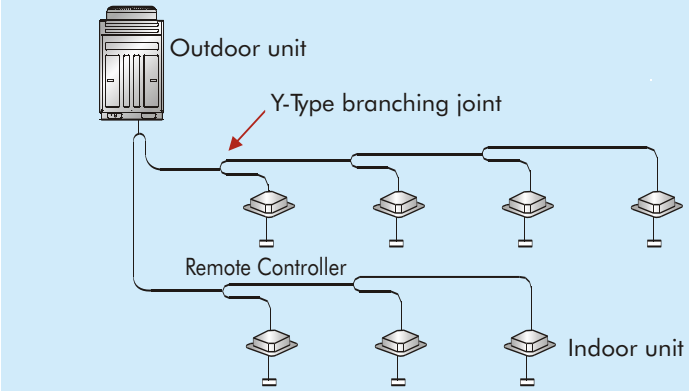


Fig.5.9

5.2 Free Branching System

Line branching system





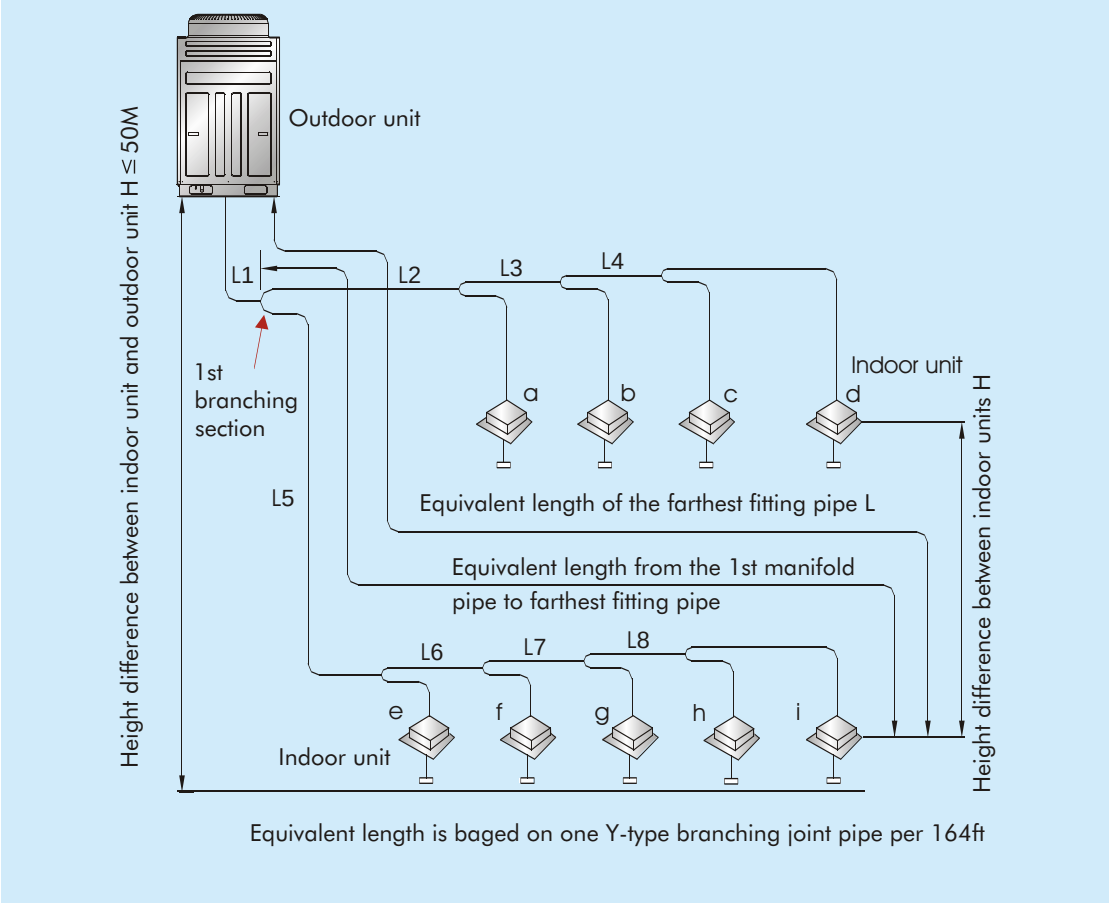
5.3 Allowable Length/Height Difference of Refrigerant Piping

Units with capacity between 20kW and 60 kW

		Allowable Value	Fitting Pipe
Total length (actual length) of fitting		300m	$L_1+L_2+L_3+L_4+L_5+L_6+a+b+\ldots+i+j$
Length of farthest fitting	Actual length	100m	$L_1+L_3+L_4+L_5+L_6+j$
	Equivalent length	125m	
length from the first branch to the furthest piping		40m	$L_3+L_4+L_5+L_6+j$
Height difference between outdoor unit and indoor unit	Outdoor unit at upper	50m	—
	Outdoor unit at lower	40m	—
Height difference between indoor units（m）		15m	—

Units with capacity of 60kW or more (fitting pipe mode is as above)

		Allowable Value	Fitting Pipe
Total length (actual length) of fitting		500m	$L_1+L_2+L_3+L_4+\ldots+L_8+a+b+\ldots+i$
Length of farthest fitting	Actual length	150m	$L_1+L_5+L_6+L_7+L_8+i$
	Equivalent length	175m	
length from the first branch to the furthest piping		40m	$L_5+L_6+L_7+L_8+i$
Height difference between outdoor unit and indoor unit	Outdoor unit at upper	50m	—
	Outdoor unit at lower	40m	—
Height difference between indoor units（m）		15m	—



5.4 Selection of Refrigerant Piping

5.4.1 Size of Main Pipe

According to the total capacity code of the outdoor unit, size of main pipe as follows:

The total capacity code of the outdoor units C	Gas pipe(mm/Inch)	Liquid pipe(mm/Inch)
C≤50	Φ12.7 / 1/2	Φ6.35 / 1/4
50<C≤70	Φ15.9 / 5/8	Φ9.52 / 3/8
70<C≤180	Φ19.05 / 3/4	Φ9.52 / 3/8
180<C≤280	Φ22.2 / 7/8	Φ9.52 / 3/8
280<C≤450	Φ28.6 / 1	Φ12.7 / 1/2
450<C≤615	Φ28.6 / 9/8	Φ15.9 / 5/8
615<C≤670	Φ34.9 / 11/8	Φ15.9 / 5/8
670<C≤950	Φ34.9 / 11/8	Φ19.05 / 3/4
950<C≤1350	Φ41.3 / 13/8	Φ19.05 / 3/4
1050<C≤1570	Φ44.5 / 15/8	Φ22.2 / 7/8
1570<C≤1800	Φ54.1 / 17/8	Φ25.4 / 1

5.4.2 Pipe Size Between Branching Joints

If 3 outdoor units are parallel connected, piping between module connecting sub-assies should be taken into consideration. Dimension of piping between module connecting sub-assies is decided by total capacity of upstream modules.

The total capacity code of the outdoor units C	Gas pipe(mm/Inch)	Liquid pipe(mm/Inch)
C≤280	Φ22.2 / 7/8	Φ9.52 / 3/8
280<C≤450	Φ28.6 / 9/8	Φ12.7 / 1/2
450<C≤670	Φ28.6 / 9/8	Φ15.9 / 5/8
670<C≤950	Φ34.9 / 11/8	Φ19.05 / 3/4
950<C≤1350	Φ41.3 / 13/8	Φ19.05 / 3/4
1350<C≤1600	Φ44.5 / 15/8	Φ22.2 / 7/8
1600<C	Φ54.1 / 17/8	Φ25.4 / 1

According to the total capacity code of indoor units units at downstream side(take the total capacity code of outdoor unit as while the total capacity code of indoor units exceed the outdoor unit pipe size between branching joints as follows:

The total capacity code of the outdoor units C	Gas pipe(mm/Inch)	Liquid pipe(mm/Inch)
C≤50	Φ12.7 / 1/2	Φ6.35 / 1/4
50<C≤70	Φ15.9 / 5/8	Φ9.52 / 3/8
70<C≤180	Φ19.05 / 3/4	Φ9.52 / 3/8
180<C≤300	Φ22.2 / 7/8	Φ9.52 / 3/8
300<C≤450	Φ28.6 / 9/8	Φ12.7 / 1/2
450<C≤670	Φ28.6 / 9/8	Φ15.9 / 5/8
670<C≤950	Φ34.9 / 11/8	Φ19.05 / 3/4
950<C≤1350	Φ41.3 / 13/8	Φ19.05 / 3/4
1350<C≤1600	Φ44.5 / 15/8	Φ22.2 / 7/8
1600<C≤2100	Φ54.1 / 17/8	Φ25.4 / 1

5.4.3 Piping of Indoor Unit

Capacity rank of indoor unit C	Gas pipe (mm/Inch)	Liquid pipe (mm/Inch)
C<36	Φ9.52/ 3/8	Φ6.35/ 1/4
36≤C≤50	Φ12.7/ 1/2	Φ6.35/ 1/4
50<C≤140	Φ15.9/ 5/8	Φ9.52/ 3/8

5.4.4 Selection for Branching Section

	Total capacity code of indoor unit	Model name
Y-type branching joint	X≤200	FQ01A/A
	200<C≤300	FQ01B/A
	300<C≤700	FQ02/A

5.5 Charging Requirement with Additional Refrigerant

5.5.1 Refrigerant in the System When Shipped from the Factory

Model name	INV-Pdm224W/NaB-H	INV-Pdm280W/NaB-H	INV-Pdm335W/NaB-H	INV-Pdm400W/NaB-H
Refrigerant amount charged in factory	12	13	15	16
Model name	INV-Pdm450W/NaB-H	INV-Pdm504W2/NaB-H	INV-Pdm560W2/NaB-H	INV-Pdm615W2/NaB-H
Refrigerant amount charged in factory	17	12+13	13+13	13+15
Model name	INV-Pdm670W2/NaB-H	INV-Pdm730W2/NaB-H	INV-Pdm785W2/NaB-H	INV-Pdm850W2/NaB-H
Refrigerant amount charged in factory	13+16	13+17	16+16	16+17
Model name	INV-Pdm900W2/NaB-H	INV-Pdm950W3/NaB-H	INV-Pdm1008W3/NaB-H	INV-Pdm1065W3/NaB-H
Refrigerant amount charged in factory	17+17	13+13+16	13+13+17	13+16+16
Model name	INV-Pdm1130W3/NaB-H	INV-Pdm1180W3/NaB-H	INV-Pdm1235W3/NaB-H	INV-Pdm1300W3/NaB-H
Refrigerant amount charged in factory	13+16+17	13+17+17	15+16+17	16+17+17
Model name	INV-Pdm1350W3/NaB-H	INV-Pdm1405W4/NaB-H	INV-Pdm1456W4/NaB-H	INV-Pdm1512W4/NaB-H
Refrigerant amount charged in factory	17+17+17	13+13+16+17	13+13+17+17	13+16+16+17
Model name	INV-Pdm1570W4/NaB-H	INV-Pdm1650W4/NaB-H	INV-Pdm1700W4/NaB-H	INV-Pdm1750W4/NaB-H
Refrigerant amount charged in factory	13+16+17+17	13+17+17+17	16+16+17+17	16+17+17+17
Model name	INV-Pdm1800W4/NaB-H			
Refrigerant amount charged in factory	17+17+17+17			

5.5.2 [Additional Refrigerant Charge Amount] = [Real Length of Liquid Pipe] [Additional Refrigerant Charge Amount Per Meter Liquid Pipe]

Pipe dia. at liquid side(mm/Inch)	Φ25.4 / 1	Φ22.2 / 7/8	Φ19.05 / 3/4	Φ15.9 / 5/8	Φ12.7 / 1/2	ϕ9.52 / 3/8	Φ6.35 / 1/4
Additional refrigerant amount (kg/m)	0.520	0.350	0.250	0.170	0.110	0.054	0.022

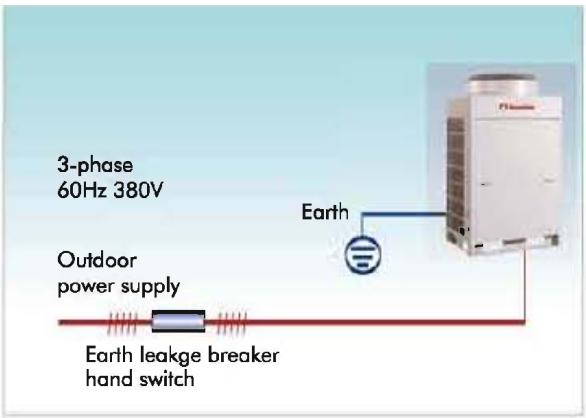
6 WIRING DESIGN

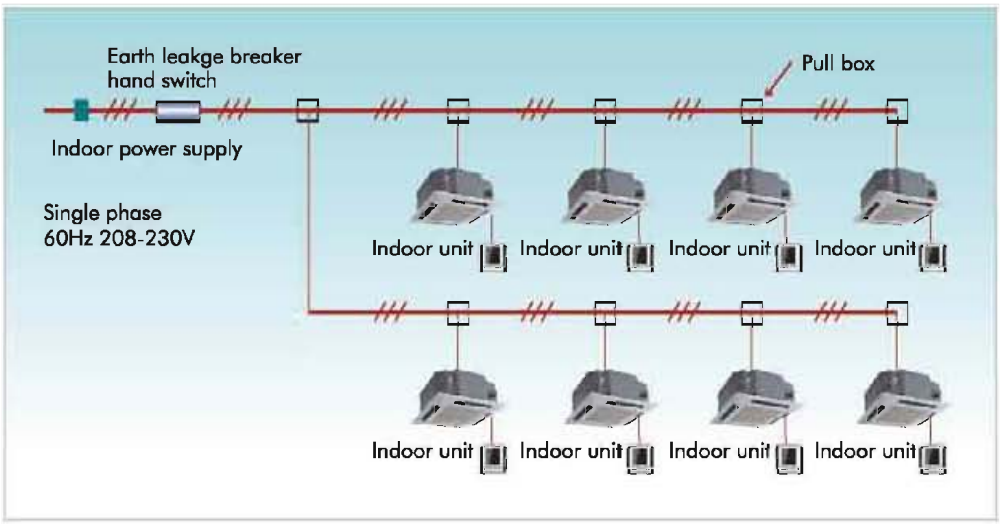
6.1 General

(1) Perform wiring of the power supply in conformance with the regulations of the local electric company.
(2) For the control wires connecting indoor units,and between indoor and outdoor units,use of twisted -pair shield wires is recommended to prevent noise trouble.
(3) Be sure to set the earth leakage breaker and the switches to the power supply section of the indoor unit.
(4) Supply power to each outdoor unit and provide an earth leakage breaker or hand switch for each outdoor unit.
(5) Store wiring system for control and refrigerant piping system in the same line.
(6) Arrange the cables so that the electric wires do not contact with high-temperature part of the pipe; otherwise coating melts and an accident may be caused.
(7) Do not turn on power of the indoor unit until vacuuming of the refrigerant pipe finish.

6.2 Electrical Wiring Design

6.2.1 Wiring Drawing





6.2.2 Selection of Power Supply Cabing and Fuse of Units

Model	The basic combination model	Air switch capacity (A)	Each air switch of combination models	Line dia. Of the main power	Line dia.of each combination model
INV-Pdm224W/NaB-H	224	32	32	6.0	6.0
INV-Pdm280W/NaB-H	280	32	32	6.0	6.0
INV-Pdm335W/NaB-H	335	40	40	10.0	10.0
INV-Pdm400W/NaB-H	400	40	40	10.0	10.0
INV-Pdm450W/NaB-H	450	40	40	10.0	10.0
INV-Pdm504W2/NaB-H	224+280	63	32+32	16.0	6.0+6.0
INV-Pdm560W2/NaB-H	280+280	63	32+32	16.0	6.0+6.0
INV-Pdm615W2/NaB-H	280+335	63	32+40	25.0	6.0+10.0
INV-Pdm670W2/NaB-H	280+400	80	32+40	25.0	6.0+10.0
INV-Pdm730W2/NaB-H	280+450	80	32+40	25.0	6.0+10.0
INV-Pdm785W2/NaB-H	400+400	80	40+40	25.0	10.0+10.0
INV-Pdm850W2/NaB-H	400+450	80	40+40	25.0	10.0+10.0
INV-Pdm900W2/NaB-H	450+450	80	40+40	25.0	10.0+10.0
INV-Pdm950W3/NaB-H	280+280+400	125	32+32+40	35.0	6.0+6.0+10.0
INV-Pdm1008W3/NaB-H	280+280+450	125	32+32+40	35.0	6.0+6.0+10.0
INV-Pdm1065W3/NaB-H	280+400+400	125	32+40+40	35.0	6.0+10.0+10.0
INV-Pdm1130W3/NaB-H	280+400+450	125	32+40+40	35.0	6.0+10.0+10.0
INV-Pdm1180W3/NaB-H	280+450+450	125	32+40+40	35.0	6.0+10.0+10.0
INV-Pdm1235W3/NaB-H	400+400+450	125	40+40+40	35.0	10.0+10.0+10.0
INV-Pdm1300W3/NaB-H	400+450+450	125	40+40+40	35.0	10.0+10.0+10.0
INV-Pdm1350W3/NaB-H	450+450+450	125	40+40+40	35.0	10.0+10.0+10.0
INV-Pdm1405W4/NaB-H	280+280+400+450	160	32+32+40+40	35.0	6.0+6.0+10.0+10.0
INV-Pdm1456W4/NaB-H	280+280+450+450	160	32+32+40+40	50.0	6.0+6.0+10.0+10.0
INV-Pdm1512W4/NaB-H	280+400+400+450	160	32+40+40+40	50.0	6.0+10.0+10.0+10.0
INV-Pdm1570W4/NaB-H	280+400+450+450	160	32+40+40+40	50.0	6.0+10.0+10.0+10.0
INV-Pdm1650W4/NaB-H	280+450+450+450	160	32+40+40+40	50.0	6.0+10.0+10.0+10.0
INV-Pdm1700W4/NaB-H	400+400+450+450	160	40+40+40+40	50.0	10.0+10.0+10.0+10.0
INV-Pdm1750W4/NaB-H	400+450+450+450	160	40+40+40+40	50.0	10.0+10.0+10.0+10.0
INV-Pdm1800W4/NaB-H	450+450+450+450	160	40+40+40+40	50.0	10.0+10.0+10.0+10.0

- Determine the wire size for indoor unit according to the number of connected indoor units downstream.
- Observe local regulation regarding wire size selection and installation.

NOTE :

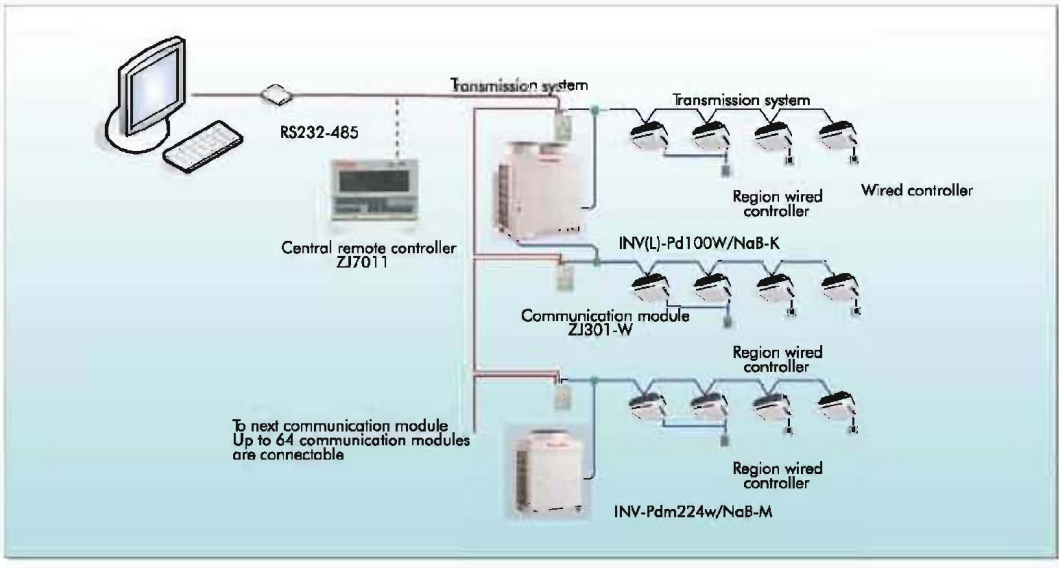
The specification of power cord mentioned hereby is defined as the required specification when wiring with BV single core cable (2 ~ 4 pieces) under the cover of PVC pipe, and environment temperature shall be at 40℃ ; Air switch shall be selected according to 40℃ temperature condition, and shall in D type. if the installation condition on site changed, please consider the modification on the required specification of Power cord and Air switch, according to the specification manual provided by manufacture.

⚠ CAUTIONS

(1) Keep the refrigerant piping system and the indoor-indoor/indoor-outdoor control wiring systems together.
(2) When running power wires and control wires parallel to each other. either run them through separate conduits or
(Current capacity of power wires: 10A or less for 300m, 50A or less for 500m)

6.3 Design of Control Wiring

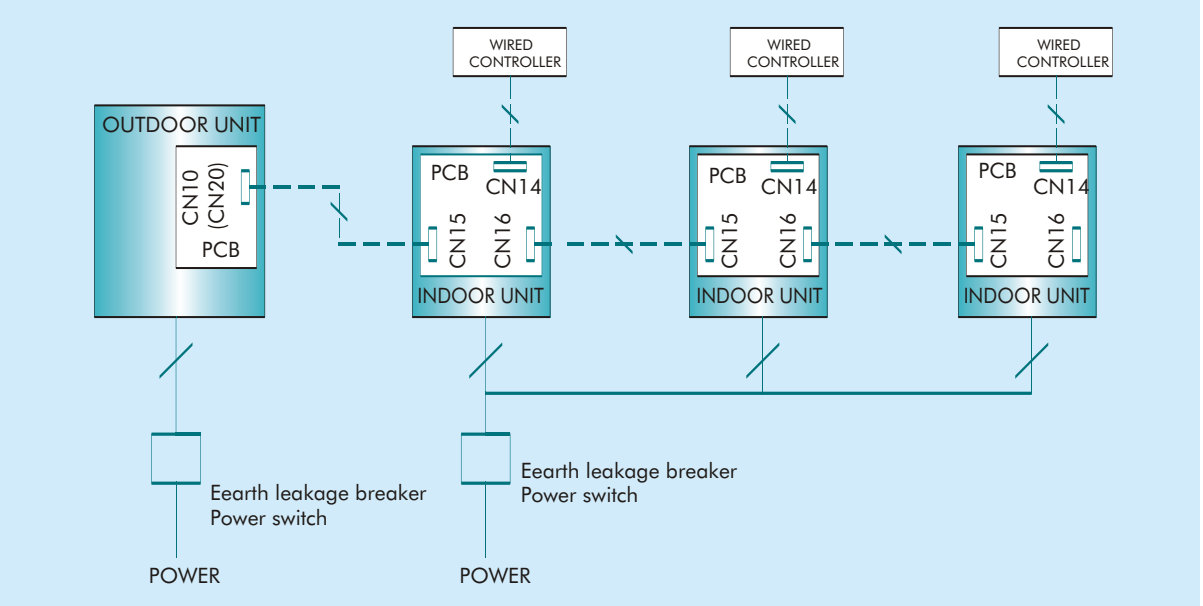
6.3.1 Control Wiring Drawing



6.3.2 Wire Specification, Quantity, Size of Crossover Wiring and Remote Controller Wiring

Name	Quantity	Size& Specification
communication cable between outdoor and indoor	2 cores	UL 2835 24 #
communication cable between outdoor and indoor wiring(indoor-wired controller)		

6.4 Wiring Diagram of Units



6.5 Parameters

6.5.1 Outdoor Unit

Model name	Voltage Range		Compressor		Fan Motor		Power Supply	
	Min	Max	RLA	LRA	kW	FLA	MCA	MOCP
INV-Pdm224W/NaB-H	342	420	7.5	58	0.75	4.4	3	32
INV-Pdm280W/NaB-H	342	420	7.5	58	0.75	4.4	3	32
INV-Pdm335W/NaB-H	342	420	7.5+7.5	58+58	0.35+0.35	2.0+2.0	3	40
INV-Pdm400W/NaB-H	342	420	9.2+9.2	62+62	0.35+0.35	2.0+2.0	3	40
INV-Pdm450W/NaB-H	342	420	9.2+9.2	62+62	0.35+0.35	2.0+2.0	3	40

LEGEND:

MCA: Minimum Circuit Amps
MOCP: Maximum Overcurrent Protection(Amps)
ICF: Maximum Instantaneous Current Flow Star
RLA: Rated Load Amps
LRA: Locked Rotor Amps
FLA: Full Load Amps
kW: Fan Motor Rated Output(kW)
Note: RLA is based on the following conditions.
Indoor temperature: 29℃(84.2 F)DB/19℃(66.6 F)WB
Outdoor temperature: 46℃(114.8 F) DB

6.5.2 Indoor Unit

Type	Model	Nominal Voltage (V/Ph/Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
4-way Air Discharge Cassette type	INV(L)-R28T/Na-D	208-230/1/60	208	230	0.035	0.34	0.425	0.765
	INV(L)-R36T/Na-D		208	230	0.035	0.34	0.425	0.765
	INV(L)-R56T/Na-D		208	230	0.035	0.34	0.425	0.765
	INV(L)-R71T/Na-D		208	230	0.035	0.34	0.425	0.765
	INV(L)-R90T/Na-D		208	230	0.06	0.43	0.5375	0.9675
	INV(L)-R112T/Na-D		208	230	0.06	0.43	0.5375	0.9675
	INV(L)-R125T/Na-D		208	230	0.06	0.43	0.5375	0.9675
	INV(L)-R140T/Na-D		208	230	0.06	0.43	0.5375	0.9675
Duct type	INV(L)-R22P/NaB-D	208-230/1/60	208	230	0.04	0.39	0.4875	0.8775
	INV(L)-R28P/NaB-D		208	230	0.06	0.43	0.5375	0.9675
	INV(L)-R36P/NaB-D		208	230	0.06	0.43	0.5375	0.9675
	INV(L)-R56P/NaB-D		208	230	0.15	1.18	1.475	2.655
	INV(L)-R71P/NaB-D		208	230	0.15	1.18	1.475	2.655
	INV(L)-R90P/NaB-D		208	230	0.225	1.87	2.3375	4.2075
	INV(L)-R112P/NaB-D		208	230	0.225	1.87	2.3375	4.2075
	INV(L)-R140P/NaB-D		208	230	0.26	2.58	3.225	5.805
Wall-mounted type	INV(L)-R22G/NaG-D	208-230/1/60	208	230	0.02	0.2	0. 25	0. 45
	INV(L)-R28G/NaG-D		208	230	0.02	0.2	0. 25	0. 45
	INV(L)-R36G/NaG-D		208	230	0.02	0.2	0. 25	0. 45
	INV(L)-R45G/NaG-D		208	230	0.02	0.2	0. 25	0. 45
	INV(L)-R50G/NaG-D		208	230	0.02	0.2	0. 25	0. 45
	INV(L)-R56G/NaG-D		208	230	0.03	0.14	0.175	0.315
	INV(L)-R63G/NaG-D		208	230	0.03	0.14	0.175	0.315
	INV(L)-R71G/NaG-D		208	230	0.03	0.15	0.175	0.315
Floor Ceiling Type	INV(L)-R28Zd/NaB-D	208-230/1/60	208	230	0.01	0.045	0.056	0.10125
	INV(L)-R36Zd/NaB-D		208	230	0.01	0.045	0.056	0.10125
	INV(L)-R50Zd/NaB-D		208	230	0.04	0.39	0.4875	0.8775
	INV(L)-R71Zd/NaB-D		208	230	0.1	0.45	0.56	1.0125
	INV(L)-R90Zd/NaB-D		208	230	0.1	0.45	0.56	1.0125
	INV(L)-R112Zd/NaB-D		208	230	0.15	1.18	1.475	2.665
	INV(L)-R125Zd/NaB-D		208	230	0.15	1.18	1.475	2.665

LEGEND:

MCA: Minimum Circuit Amps

MOCP: Maximum Overcurrent Protection(Amps)

FLA: Full Load Amps

kW: Fan Motor Rated Output(kW)

7 ACCESSORIES

7.1 Outdoor Unit

Accessories name	Standard	Option	Field supplied
Communication cable between units	√		
Y-type branching Joint and collecting pipe		√	
Power Cable			√
Flexible pipe	√		

7.2 Indoor Unit

Accessories name	Standard	Option	Field supplied
Power Cable			√
Wireless controller	√		
Wired Controller	√		
Connecting Cable for Line Controller(8m)	√		
Communication Line between units	√		
Drain Pipe	√		

7.3 Controller

Accessories name	Model Name	Standard	Option	Remark
Wired controller	Z60151F Z60351F Z60151F Z60351F	√		
Wireless controller	Y512	√		Common parts for all type model
Region controller	ZJA011		√	Common parts for all type model.But on the other hand unable Region controller sum Central remote controller or Long-distance control system put into use.
Central remote controller	ZJ7011		√	
Long-distance control system--for INV	FC232/422-W		√	
Communication Module	ZJ301-W		√	Use for Central remote controller or Long-distance Control System

NOTE

All indoor controllers are used for INV units;At the same time,the Central remote controller and the Long-distance Control Syetem are used for INV series units only

8 TECHNICAL SPECIFIC ATIONS

8.1 Indoor Unit

◆ 4-way Air Discharge Cassette Type

Model			INV(L)-R28T/Na-D	INV(L)-R36T/Na-D	INV(L)-R56T/Na-D	INV(L)-R71T/Na-D
Cooling capacity		kW	2.8	3.6	5.6	7.1
		Btu/h	9550	12280	19100	24230
Heating capacity		kW	3.2	4.0	6.3	8.0
		Btu/h	10900	13650	21500	27300
Air Flow Rate		m^3/h	680	680	1180	1180
		CFM	400	400	695	695
Sound Pressure Level(H/L)		dB(A)	42	42	45	45
Power Supply			208-230V-1Ph-60Hz			
Fan Motor	Output	kW	35	35	35	35
	Running Current	A	0.35	0.35	0.5	0.5
Connecting Pipes	Gas Pipe	mm	Φ9.52	Φ12.7	Φ15.9	Φ15.9
		Inch	1/2	1/2	5/8	5/8
	Liquid Pipe	mm	Φ6.35	Φ6.35	Φ9.52	Φ9.52
		Inch	1/4	1/4	3/8	3/8
	Connection Method		Flare Connection			
Drainage Pipe (External Dia.×Thickness)		mm	φ30×1.5			
Unit dimensions (Main Body/Panel) (W×D×H)		mm	Main Body:840x840x190 Panel:950x950x60		Main Body:840x840x240 Panel:950x950x60	
Package dimensions (W×D×H)		mm	Main Body:960x960x257 Panel:1040x1025x115		Main Body:960x960x257 Panel:1040x1025x115	
Net Weight (Main Body/Panel)		kg	25/6.5	25/6.5	30/6.5	30/6.5
Gross Weight (Main Body/Panel)		kg	33/10	33/10	38/10	38/10

NOTE:

- ◆The technical parameters are changed along with the products'improvement; please refer to the nameplate of the unit for actual data.
- ◆The cooling only type (INVL) has no heating parameter. The Heating cap acity of the heat pump type (INV) is the capacity of heat pump.
- ◆The model INVL is refers to cooling only while the model INV is heat pump type. The model with the last code of "K" is single phase.
- ◆Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- ◆Rated conditions:
  Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
  Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.

Model			INV(L)-R90T/Na-D	INV(L)-R112T/Na-D	INV(L)-R125T/Na-D	INV(L)-R140T/Na-D
Cooling capacity		kW	9.0	11.2	12.5	14.0
		Btu/h	30700	38210	42650	47770
Heating capacity		kW	10.0	12.5	13.5	14.5
		Btu/h	34120	42650	46062	49470
Air Flow Rate		m^3/h	1860	1860	1860	1860
		CFM	1095	1095	1095	1095
Sound Pressure Level(H/L)		dB(A)	52	52	52	52
Power Supply			208-230V-1Ph-60Hz			
Fan Motor	Output	kW	0.06	0.06	0.06	0.06
	Running Current	A	0.75	0.75	0.75	0.75
Connecting Pipes	Gas Pipe	mm	Φ15.9	Φ15.9	Φ15.9	Φ15.9
		Inch	5/8	5/8	5/8	5/8
	Liquid Pipe	mm	Φ9.52	Φ9.52	Φ9.52	Φ9.52
		Inch	3/8	3/8	3/8	3/8
	Connection Method		Flare Connection			
Drainage Pipe (External Dia.×Thickness)		mm	Φ30×1.5			
Unit dimensions (Main Body/Panel) (W×D×H)		mm	Main Body:840×840×320 Panel:950×950×60		Main Body:840×840×320 Panel:950×950×60	
Package dimensions (W×D×H)		mm	Main Body:960×960×394 Panel:1040×1025×115		Main Body:960×960×394 Panel:1040×1025×115	
Net Weight (Main Body/Panel)		kg	38/6.5		38/6.5	
Gross Weight (Main Body/Panel)		kg	46/10		38/6.5	

NOTE:

- The technical parameters are changed along with the products'improvement; please refer to the nameplate of the unit for actual data.
- The cooling only type (INVL) has no heating parameter. The Heating cap acity of the heat pump type (INV) is the capacity of heat pump.
- The model INVL is refers to cooling only while the model INV is heat pump type. The model with the last code of "K" is single phase.
- Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- Rated conditions:
  Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
  Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.

◆ Duct Type

Item \ Model			INV(L)-R22P/NaB-D	INV(L)-R28P/NaB-D	INV(L)-R36P/NaB-D	INV(L)-R56P/NaB-D
Cooling capacity		kW	2.2	2.8	3.6	5.6
		Btu/h	7507	9554	12284	19108
Heating capacity		kW	2.5	3.2	4.0	6.3
		Btu/h	8530	10918	13648	21496
Air volume		m^3/h	450	570	570	1000
		CFM	265	335	335	589
Noise(H/L)		dB(A)	37	39	39	44
Motor output power		kW	0.04	0.06	0.06	0.15
Motor Running Current		A	0.28	0.41	0.41	0.85
Indoor unit surplus pressure		Pa	50/20	50/20	50/20	60/30
Phase number-Voltage-Frequency			208-230V-1Ph-60Hz			
Connecting Pipes	Gas Pipe	mm	Φ9.52	Φ9.52	Φ12.7	Φ15.9
		Inch	3/8	3/8	1/2	5/8
	Liquid Pipe	mm	Φ6.35	Φ6.35	Φ6.35	Φ9.52
		Inch	1/4	1/4	1/4	3/8
	Connection Method		Flare Connection			
The aperture of condensing drainage pipe (External Dia.×Thickness)		mm	Φ30×1.5			
Unit dimensions (W×D×H)		mm	880x665x250	880x665x250	880x665x250	1112x756x300
Package dimensions (W×D×H)		mm	1020X745X305	1020X745X305	1020X745X305	1245x785x360
Net Weight		kg	27	28.5	28.5	49
Gross Weight		kg	31	33.5	33.5	56

NOTE:

- The technical parameters are changed along with the products' improvement; please refer to the nameplate of the unit for actual data.
- The cooling only type (INVL) has no heating parameter. The Heating capacity of the heat pump type (INV) is the capacity of heat pump.
- The model INVL is refers to cooling only while the model INV is heat pump type. The model with the last code of "K" is single phase.
- Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- Rated conditions:
  Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
  Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.

Item \ Model			INV(L)-R71P/NaB-D	INV(L)-R90P/NaB-D	INV(L)-R112P/NaB-D	INV(L)-R140P/NaB-D
Cooling capacity		kW	7.1	9.0	11.2	14.0
		Btu/h	24226	30709	38216	47770
Heating capacity		kW	8.0	10.0	12.5	15.0
		Btu/h	27296	34120	42650	51180
Air volume		m^3/h	1100	1700	1700	2000
		CFM	647	1001	1001	1177
Noise(H/L)		dB(A)	45	48	48	50
Motor output power		kW	0.15	0.15	0.225	0.225
Motor Running Current		A	1.3	1.3	1.3	1.3
Indoor unit surplus pressure		Pa	60/30	80/40	80/40	80/40
Phase number-Voltage-Frequency			208-230V-1Ph-60Hz			
Connect-ing Pipes	Gas Pipe	mm	Φ15.9	Φ15.9	Φ15.9	Φ15.9
		Inch	5/8	5/8	5/8	5/8
	Liquid Pipe	mm	Φ9.52	Φ9.52	Φ9.52	Φ9.52
		Inch	3/8	3/8	3/8	3/8
	Connection Method		Flare Connection			
The aperture of condensing drainage pipe (External Dia.×Thickness)		mm	Φ30×1.5			
Unit dimensions (W×D×H)		mm	1112x756x300	1425x756x300	1425x756x300	1425x756x300
Package dimensions (W×D×H)		mm	1245x785x360	1514x785x360	1514x785x360	1514x785x360
Net Weight		kg	49	62	62	63.5
Gross Weight		kg	56	71	71	73

NOTE:

- The technical parameters are changed along with the products' improvement; please refer to the nameplate of the unit for actual data.
- The cooling only type (INVL) has no heating parameter. The Heating capacity of the heat pump type (INV) is the capacity of heat pump.
- The model INVL is refers to cooling only while the model INV is heat pump type. The model with the last code of "K" is single phase.
- Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- Rated conditions:
  Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
  Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.

◆ Wall-mounted Type

Model			INV(L)-R22G/NaG-D	INV(L)-R28G/NaG-D	INV(L)-R36G/NaG-D	INVV(L)-R45G/NaG-D
Cooling capacity		kW	2.2	2.8	3.6	4.5
		Btu/h	7507	9554	12284	15355
Heating capacity		kW	2.5	3.2	4.0	5.0
		Btu/h	8530	10919	13649	17061
Air Flow Rate		m^3/h	360	360	700	700
		CFM	212	212	412	412
Sound Pressure Level(H/L)		dB(A)	37/28	37/28	43/28	43/28
Power Supply			208-230V-1Ph-60Hz			
Fan Motor	Output	kW	0.02	0.02	0.02	0.02
	Running Current	A	0.25	0.25	0.25	0.25
Indoor unit surplus pressure		Pa	0	0	0	0
Connecting Pipes	Gas Pipe	mm	Φ9.52	Φ9.52	Φ12.7	Φ12.7
		Inch	3/8	3/8	1/2	1/2
	Liquid Pipe	mm	Φ6.35	Φ6.35	Φ6.35	Φ6.35
		Inch	1/4	1/4	1/4	1/4
Connection Method			Flare Connection			
Drainage Pipes (External Dia.×Thickness)		mm	Φ28×4			
Dimensions (W×D×H)		mm	843x180x275	843x180x275	940x200x298	940x200x298
Package dimensions (W×D×H)		mm	915x255x355	915x255x355	1010x380x285	1010x380x285
Net Weight		kg	11	11	13	13
Gross Weight		kg	14	14	17	17

NOTE:

- The technical parameters are changed along with the products' improvement; please refer to the nameplate of the unit for actual data.
- The cooling only type (INVL) has no heating parameter. The Heating capacity of the heat pump type (INV) is the capacity of heat pump.
- The model INVL is refers to cooling only while the model INV is heat pump type. The model with the last code of "K" is single phase.
- Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- Rated conditions:
  Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
  Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.

Model			INV(L)-R50G/NaG-D	INV(L)-R56G/NaG-D	INV(L)-R63G/NaG-D	INV(L)-R71G/NaG-D
Cooling capacity		kW	5.0	5.6	6.3	7.1
		Btu/h	17061	19108	21496	24226
Heating capacity		kW	5.8	6.3	7.0	8.0
		Btu/h	19790	21496	23885	27297
Air Flow Rate		m^3/h	700	1100	1100	1100
		CFM	412	647	647	647
Sound Pressure Level(H/L)		dB(A)	43/28	45/40	45/40	45/40
Power Supply			208-230V-1Ph-60Hz			
Fan Motor	Output	kW	0.02	0.03	0.03	0.03
	Running Current	A	0.25	0.27	0.27	0.27
Indoor unit surplus pressure		Pa	0	0	0	0
Connecting Pipes	Gas Pipe	mm	Φ12.7	Φ15.9	Φ15.9	Φ15.9
		Inch	1/2	5/8	5/8	5/8
	Liquid Pipe	mm	Φ6.35	Φ9.52	Φ9.52	Φ9.52
		Inch	1/4	3/8	3/8	3/8
Connection Method			Flare Connection			
Drainage Pipes (External Dia.×Thickness)		mm	Φ28×4			
Dimensions (W×D×H)		mm	940x200x298	1008x221x319	1008x221x319	1008x221x319
Package dimensions (W×D×H)		mm	1010x380x285	1073x395x313	1073x395x313	1073x395x313
Net Weight		kg	13	15.5	15.5	15.5
Gross Weight		kg	17	20.5	20.5	20.5

NOTE:

- The technical parameters are changed along with the products' improvement; please refer to the nameplate of the unit for actual data.
- The cooling only type (INVL) has no heating parameter. The Heating capacity of the heat pump type (INV) is the capacity of heat pump.
- The model INVL is refers to cooling only while the model INV is heat pump type. The model with the last code of "K" is single phase.
- Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- Rated conditions:
  Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
  Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.

◆ Ceiling Type

Model			INV(L)-R28Zd/NaB-D	INV(L)-R36Zd/NaB-D	INV(L)-R50Zd/NaB-D	INV(L)-R71Zd/NaB-D
Cooling capacity		kW	2.8	3.6	5.0	7.1
		Btu/h	9550	12280	17061	24230
Heating capacity		kW	3.2	4.0	5.8	8.0
		Btu/h	10900	13650	19790	27300
Air Flow Rate		m^3/h	550	600	700	700
		CFM	324	353	412	689
Sound Pressure Level(H/L)		dB(A)	43	44	50	48
Power Supply			208-230V-1Ph-60Hz			
Fan Motor	Output	kW	0.01	0.01	0.04	0.1
	Running Current	A	0.09	0.09	0.34	0.84
Connecting Pipes	Gas Pipe	mm	Φ9.52	Φ9.52	Φ9.52	Φ15.9
		Inch	3/8	3/8	3/8	5/8
	Liquid Pipe	mm	Φ6.35	Φ6.35	Φ6.35	Φ9.52
		Inch	1/4	1/4	1/4	3/8
	Connection Method		Flare Connection			
Drainage Pipes (External Dia.×Thickness)		mm	Φ17×1.75			
Dimensions (W×D×H)		mm	980x700x225	980x700x225	980x700x225	1420x700x245
Package dimensions (W×D×H)		mm	1090x825x310	1090x825x310	1090x825x310	1530x825x330
Net Weight (Main Body/Panel)		kg	27	27	27	32
Gross Weight (Main Body/Panel)		kg	37	37	37	38

NOTE:

- ◆The technical parameters are changed along with the products' improvement; please refer to the nameplate of the unit for actual data.
- ◆The cooling only type (INVL) has no heating parameter. The Heating capacity of the heat pump type (INV) is the capacity of heat pump.
- ◆The model INVL is refers to cooling only while the model INV is heat pump type. The model with the last code of "K" is single phase.
- ◆Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- ◆Rated conditions:
  Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
  Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.

Model			INV(L)-R90Zd/NaB-D	INV(L)-R112Zd/NaB-D	INV(L)-R125Zd/NaB-D
Cooling capacity		kW	9.0	11.2	12.5
		Btu/h	30700	38210	42650
Heating capacity		kW	10.0	12.5	13.5
		Btu/h	34120	42650	46062
Air Flow Rate		m^3/h	1650	2200	2300
		CFM	971	1295	1354
Sound Pressure Level(H/L)		dB(A)	50	54	55
Power Supply			208-230V-1Ph-60Hz		
Fan Motor	Output	kW	0.1	0.15	0.15
	Running Current	A	0.84	1.55	1.55
Connecting Pipes	Gas Pipe	mm	Φ15.9	Φ15.9	Φ15.9
		Inch	5/8	5/8	5/8
	Liquid Pipe	mm	Φ9.52	Φ9.52	Φ9.52
		Inch	3/8	3/8	3/8
	Connection Method		Flare Connection		
Drainage Pipes (External Dia.×Thickness)		mm	Φ17×1.75		
Dimensions (W×D×H)		mm	1420x700x245	1700x700x245	1700x700x245
Package dimensions (W×D×H)		mm	1530x825x330	1810x825x330	1810x825x330
Net Weight (Main Body/Panel)		kg	32	42	42
Gross Weight (Main Body/Panel)		kg	38	53	53

NOTE:

- The technical parameters are changed along with the products' improvement; please refer to the nameplate of the unit for actual data.
- The cooling only type (INVL) has no heating parameter. The Heating capacity of the heat pump type (INV) is the capacity of heat pump.
- The model INVL is refers to cooling only while the model INV is heat pump type. The model with the last code of "K" is single phase.
- Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- Rated conditions:
  Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
  Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.

◆ Outdoor Unit

Model			INV-Pdm224W/NaB-H	INV-Pdm280W/NaB-H	INV-Pdm335W/NaB-H
Capacity	Cooling	kW(Btu/h)	22.4(76428)	28.0(95536)	33.5(114302)
	Heating	kW(Btu/h)	25.0(85300)	31.5(107478)	37.5(127950)
Noise		dB(A)	58	58	60
R410A Filling Amount		kg	12	13	15
Power Supply				380V 3N~ 60Hz	
Power input	Cooling	kW	5.52	7.52	9.23
	Heating	kW	5.82	7.70	9.38
Dimensions	Width	mm	930	930	1340
	Depth	mm	770	770	770
	Height	mm	1670	1670	1670
Compressor			(D.C.Inverter Scroll type compressor +constant speed scroll compressor)	(D.C.Inverter Scroll type compressor +constant speed scroll compressor)	(D.C.Inverter Scroll type compressor +constant speed scroll compressor×2)
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ22.2	Φ22.2	Φ28.6
		Inch	7/8	7/8	9/8
	Liquid Pipe	mm	Φ9.52	Φ9.52	Φ12.7
		Inch	3/8	3/8	1/2
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	255	255	350
Gross Weight		kg	275	275	380
Recommended Power Lines	mm^2× number of Lines		6.0×5	6.0×5	10.0×5
Dimensions of Package	Width	mm	1010	1010	1420
	Depth	mm	850	850	850
	Height	mm	1850	1850	1850
Loading Quantity (20' Container) ③		Unit	12	12	7
Loading Quantity (40' Container) ④		Unit	24	24	16
Loading Quantity (40' High Cube Container) ⑤		Unit	24	24	16
Circuit breaker		A	32	32	40

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

Model（Combined unit）			—	—	INV-Pdm504W/NaB-H
Model			INV-Pdm400W/NaB-H	INV-Pdm450W/NaB-H	INV-Pdm224W/NaB-H +INV-Pdm280W/NaB-H
Capacity	Cooling	kW(Btu/h)	40.0(136480)	45.0(153540)	50.4(171964)
	Heating	kW(Btu/h)	45.0(153540)	50.0(170600)	56.5(192778)
Noise		dB(A)	61	61	62
R410A Filling Amount		kg	16	17	12+13
Power Supply			380V 3N～ 60Hz		
Power input	Cooling	kW	12.45	14.32	5.52+7.52
	Heating	kW	11.2	13.90	5.82+7.70
Dimensions	Width	mm	1340	1340	930+930
	Depth	mm	770	770	770+770
	Height	mm	1670	1670	1670+1670
Compressor			(D.C.Inverter Scroll type compressor +constant speed scroll compressor×2)	(D.C.Inverter Scroll type compressor +constant speed scroll compressor×2)	(D.C.Inverter Scroll type compressor +constant speed scroll compressor)×2
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ28.6	Φ28.6	Φ28.6
		Inch	9/8	9/8	9/8
	Liquid Pipe	mm	Φ12.7	Φ12.7	Φ15.9
		Inch	1/2	1/2	5/8
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	350	370	255+255
Gross Weight		kg	380	400	275+575
Recommended Power Lines	mm^2× number of Lines		10.0×5	10.0×5	6.0×5+6.0×5
Dimensions of Package	Width	mm	1420	1420	1010+1010
	Depth	mm	850	850	850+850
	Height	mm	1850	1850	1850+1850
Loading Quantity (20' Container) ③		Unit	7	7	——
Loading Quantity (40' Container) ④		Unit	16	16	——
Loading Quantity (40' High Cube Container) ⑤		Unit	16	16	——
Circuit breaker		A	40	40	32+32

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

Model（Combined unit）			INV-Pdm560W2/NaB-H	INV-Pdm615W2/NaB-H	INV-Pdm670W2/NaB-H
Model			INV-Pdm280W/NaB-H +INV-Pdm280W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm335W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm400W/NaB-H
Capacity	Cooling	kW(Btu/h)	56.0(191072)	61.5(209838)	68.0(232016)
	Heating	kW(Btu/h)	63.0(214956)	69.0(235428)	76.5(261018)
Noise		dB(A)	62	62	62
R410A Filling Amount		kg	13+13	13+15	13+16
Power Supply			380V 3N～ 60Hz		
Power input	Cooling	kW	7.52+7.52	7.52+9.23	7.52+12.45
	Heating	kW	7.70+7.70	7.70+9.38	7.70+11.2
Dimensions	Width	mm	930+930	930+1340	930+1340
	Depth	mm	770+770	770+770	770+770
	Height	mm	1670+1670	1670+1670	1670+1670
Compressor			(D.C.Inverter Scroll type compressor +constant speed scroll compressor)×2	（D.C.Inverter Scroll type compressor +constant speed scroll compressor） +（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）	（D.C.Inverter Scroll type compressor +constant speed scroll compressor×1） +（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ28.6	Φ28.6	Φ34.9
		Inch	9/8	9/8	11/8
	Liquid Pipe	mm	Φ15.9	Φ15.9	Φ15.9
		Inch	5/8	5/8	5/8
		mm	Φ12.7	Φ12.7	Φ12.7
		Inch	1/2	1/2	1/2
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	255+255	255+350	255+350
Gross Weight		kg	275+275	275+380	275+380
Recommended Power Lines	mm^2× number of Lines		6.0×5+6.0×5	6.0×5+10.0×5	6.0×5+10.0×5
Dimensions of Package	Width	mm	1010+1010	1010+1420	1010+1420
	Depth	mm	850+850	850+850	850+850
	Height	mm	1850+1850	1850+1850	1850+1850
Circuit breaker		A	32+32	32+40	32+40

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

Model（Combined unit）			INV-Pdm730W2/NaB-H	INV-Pdm785W2/NaB-H	INV-Pdm850W2/NaB-H
Model			INV-Pdm280W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm400W/NaB-H +INV-Pdm400W/NaB-H	INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H
Capacity	Cooling	kW(Btu/h)	73.0(249076)	80.0(272960)	85.0(290020)
	Heating	kW(Btu/h)	81.5(278078)	90.0(307080)	95.0(324140)
Noise		dB(A)	63	63	63
R410A Filling Amount		kg	13+17	16+16	16+17
Power Supply				380V 3N～ 60Hz	
Power input	Cooling	kW	7.52+14.32	12.45+12.45	12.45+14.32
	Heating	kW	7.70+13.90	11.2+11.2	11.2+13.90
Dimensions	Width	mm	930+1340	1340+1340	1340+1340
	Depth	mm	770+770	770+770	770+770
	Height	mm	1670+1670	1670+1670	1670+1670
Compressor			（D.C.Inverter Scroll type compressor +constant speed scroll compressor×1）+（D.C.Inverter Scroll type compressor +constant speed croll compressor×2）	（D.C.Inverter Scroll type compressor +constant speed scroll compressor ×2）×2	（D.C.Inverter Scroll type compressor +constant speed scroll compressor ×2）×2
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ34.9	Φ34.9	Φ34.9
		Inch	11/8	11/8	11/8
	Liquid Pipe	mm	Φ19.05	Φ19.05	Φ19.05
		Inch	3/4	3/4	3/4
		mm	Φ12.7	Φ12.7	Φ12.7
		Inch	1/2	1/2	1/2
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	255+370	350+350	350+370
Gross Weight		kg	275+400	380+380	380+400
Recommended Power Lines	mm^2× number of Lines		6.0×5+10.0×5	10.0×5+10.0×5	10.0×5+10.0×5
Dimensions of Package	Width	mm	1010+1420	1420+1420	1010+1420
	Depth	mm	850+850	850+850	850+850
	Height	mm	1850+1850	1850+1850	1850+1850
Loading Quantity (20' Container) ③		Unit	6		
Loading Quantity (40' Container) ④		Unit	12		
Loading Quantity (40' High Cube Container) ⑤		Unit	12		
Circuit breaker		A	32+40	40+40	40+40

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

Model（Combined unit）			INV-Pdm900W2/NaB-H	INV-Pdm950W3/NaB-H	INV-Pdm1008W3/NaB-H
Model			INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm280W/NaB-H +INV-Pdm400W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm280W/NaB-H +INV-Pdm450W/NaB-H
Capacity	Cooling	kW(Btu/h)	90.0(307080)	96.0(327552)	101.0(344612)
	Heating	kW(Btu/h)	100.0(341200)	108.0(368496)	113.0(3855526)
Noise		dB(A)	63	64	64
R410A Filling Amount		kg	17+17	13+13+16	13+13+17
Power Supply			380V 3N~60Hz		
Power input	Cooling	kW	14.32+14.32	7.52+7.52+12.45	7.52+7.52+14.32
	Heating	kW	13.90+13.90	7.70+7.70+11.2	7.70+7.70+13.90
Dimensions	Width	mm	1340+1340	930+930+1340	930+930+1340
	Depth	mm	770+770	770+770+770	770+770+770
	Height	mm	1670+1670	1670+1670+1670	1670+1670+1670
Compressor			(D.C.Inverter Scroll type compressor +constant speed scroll compressor×2)×2	（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）+（D.C.Inverter Scroll type compressor +constant speed scroll compressor)×2	（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）+（D.C.Inverter Scroll type compressor +constant speed scroll compressor)×2
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ34.9	Φ34.9	Φ 41.3
		Inch	11/8	11/8	13/8
	Liquid Pipe	mm	Φ19.05	Φ19.05	Φ19.05
		Inch	3/4	3/4	3/4
		mm	Φ12.7	Φ12.7	Φ12.7
		Inch	1/2	1/2	1/2
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	370+370	255+255+350	255+255+370
Gross Weight		kg	400+400	275+275+380	275+275+400
Recommended Power Lines	mm^2× number of Lines		10.0×5+10.0×5	6.0×5+6.0×5+10.0×5	6.0×5+6.0×5+10.0×5
Dimensions of Package	Width	mm	1420+1420	1010+1010+1420	1010+1010+1420
	Depth	mm	850+850	850+850+850	850+850+850
	Height	mm	1850+1850	1850+1850+1850	1850+1850+1850
Circuit breaker		A	40+40	32+32+40	32+32+40

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

Model（Combined unit）			INV-Pdm1065W3/NaB-H	INV-Pdm1130W3/NaB-H	INV-Pdm1180W3/NaB-H
Model			INV-Pdm280W/NaB-H +INV-Pdm400W/NaB-H +INV-Pdm400W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H
Capacity	Cooling	kW(Btu/h)	108.0(368496)	113.0(385556)	118.0(402616)
	Heating	kW(Btu/h)	121.5(414558)	126.5(431618)	131.5(448678)
Noise		dB(A)	63	64	64
R410A Filling Amount		kg	13+16+16	13+16+17	13+17+17
Power Supply			380V 3N~60Hz		
Power input	Cooling	kW	7.52+12.45+12.45	7.52+12.45+14.32	7.52+14.32+14.32
	Heating	kW	7.70+11.2+11.2	7.70+11.2+13.90	7.70+13.90+13.90
Dimensions	Width	mm	930+1340+1340	930+1340+1340	930+1340+1340
	Depth	mm	770+770+770	770+770+770	770+770+770
	Height	mm	1670+1670+1670	1670+1670+1670	1670+1670+1670
Compressor			（D.C.Inverter Scroll type compressor +constant speed scroll compressor）+（D.C.Inverter Scroll type compressor +constant speed scroll compressor)×2	（D.C.Inverter Scroll type compressor +constant speed scroll compressor）+（D.C.Inverter Scroll type compressor + constant speed scroll compressor×2)×2	（D.C.Inverter Scroll type compressor +constant speed scroll compressor）+（D.C.Inverter Scroll type compressor + constant speed scroll compressor×2)×2
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ 41.3	Φ 41.3	Φ 41.3
		Inch	13/8	13/8	13/8
	Liquid Pipe	mm	Φ19.05	Φ19.05	Φ19.05
		Inch	3/4	3/4	3/4
		mm	Φ12.7	Φ12.7	Φ12.7
		Inch	1/2	1/2	1/2
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	255+350+370	255+350+370	255+370+370
Gross Weight		kg	275+380+400	275+380+400	275+380+400
Recommended Power Lines	mm^2× number of Lines		6.0×5+10.0×5+10.0×5	6.0×5+10.0×5+10.0×5	6.0×5+10.0×5+10.0×5
Dimensions of Package	Width	mm	1010+1420+1420	1010+1420+1420	1010+1420+1420
	Depth	mm	850+850+850	850+850+850	850+850+850
	Height	mm	1850+1850+1850	1850+1850+1850	1850+1850+1850
Circuit breaker		A	32+40+40	32+40+40	32+40+40

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

Model（Combined unit）			INV-Pdm1235W3/NaB-H	INV-Pdm1300W3/NaB-H	INV-Pdm1350W3/NaB-H
Model			INV-Pdm400W/NaB-H +INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H
Capacity	Cooling	kW(Btu/h)	125.0(426500)	130.0(443560)	135.0(460620)
	Heating	kW(Btu/h)	140.0(477680)	145.0(494740)	150.0(511800)
Noise		dB(A)	65	65	65
R410A Filling Amount		kg	16+16+17	16+17+17	17+17+17
Power Supply			380V 3N~60Hz		
Power input	Cooling	kW	12.45+12.45+14.32	12.45+14.32+14.32	14.32+14.32+14.32
	Heating	kW	11.2+11.2+13.90	11.2+13.90+13.90	13.90+13.90+13.90
Dimensions	Width	mm	1340+1340+1340	1340+1340+1340	1340+1340+1340
	Depth	mm	770+770+770	770+770+770	770+770+770
	Height	mm	1670+1670+1670	1670+1670+1670	1670+1670+1670
Compressor			（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×3	（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×3	（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×3
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ 41.3	Φ 41.3	Φ 41.3
		Inch	13/8	13/8	13/8
	Liquid Pipe	mm	Φ19.05	Φ19.05	Φ19.05
		Inch	3/4	3/4	3/4
		mm	Φ12.7	Φ12.7	Φ12.7
		Inch	1/2	1/2	1/2
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	350+350+370	350+370+370	370+370+370
Gross Weight		kg	400+400+400	380+400+400	400+400+400
Recommended Power Lines	mm^2× number of Lines		6.0×5+10.0×5+10.0×5	6.0×5+10.0×5+10.0×5	10.0×5+10.0×5+10.0×5
Dimensions of Package	Width	mm	1420+1420+1420	1420+1420+1420	1420+1420+1420
	Depth	mm	850+850+850	850+850+850	850+850+850
	Height	mm	1850+1850+1850	1850+1850+1850	1850+1850+1850
Circuit breaker		A	40+40+40	40+40+40	40+40+40

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

Model（Combined unit）			INV-Pdm1405W4/NaB-H	INV-Pdm1456W4/NaB-H	INV-Pdm1512W4/NaB-H
Model			INV-Pdm280W/NaB-H +INV-Pdm280W/NaB-H +INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm280W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm400W/NaB-H +INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H
Capacity	Cooling	kW(Btu/h)	141.0(481092)	146.0(498152)	153.0(522036)
	Heating	kW(Btu/h)	158.0(539096)	163.0(556156)	171.5(585158)
Noise		dB(A)	65	65	65
R410A Filling Amount		kg	13+13+16+17	13+13+17+17	13+16+16+17
Power Supply			380V 3N~60Hz		
Power input	Cooling	kW	7.52+7.52+12.45+14.32	7.52+7.52+14.32+14.32	7.52+12.25+12.25+14.32
	Heating	kW	7.70+7.70+11.2+13.90	7.70+7.70+13.90+13.90	7.70+11.20+11.20+13.90
Dimensions	Width	mm	930+930+1340+1340	930+930+1340+1340	930+1340+1340+1340
	Depth	mm	770+770+770+770	770+770+770+770	770+770+770+770
	Height	mm	1670+1670+1670+1670	1670+1670+1670+1670	1670+1670+1670+1670
Compressor			（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）+（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×2	（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）+（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×2	（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）+（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×3
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ44.5	Φ44.5	Φ44.5
		Inch	7/4	7/4	7/4
	Liquid Pipe	mm	Φ22.2	Φ22.2	Φ22.2
		Inch	7/8	7/8	7/8
		mm	Φ12.7	Φ12.7	Φ12.7
		Inch	1/2	1/2	1/2
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	255+255+350+370	255+255+370+370	255+350+350+370
Gross Weight		kg	275+275+380+400	275+275+400+400	275+380+380+400
Recommended Power Lines	mm^2× number of Lines		6.0×5+6.0×5+10.0×5 +10.0×5	6.0×5+10.0×5+10.0×5 +10.0×5	6.0×5+6.0×5+10.0×5 +10.0×5
Dimensions of Package	Width	mm	1010+1010+1420+1420	1010+1010+1420+1420	1010+1420+1420+1420
	Depth	mm	850+850+850+850	850+850+850+850	850+850+850+850
	Height	mm	1850+1850+1850+1850	1850+1850+1850+1850	1850+1850+1850+1850
Circuit breaker		A	32+32+40+40	32+32+40+40	32+32+40+40

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

Model（Combined unit）			INV-Pdm1570W4/NaB-H	INV-Pdm1650W4/NaB-H	INV-Pdm1700W4/NaB-H
Model			INV-Pdm280W/NaB-H +INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm280W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm400W/NaB-H +INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H
Capacity	Cooling	kW(Btu/h)	155.0(528860)	163.0(556156)	170.0(580040)
	Heating	kW(Btu/h)	176.5(602218)	181.5(619278)	190.0(648280)
Noise		dB(A)	65	66	66
R410A Filling Amount		kg	13+16+17+17	13+17+17+17	16+16+17+17
Power Supply			380V 3N~60Hz		
Power input	Cooling	kW	7.52+12.45+14.32+14.32	7.52+14.32+14.32+14.32	12.45+12.45+14.32+14.32
	Heating	kW	7.70+11.2+13.90+13.90	7.70+13.90+13.90+13.90	11.2+11.2+13.9+13.9
Dimensions	Width	mm	930+1340+1340+1340	930+1340+1340+1340	1340+1340+1340+1340
	Depth	mm	770+770+770+770	770+770+770+770	770+770+770+770
	Height	mm	1670+1670+1670+1670	1670+1670+1670+1670	1670+1670+1670+1670
Compressor			（D.C.Inverter Scroll type compressor +constant speed scroll compressor）+（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×3	（D.C.Inverter Scroll type compressor +constant speed scroll compressor）+（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×3	（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2）×4
Moisture protection			IP×4	IP×4	IP×4
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Φ44.5	Φ54.1	Φ54.1
		Inch	7/4	17/8	17/8
	Liquid Pipe	mm	Φ22.2	Φ25.4	Φ25.4
		Inch	7/8	1	1
		mm	Φ12.7	Φ12.7	Φ12.7
		Inch	1/2	1/2	1/2
	Connection Method		Brazing Connection	Brazing Connection	Brazing Connection
Net Weight		kg	255+350+370+370	255+370+370+370	380+380+400+400
Gross Weight		kg	275+380+400+400	275+400+400+400	380+380+400+400
Recommended Power Lines	mm^2× number of Lines		6.0×5+10.0×5+10.0×5 +10.0×5	6.0×5+10.0×5+10.0×5 +10.0×5	10.0×5+10.0×5+10.0×5 +10.0×5
Dimensions of Package	Width	mm	1010+1420+1420+1420	1010+1420+1420+1420	1420+1420+1420+1420
	Depth	mm	850+850+850+850	850+850+850+850	850+850+850+850
	Height	mm	1850+1850+1850+1850	1850+1850+1850+1850	1850+1850+1850+1850
Circuit breaker		A	32+40+40+40	32+40+40+40	40+40+40+40

NOTE:

- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

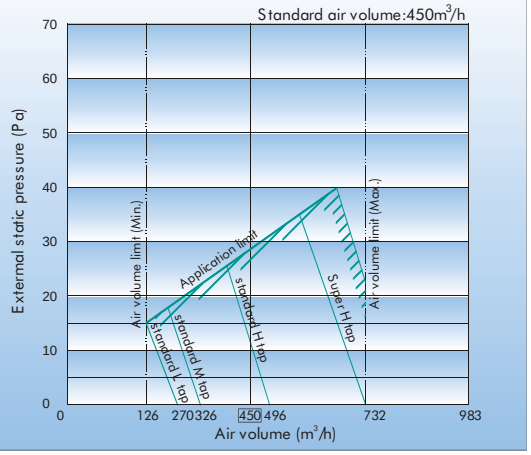
Model（Combined unit）			INV-Pdm1750W4/NaB-H	INV-Pdm1800W4/NaB-H
Model			INV-Pdm400W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H	INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H +INV-Pdm450W/NaB-H
Capacity	Cooling	kW(Btu/h)	175.0(597100)	180.0(614160)
	Heating	kW(Btu/h)	195.0(665340)	200.0(682400)
Noise		dB(A)	65	66
R410A Filling Amount		kg	16+17+17+17	17+17+17+17
Power Supply			38V 3N~60Hz	
Power input	Cooling	kW	12.45+14.32+14.32+14.32	14.32+14.32+14.32+14.32
	Heating	kW	11.2+13.90+13.90+13.90	13.90+13.90+13.90+13.90
Dimensions	Width	mm	1340+1340+1340+1340	1340+1340+1340+1340
	Depth	mm	770+770+770+770	770+770+770+770
	Height	mm	1670+1670+1670+1670	1670+1670+1670+1670
Compressor			（D.C.Inverter Scroll type compressor +constant speed scroll compressor×2） ×4	（D.C.Inverter Scroll type compressor×1 +constant speed scroll compressor×2） ×4
Moisture protection			IP×4	IP×4
Climate Type			T1	T1
Connection Pipes	Gas Pipe	mm	Φ54.1	Φ54.1
		Inch	17/8	17/8
	Liquid Pipe	mm	Φ22.2	Φ25.4
		Inch	7/8	1
		mm	Φ12.7	Φ12.7
		Inch	1/2	1/2
	Connection Method		Brazing Connection	Brazing Connection
Net Weight		kg	250+370+370+370	370+370+370+370
Gross Weight		kg	380+400+400+400	400+400+400+400
Recommended Power Lines	mm^2× number of Lines		10.0×5+10.0×5+10.0×5 +10.0×5	10.0×5+10.0×5+10.0×5 +10.0×5
Dimensions of Package	Width	mm	1420+1420+1420+1420	1420+1420+1420+1420
	Depth	mm	850+850+850+850	850+850+850+850
	Height	mm	1850+1850+1850+1850	1850+1850+1850+1850
Circuit breaker		A	40+40+40+40	40+40+40+40

NOTE:

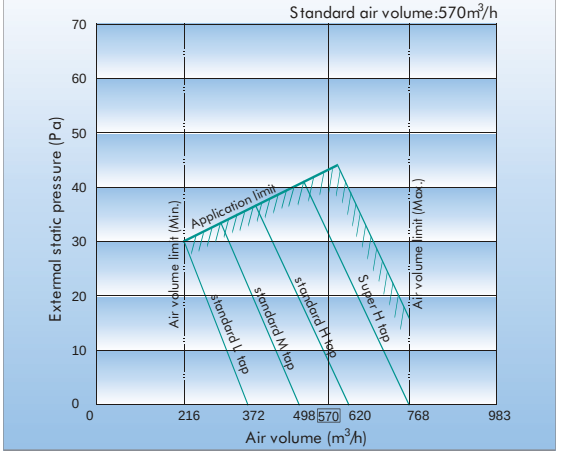
- Cooling : Indoor air temperature 27℃(80.6℉) DB/19℃(66.2℉) WB , Outdoor air temperature 35℃(95℉) DB/24℃(75.2℉) WB.
- Heating : Indoor air temperature 20℃(68℉) DB/15℃(59℉) WB , Outdoor air temperature 7℃(44.6℉) DB/6℃(42.8℉) WB.
- Interior Dimensions：L×W×H：5898×2352×2393,Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2390, Door Opening W×H：2343×2280;
- Interior Dimensions：L×W×H：12032×2350×2697,Door Opening W×H：2338×2585.

9 FAN CHARACTERISTICS

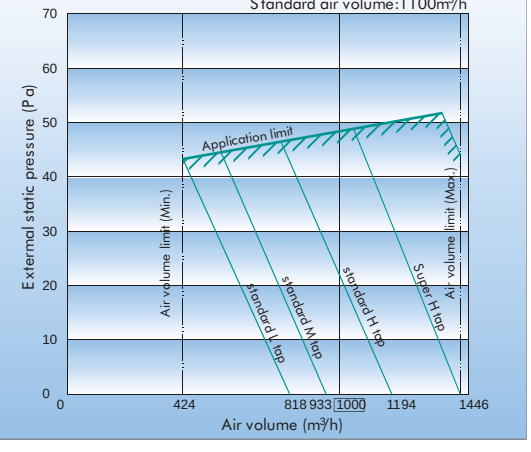
INV-R22P/NaB-D



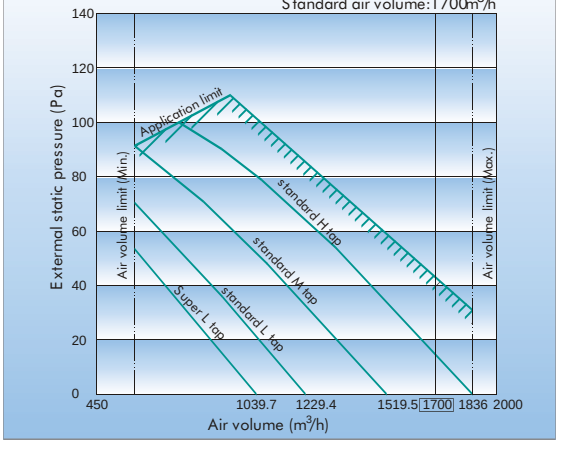
INV-R28P/NaB-D; INV-R36P/NaB-D



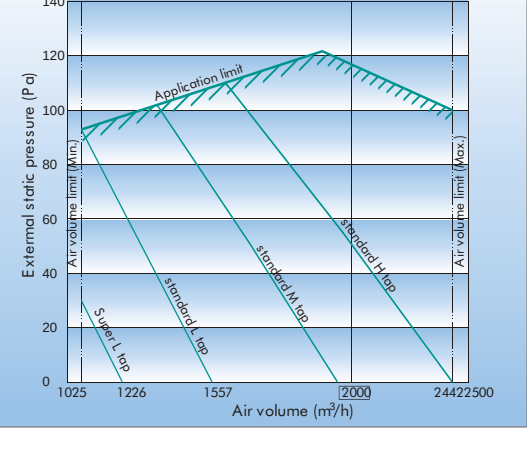
INV-R56P/NaB-D;INV-R71P/NaB-D



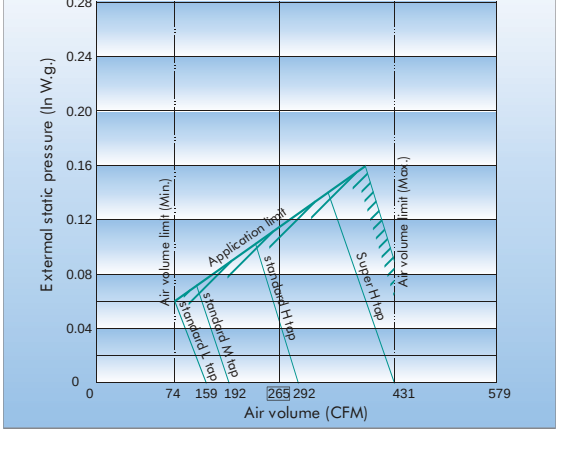
INV-R90P/NaB-D; INV-R112P/NaB-D

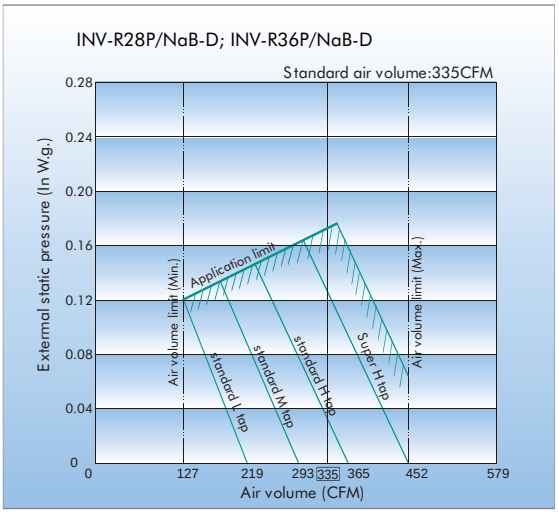


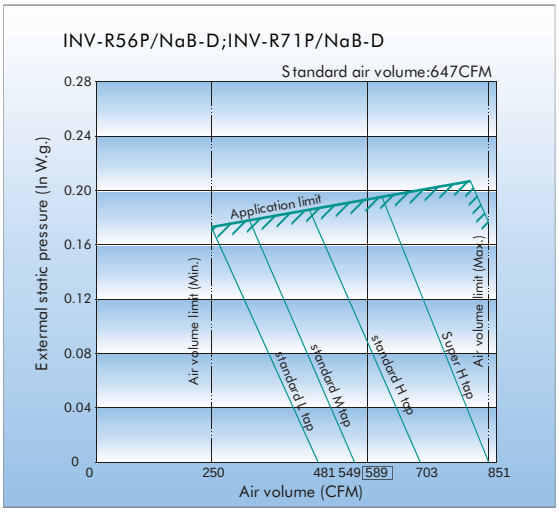
INV-R140P/NaB-D

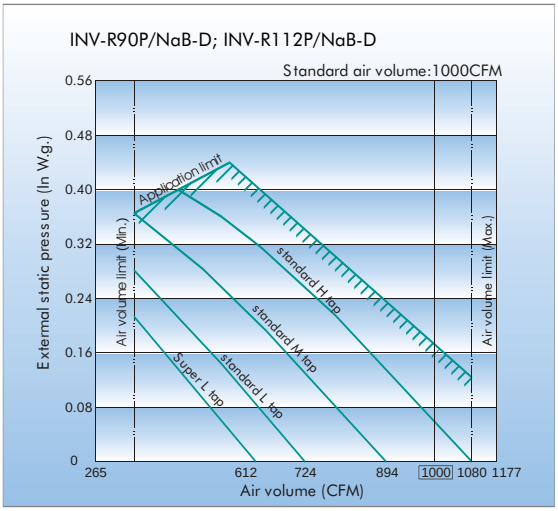


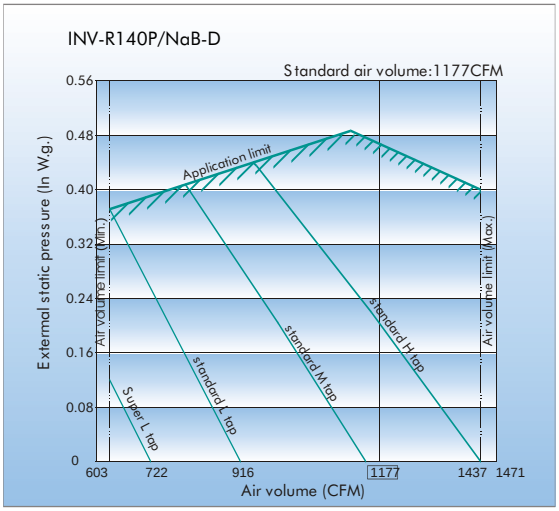
INV-R22P/NaB-D




INV-R28P/NaB-D; INV-R36P/NaB-D
Standard air volume:335CFM
External static pressure (In W.g.)
0.28
0.24
0.20
0.16
0.12
0.08
0.04
0
Application limit
Air volume limit (Min.)
Air volume limit (Max.)
standard L tap
standard M tap
standard H tap
Super H tap
0
127
219
293
335
365
452
579
Air volume (CFM)


INV-R56P/NaB-D;INV-R71P/NaB-D
Standard air volume:647CFM
External static pressure (In W.g.)
0.28
0.24
0.20
0.16
0.12
0.08
0.04
0
Application limit
Air volume limit (Min.)
Air volume limit (Max.)
standard L tap
standard M tap
standard H tap
Super H tap
0
250
481
549
589
703
851
Air volume (CFM)

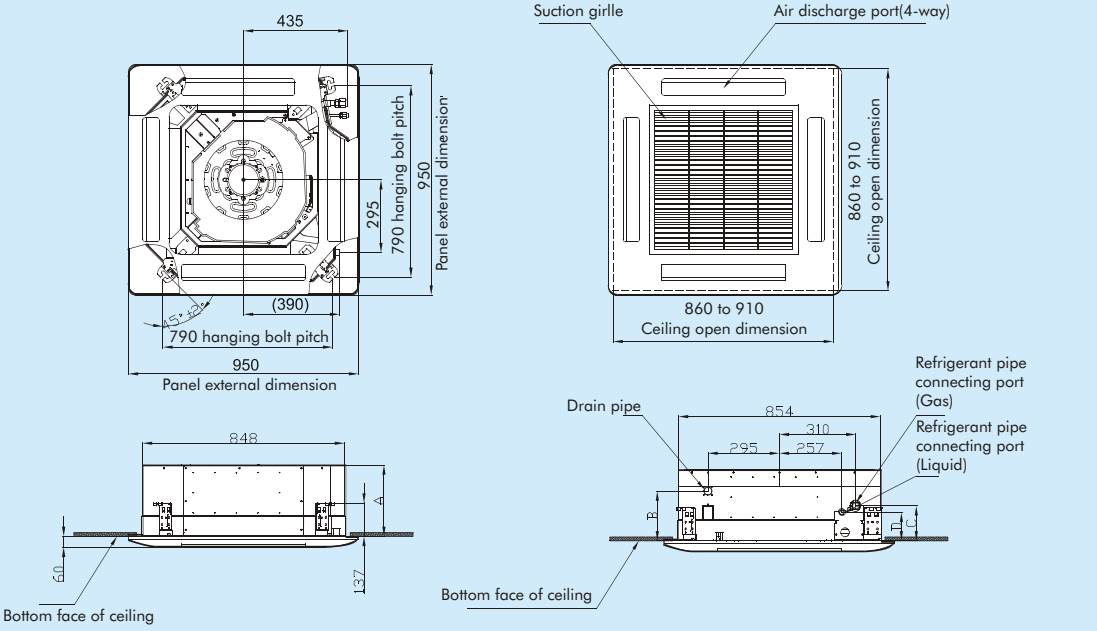

INV-R90P/NaB-D; INV-R112P/NaB-D
Standard air volume:1000CFM
External static pressure (In W.g.)
0.56
0.48
0.40
0.32
0.24
0.16
0.08
0
Application limit
Air volume limit (Min.)
Air volume limit (Max.)
Super L tap
standard L tap
standard M tap
standard H tap
265
612
724
894
1000
1080
1177
Air volume (CFM)


INV-R140P/NaB-D
Standard air volume:1177CFM
External static pressure (In W.g.)
0.56
0.48
0.40
0.32
0.24
0.16
0.08
0
Application limit
Air volume limit (Min.)
Air volume limit (Max.)
Super L tap
standard L tap
standard M tap
standard H tap
603
722
916
1177
1437
1471
Air volume (CFM)

10 DIMENSIONAL DRAWINGS

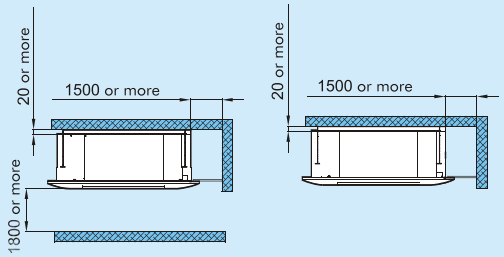
10.1 Indoor Unit

◆ 4-way Air Discharge Cassette Type

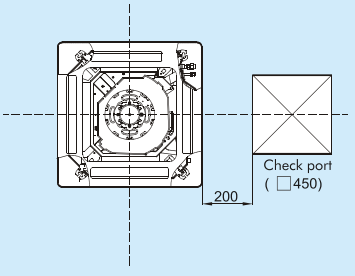


mm

Model	A	B	C	D
INV(L)-R28T/Na-D,INV(L)-R36T/Na-D	190	157	115.5	88.5
INV(L)-R56T/Na-D,INV(L)-R71T/Na-D	240	204	142	115
INV(L)-R90T/Na-D~INVL)-R140T/Na-D	320	200	142	115



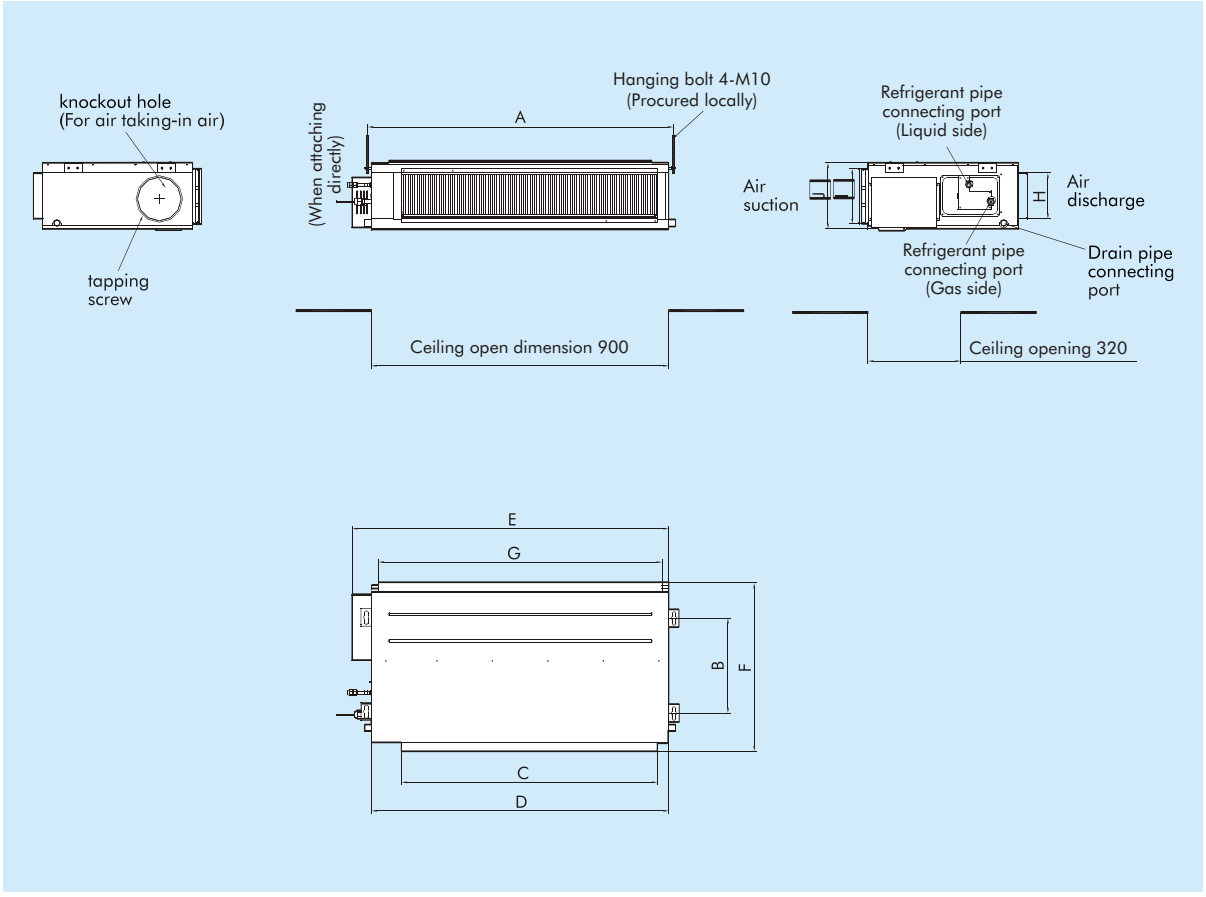
Space required for installation and servicing



◆ Duct Type

Dimensions for :

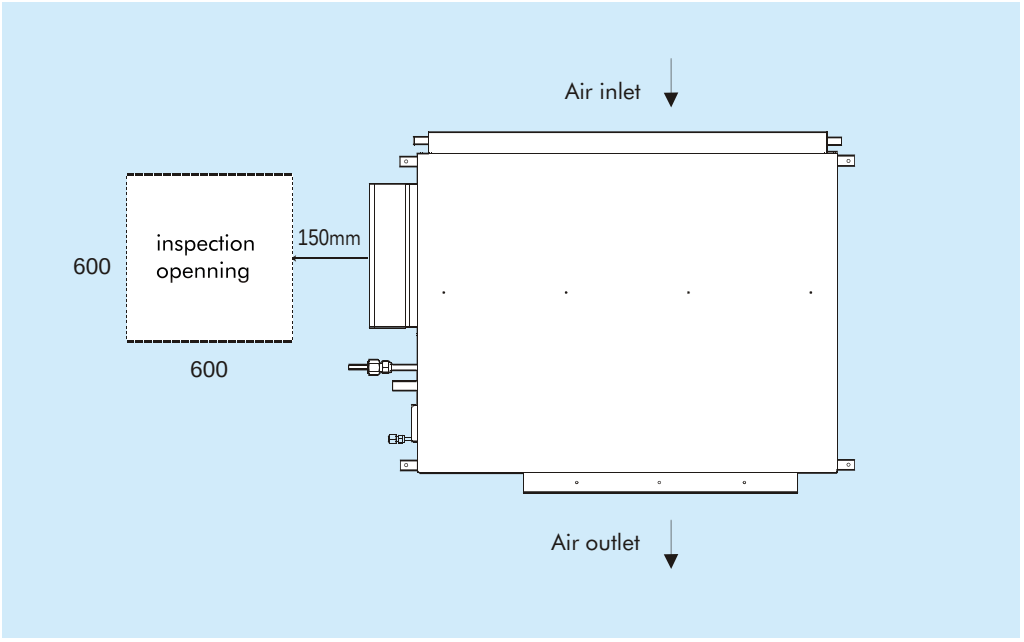
INV(L)-R22P/NaB-D,INV(L)-R28P/NaB-D,INV(L)-R36P/NaB-D ,INV(L)-R56P/NaB-D,
INV(L)-R71P/NaB-D,INV(L)-R90P/NaB-D,INV(L)-R112P/NaB-D ,INV(L)-R140P/NaB-D



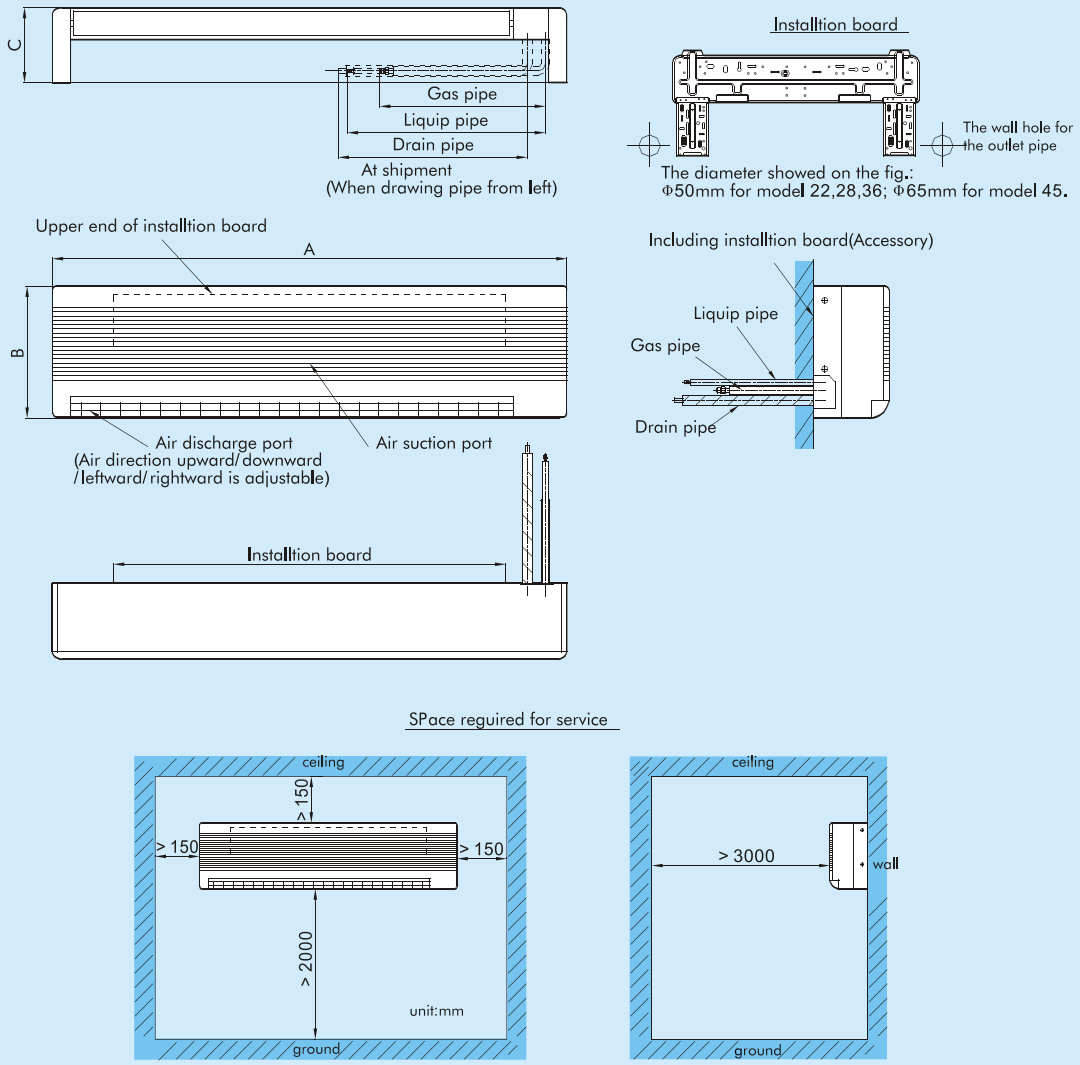
model	A	B	C	D	E	F	G	H	I	J
INV(L)-R22P/NaB-D INV(L)-R28P/NaB-D INV(L)-R36P/NaB-D	840	561	635	790	880	665	738	125	203	250
INV(L)-R56P/NaB-D INV(L)-R71P/NaB-D	1114	420	918	1074	1159	756	1010	207	250	300
INV(L)-R90P/NaB-D INV(L)-R112P/NaB-D INV(L)-R140P/NaB-D	1382	420	1155	1340	1425	738	1280	207	250	300

Note:

Be sure to place a inspection openning at the position indicated in the following figure for maintenance of the equipment.

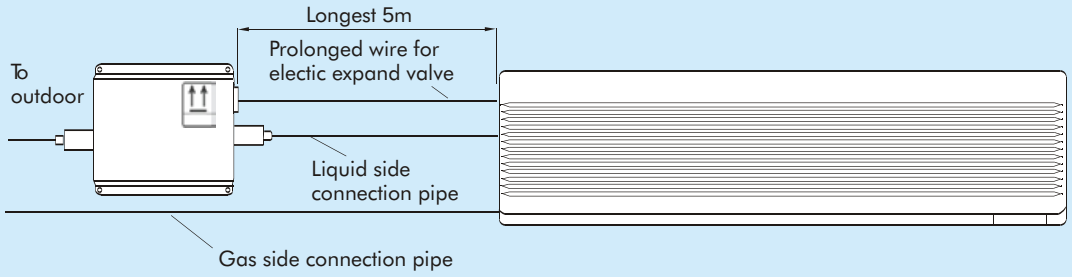


Wall-mounted Type

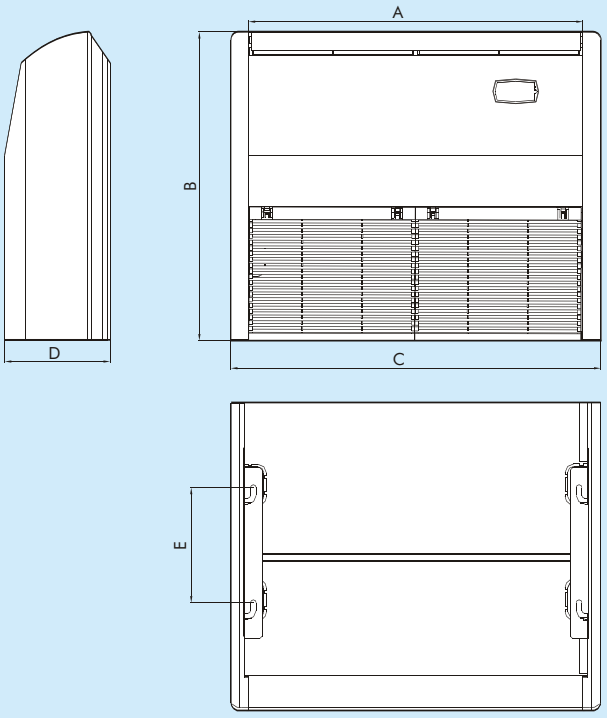


Model	Dimension			Model	Dimension		
	A	B	C		A	B	C
INV(L)-R22G/NaG-D INV(L)-R28G/NaG-D	770	250	190	INV(L)-R36G/NaG-D INV(L)-R45G/NaG-D	830	285	189
INV(L)-R50G/NaG-D INV(L)-R56G/NaG-D	1020	310	228	INV(L)-R63G/NaG- D INV(L)-R71G/NaG- D	1178	326	227

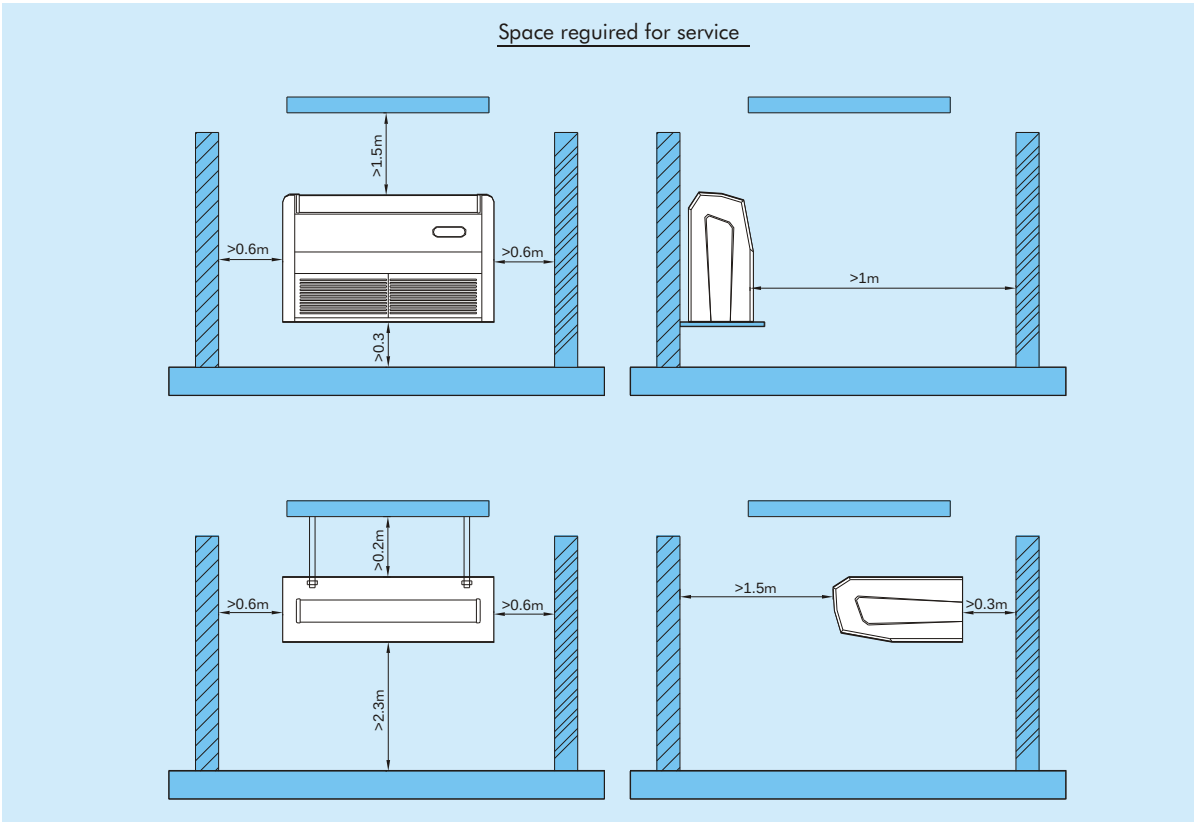
Connect silencing box with liquid side pipe of indoor unit by connection pipe, and also connect it with liquid side pipe of outdoor unit, tighten the connection pipe with joint nut.



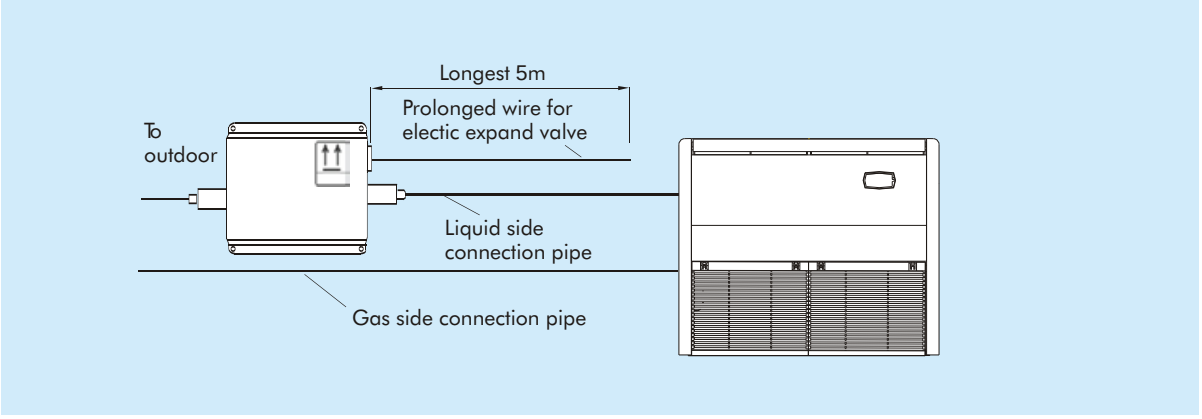
◆ Ceiling Type



Model	A	B	C	D	E
INV(L)-R28Zd/NaB-D	745	695	840	238	260
INV(L)-R36Zd/NaB-D	745	695	840	238	260
INV(L)-R50Zd/NaB-D	745	695	840	238	260
INV(L)-R71Zd/NaB-D	1220	600	1300	188	260
INV(L)-R90Zd/NaB-D	1500	695	1590	238	260
INV(L)-R112Zd/NaB-D	1500	695	1590	238	260
INV(L)-R125Zd/NaB-D	1500	695	1590	238	260

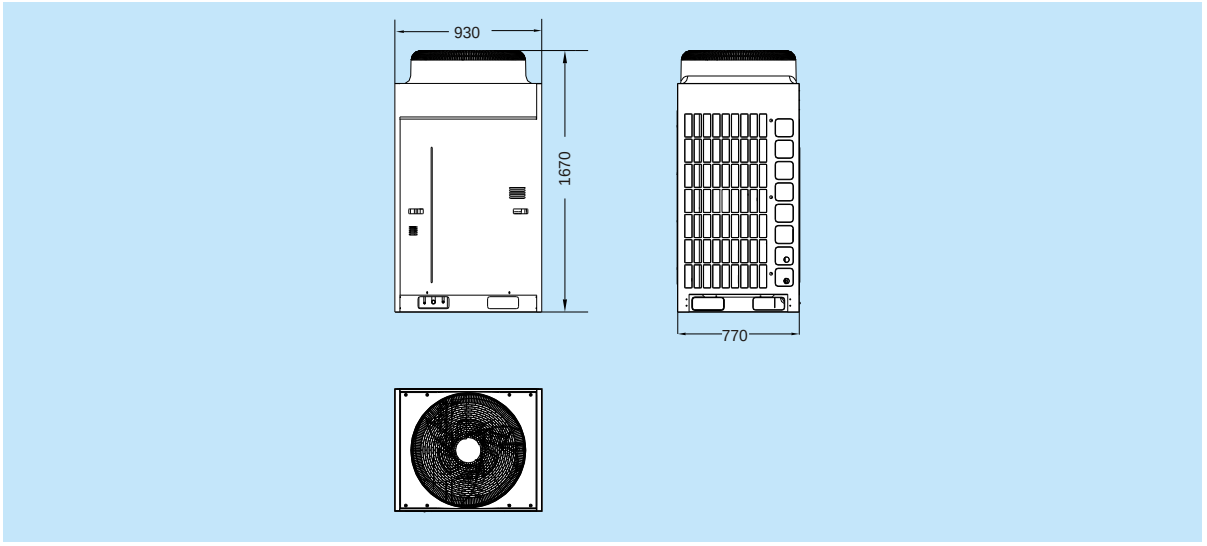


Connect silencing box with liquid side pipe of indoor unit by connection pipe, and also connect it with liquid side pipe of outdoor unit, tighten the connection pipe with joint nut.

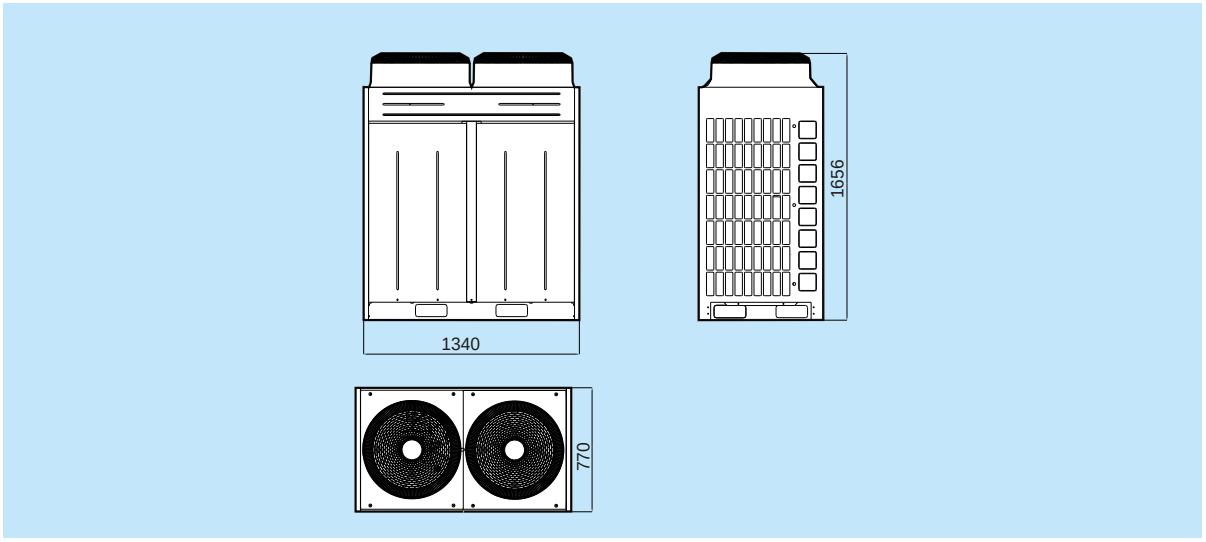


10.2 Outdoor Unit

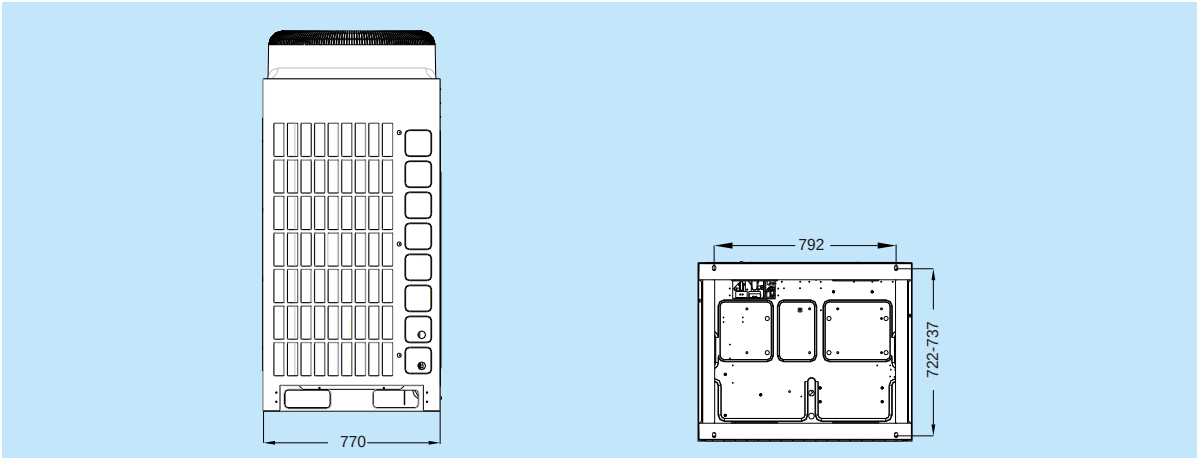
Outline dimension drawing of INV-Pdm224W/NaB-H INV-Pdm280W/NaB-H



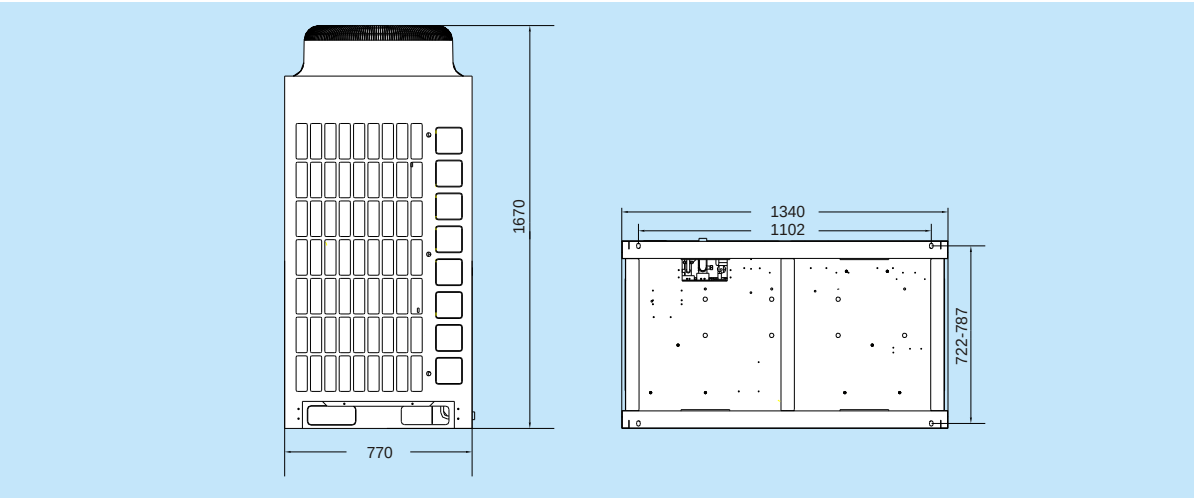
Outline of INV-Pdm335W/NaB-H INV -Pdm400W/NaB-H INV-Pdm450W/NaB-H



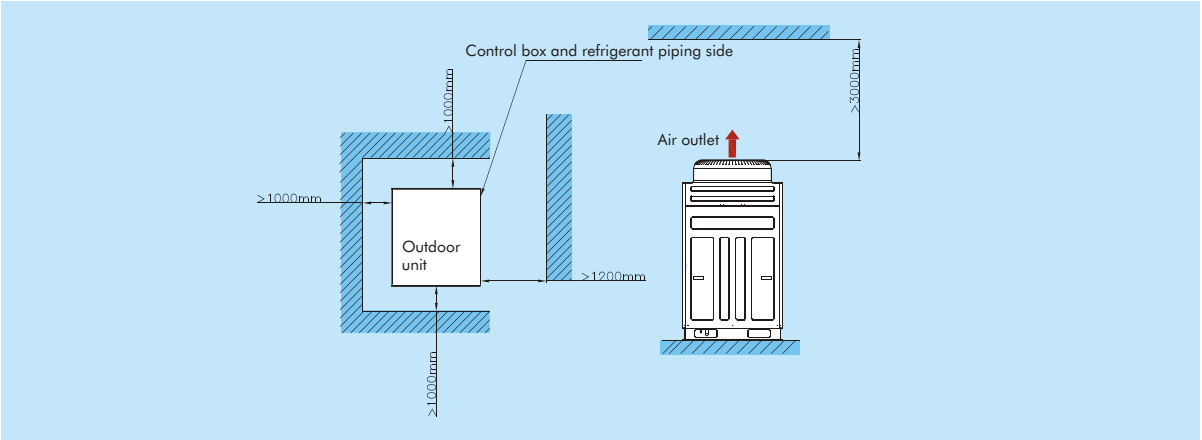
Outdoor Unit Installation Holes
INV-Pdm224W/NaB-H INV-Pdm280W/NaB-H Outdoor Unit Installation Holes



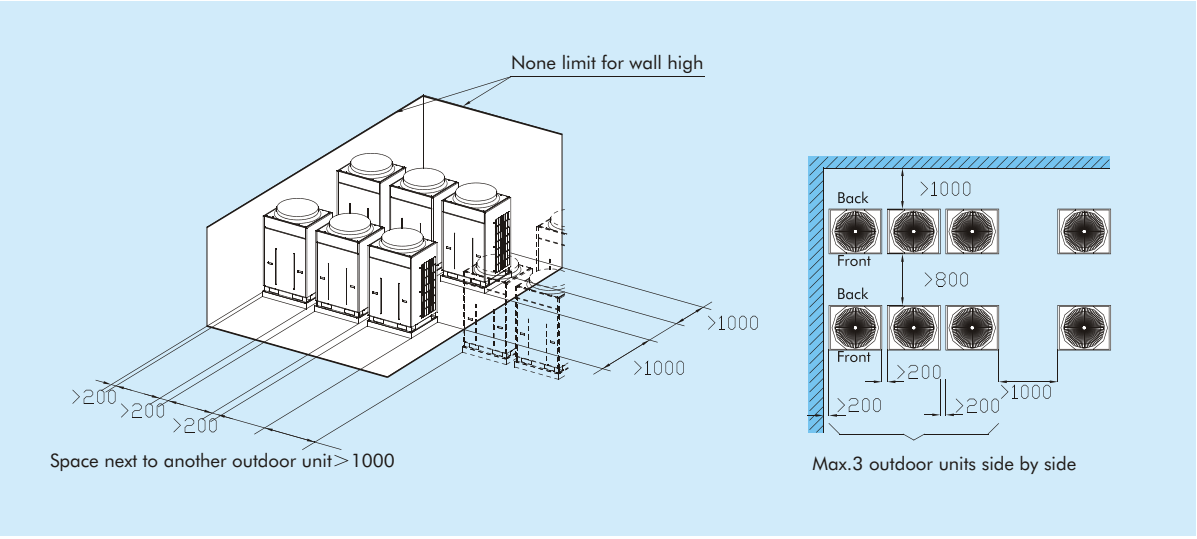
INV-Pdm335W/NaB-H 、INV-Pdm400W/NaB-H 、INV-Pdm450W/NaB-H
Outdoor Unit Installation Holes



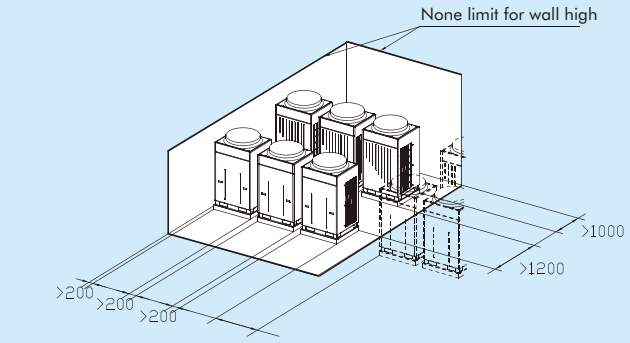
Installation space dimension for stand-alone:



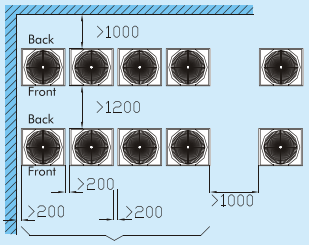
Installation space dimension for several units:



Installation space dimension for several units back to back:

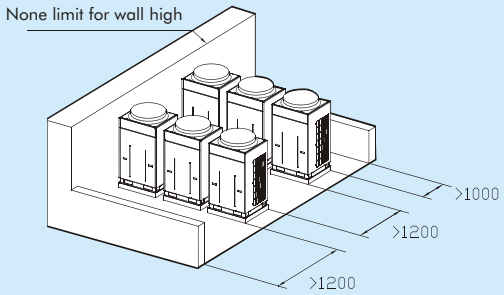


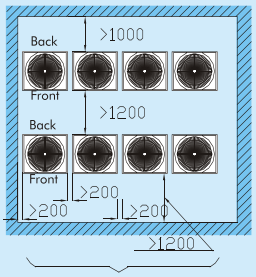
Space next to another outdoor unit >1000



Max.4 outdoor units side by side

Under the circumstance that the units are surrounded by walls, the installation facing to the same direcyion is suggested

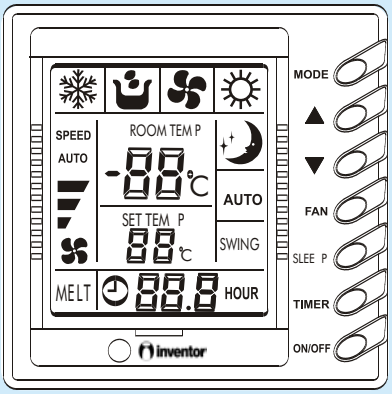




Max.4 outdoor units side by side

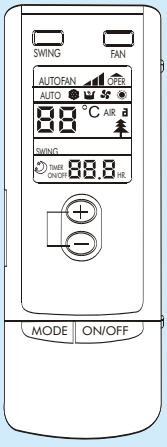
10.3 Controller

◆ Wired Remote Controller



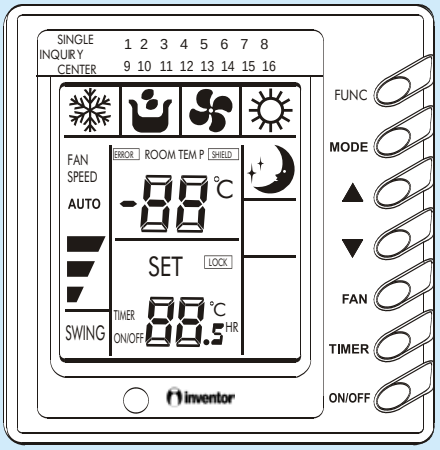
Outline size: 85mm × 85mm × 21mm

◆ Wireless Remote Controller



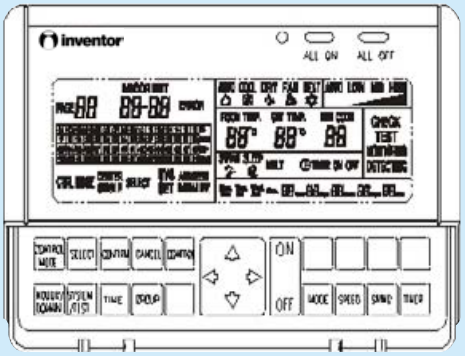
Outline size:160 mm × 57mm × 22mm

◆ Region Controller



Outline size: 85mm × 85mm × 21mm

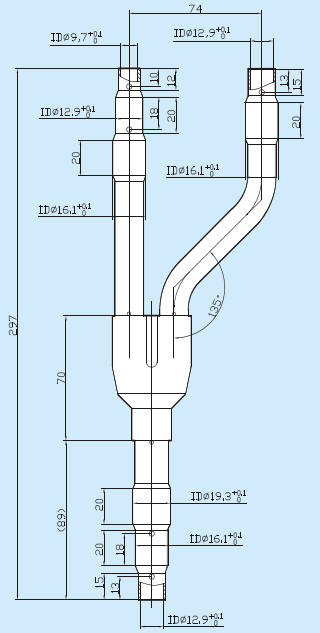
◆ Central Remote Controller



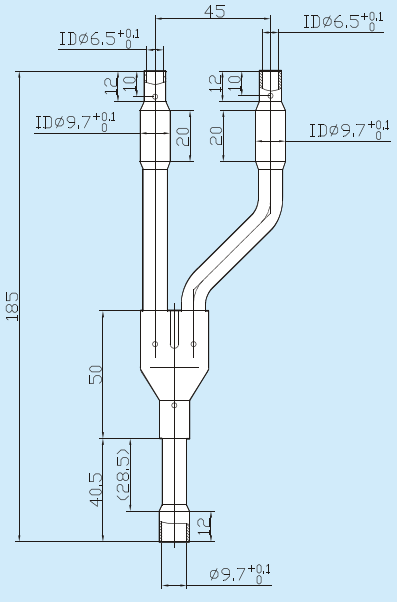
Outline size:185 mm × 135mm × 70mm

FQ01A/A

Gas side

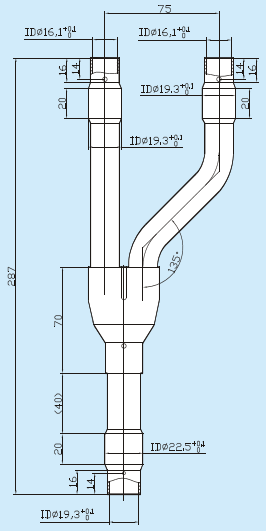


Liquid side

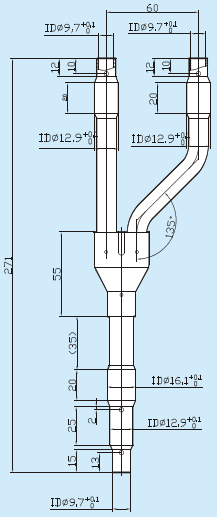


FQ01B/A

Gas side

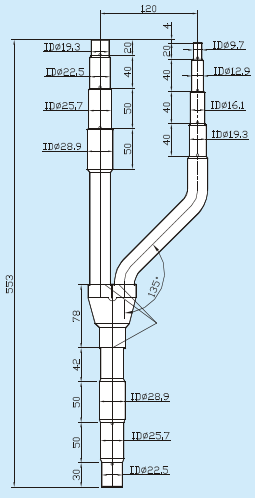


Liquid side

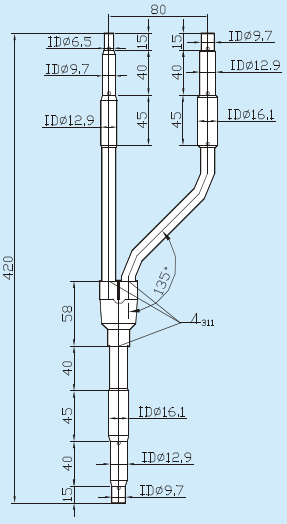


FQ02/A

Gas side



Liquid side



Branching Pipe Diameter ID (mm)	Pipe Diameter OD (Inch)
Φ6.5	1/4
Φ9.7	3/8
Φ12.9	1/2
Φ16.1	5/8
Φ19.3	3/4
Φ22.5	7/8
Φ25.8	1
Φ29	1-1/8