

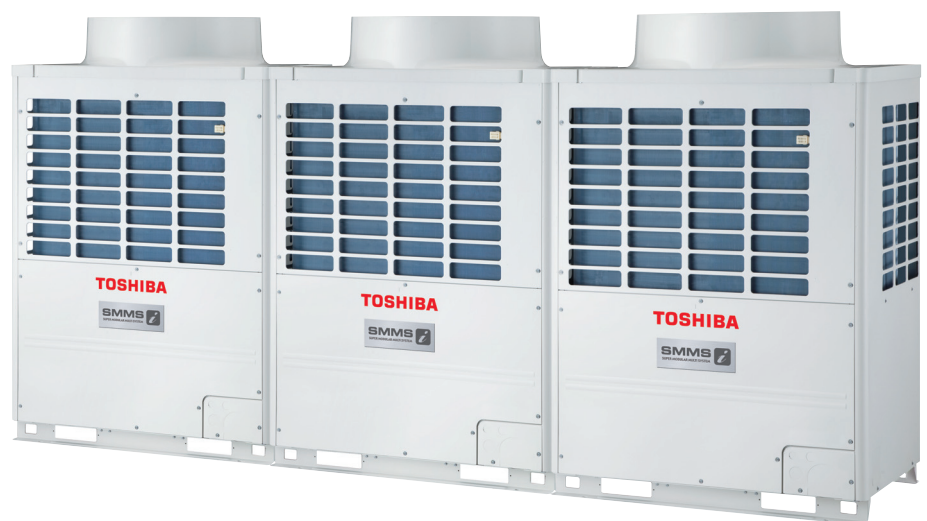
SMMS
SUPER MODULAR MULTI SYSTEM



Engineering Data Book

3 compressors & 3 inverters Super Modular Multi System 

< Full set version >



Notice: Toshiba is committed to continuously improving its products to ensure the highest quality and reliability standards, and to meet local regulations and market requirements. All features and specifications are subject to change without prior notice.



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The engineering data book details all relevant data, charts and drawings to enable you to get the best performance from the Toshiba Super Modular Multi System i for the various applications.

The information is aimed to assist you by providing greater detail of the system and the wider applications that the system will cover.



- Before use, read carefully through the “Safety caution” section to ensure correct operation.
- The important contents concerned to the safety are described in the “Safety Cautions”. Be sure to keep them. For Indications and their meanings, see the following description.

■ Warning Indications on the Air Conditioner Unit

Warning indication		Description
	WARNING	WARNING ELECTRICAL SHOCK HAZARD Disconnect all remote electric power supplies before servicing.
	ELECTRICAL SHOCK HAZARD Disconnect all remote electric power supplies	
	WARNING	WARNING Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.
	Moving parts. Do not operate unit with grille removed.	
	CAUTION	CAUTION High temperature parts. You might get burned when removing this panel.
	High temperature parts. You might get burned when removing this panel.	
	CAUTION	CAUTION Do not touch the aluminium fins of the unit. Doing so may result in injury.
	Do not touch the aluminum fins of the unit. Doing so may result in injury.	
	CAUTION	CAUTION BURST HAZARD Open the service valves before the operation, otherwise there might be the burst.
	BURST HAZARD Open the service valves before the operation,	
	CAUTION	CAUTION Do not climb onto the fan guard. Doing so may result in injury.
	Do not climb onto the fan guard. Doing so may result in	

■ Explanation of indications

WARNING

Indicates possibilities that a death or serious injury of personnel is caused by an incorrect handling.

CAUTION

Indicates contents that an injury (*1) or property damage (*2) only may be caused when an incorrect work has been executed.

*1: "Injury" means a hurt, a burn, or an electric shock which does not require hospitalization or a long-term going to the hospital.

*2: "Property damage means an enlarged damage concerned to property, or breakage of materials.

- **After installation work has finished, check there is no trouble by a test operation, and explain using method and maintenance method to the customers based on the Owner's Manual.**

Please ask the customers to keep this Installation Manual together with the Owner's Manual.

WARNING

Ask a shop or a professional dealer to install the air conditioner.

If you will install by yourself, a fire, an electric shock, or water leak is caused.

Take measures so that the refrigerant does not exceed the limit concentration even if it leaks when installing the air conditioner in a small room.

For the measures not to exceed the limit of concentration, contact the dealer. If the refrigerant leaks and it exceeds the limit of concentration, an accident of oxygen shortage is caused.

Install the air conditioner at a place which is satisfactorily bearable to weight.

If strength is insufficient, the unit may fall down resulting in human injury.

Perform a specified installation work against a strong wind such as typhoon or earthquake.

If the air conditioner is imperfectly installed, an accident by falling or dropping may be caused.

If refrigerant gas leaks during installation work, ventilate the room.

If the leaked refrigerant gas approaches to fire, noxious gas may generate.

After installation work, confirm that refrigerant gas does not leak.

If refrigerant gas leaks in the room, and approaches to fire such as fan heater, stove or kitchen range, generation of noxious gas may be caused.

Never recover refrigerant in the outdoor unit.

Be sure to use a refrigerant recovery device to recover refrigerant in reinstallation or repair work.

Recovery of refrigerant in the outdoor unit is unavailable; otherwise a serious accident such as crack or human injury is caused.

A person qualified for the electric work should deal with the electric construction conforming to the regulations of the local electric company and the Installation Manual. Be sure to use the exclusive circuit.

If there is capacity shortage of the power supply circuit or incomplete installation, a fire or an electric shock is caused.

For cabling, use the specified cables and connect them securely so that external force of cable does not transmit to the terminal connecting section.

If connection or fixing is incomplete, a fire, etc. may be caused.

Be sure to connect earth wire.

Do not connect earth wire to gas pipe, water pipe, lightning rod, nor earth wire of telephone.

If grounding is incomplete, an electric shock is caused.

CAUTION

Do not install the air conditioner at a place where combustible gas may leak.

If gas leaks and is collected at surrounding the unit, the production of fire may be caused.

Be sure to attach an earth leakage breaker; otherwise an electric shock may be caused.

Using a torque wrench, tighten the flare nut in the specified method.

If the flare nut is exceedingly tightened, the flare nut is broken and a refrigerant leakage may be caused after a long time has passed.

Machine Directive (Directive 2006/42/EC)

Please read carefully through these instructions that contain important information which complies with the "Machinery" Directive(Directive 2006/42/EC), and ensure that you understand them.

Generic Denomination: Air Conditioner

Definition of Qualified Installer or Qualified Service Person

The air conditioner must be installed, maintained, repaired and removed by a qualified installer or qualified service person. When any of these jobs is to be done, ask a qualified installer or qualified service person to do them for you. A qualified installer or qualified service person is an agent who has the qualifications and knowledge described in the table below.

Agent	Qualifications and knowledge which the agent must have
Qualified installer	- The qualified installer is a person who installs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. - The qualified installer who is allowed to do the electrical work involved in installation, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. - The qualified installer who is allowed to do the refrigerant handling and piping work involved in installation, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. - The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
Qualified service person	- The qualified service person is a person who installs, repairs, maintains, relocates and removes the air conditioners made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations. - The qualified service person who is allowed to do the electrical work involved in installation, repair, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. - The qualified service person who is allowed to do the refrigerant handling and piping work involved in installation, repair, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work. - The qualified service person who is allowed to work at heights has been trained in matters relating to working at heights with the air conditioners made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

Definition of Protective Gear

When the air conditioner is to be transported, installed, maintained, repaired or removed, wear protective gloves and 'safety' work clothing.

In addition to such normal protective gear, wear the protective gear described below when undertaking the special work detailed in the table below.

Failure to wear the proper protective gear is dangerous because you will be more susceptible to injury, burns, electric shocks and other injuries.

Work undertaken	Protective gear worn
All types of work	Protective gloves 'Safety' working clothing
Electrical-related work	Gloves to provide protection for electricians and from heat Insulating shoes Clothing to provide protection from electric shock
Work done at heights (50 cm or more)	Helmets for use in industry
Transportation of heavy objects	Shoes with additional protective toe cap
Repair of outdoor unit	Gloves to provide protection for electricians and from heat

WARNINGS ON REFRIGERANT LEAKAGE

Check of Concentration Limit

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, and is not restricted by laws to be imposed which protect the ozone layer. 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 nonexistent. With the recent increase in the number of high concentration buildings, however, 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.

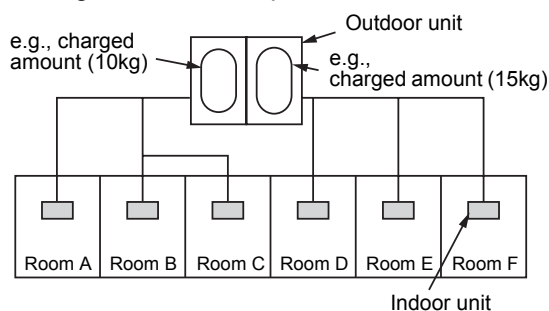
The concentration is as given below.

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

The concentration limit of R410A which is used in multi air conditioners is 0.3kg/m³.

NOTE 1:

If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



For the amount of charge in this example:

The possible amount of leaked refrigerant gas in rooms A, B and C is 10kg.

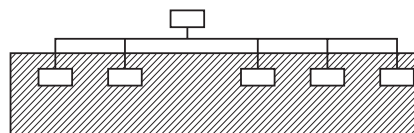
The possible amount of leaked refrigerant gas in rooms D, E and F is 15kg.

Important

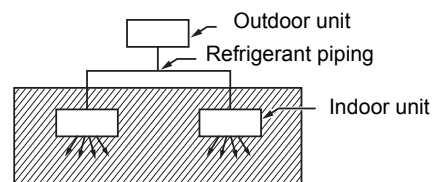
NOTE 2:

The standards for minimum room volume are as follows.

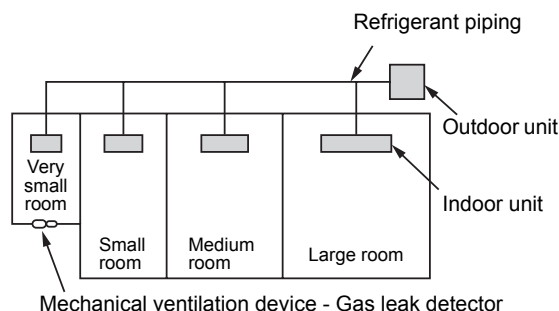
- (1) No partition (shaded portion)



- (2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).

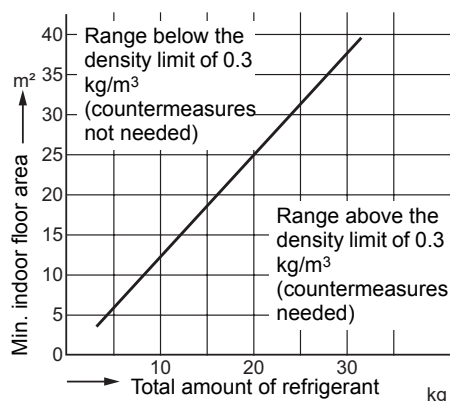


- (3) If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



NOTE 3:

The minimum indoor floor area compared with the amount of refrigerant is roughly as follows: (When the ceiling is 2.7m high)





The next-generation ‘i-quality’ trio

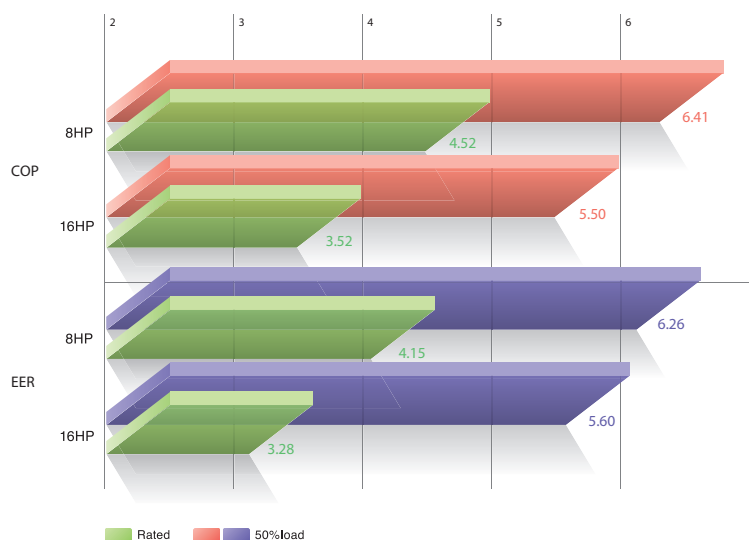
Dedication to innovation and advanced intelligence fosters the imaginative creativity with which we deliver total value in air conditioning systems.

innovation, intelligence and imagination

| Industry leading energy savings

Energy-efficient performance for greater eco-consciousness

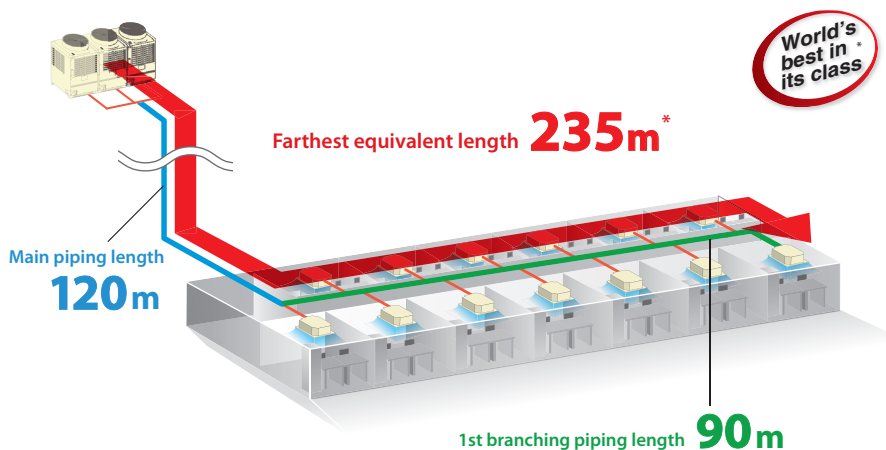
Adopting the highly efficient new DC twin-rotary compressors and advanced vector-controlled inverters realizes a COP of 6.41 (under 50% partial load). Greater operating performance is now possible when operating under a constant load.



| Industry leading pipe length for greater flexibility

Layout flexibility with few design limitations

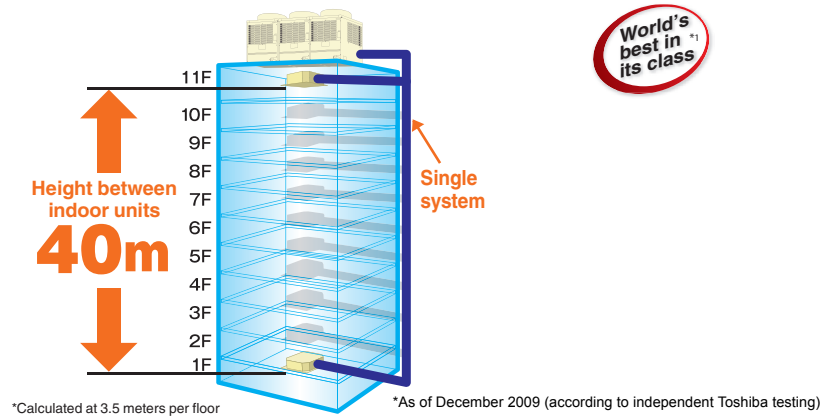
System layouts can use a maximum equivalent distance of up to 235 metres. This makes it much easier to design for floors with many small rooms, or for tenants who often rearrange their floor layouts.



* As of December 2009 (according to independent Toshiba testing)

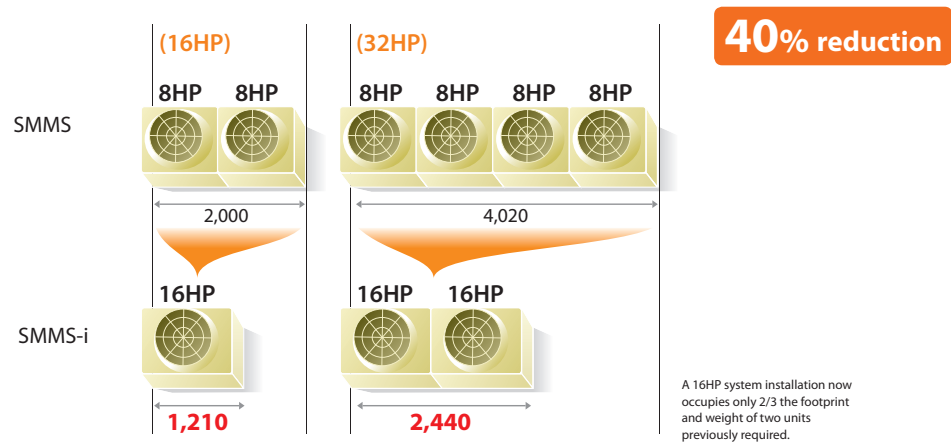
Greater support for height differences between indoor units

Toshiba SMMS-i leads the industry with support for height differences of up to 40 metres between indoor units on a single system. For instance, in an 11-story building, this is enough height to fully cover the entire floor as well as the elevator halls.



Industry leading installation flexibility

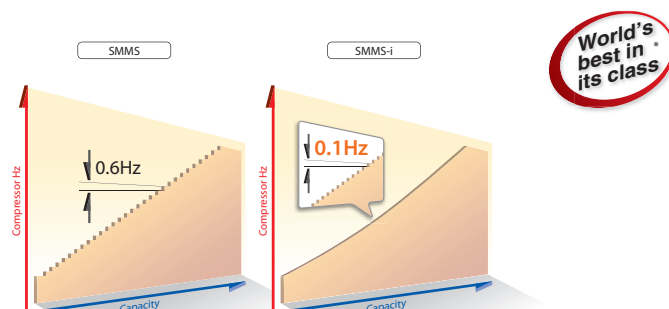
The outdoor units improve performance to achieve greater space efficiency that defies their compact module size to deliver greater freedom in layout design. This minimizes weight-related restrictions and allows for quicker installation.



Infinity variable control

Ultra-precise 0.1 Hz control over compressor rotation speed

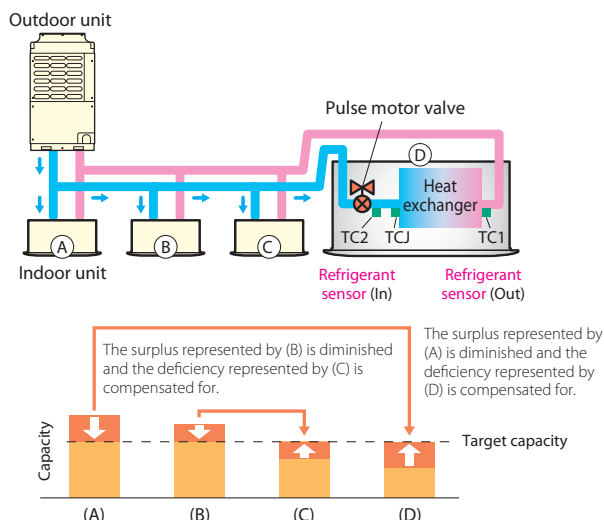
Infinity variable control adjusts compressor rotation speed in near-seamless 0.1 Hz steps. Responding precisely to the capacity needs of the moment, this fine control minimizes energy loss when changing frequencies, and also creates a comfortable environment subject to minimal temperature variations.



*As of December 2009 (according to independent Toshiba testing)

Optimal refrigerant control

- When a multiple number of indoor units are connected, an insufficient or excess amount of refrigerant may be supplied to indoor units depending on the difference in length of the connection pipe from the outdoor unit.
- This is caused by pressure loss and heat leaks as the refrigerant travels through the pipes, resulting in incorrect amounts of refrigerant being supplied to the indoor units.
- Optimal refrigerant flow control featuring intelligent control over the refrigerant sensors and opening rate of individual pulse motor valves realizes stable indoor temperatures throughout a building with height differences of up to 40m between indoor units.

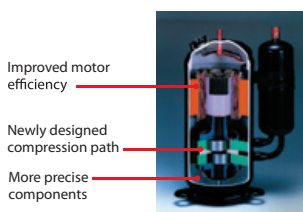


Introducing high-performance outdoor units with 3 compressors and 3 inverters*1

① New DC twin-rotary compressor

Leading the world with Toshiba's own new DC twin-rotary compressor

Three new DC twin-rotary compressors that feature outstanding capacity under partial load drive the 14 and 16HP outdoor unit models, while two are used by the other outdoor unit models. These new compressors improve both energy efficiency and comfort levels.



New DC twin-rotary compressor

Optimization of discharge port positioning and blade thickness reduces compression loss and friction resistance. Increasing the surface area of the rotor magnets and the addition of slits realize greater efficiency and reduced noise.



Twin-rotary

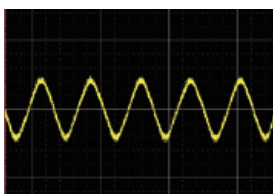
Each motor employs a compact and powerful magnetic rotor (rare earth magnet) and features reduced eddy-current loss.



② Fast-calculating vector-controlled inverter

All-inverter control realizes finer control over operation to match the load on the system

Toshiba SMMS-i leads the industry in controlling all 3 compressors with a dedicated inverter board that taps the compressor's full potential to provide smoother operation.



Smooth sine curve

The fast-calculating vector-controlled inverter produces a smooth sine curve that improves operating efficiency.



Circuit board

The vector-controlled inverter quickly converts current into a smooth sine curve to achieve smoother operation of the compressor's DC motor.

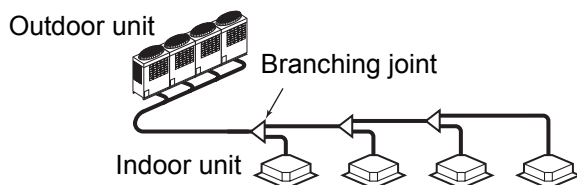
*1 14 and 16HP models

4-1. OUTLINE OF TOSHIBA SMMS-i (Super Modular Multi System-i)

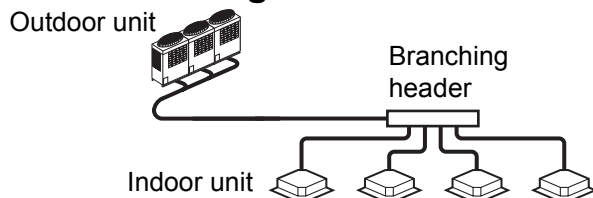
◆ Shortest route design by free branching

The Combination of line and header branching is highly flexible. Following the shortest design route possible, thereby saving on installation time and cost. Line/header branching after the header branching is only available with TOSHIBA SMMS-i.

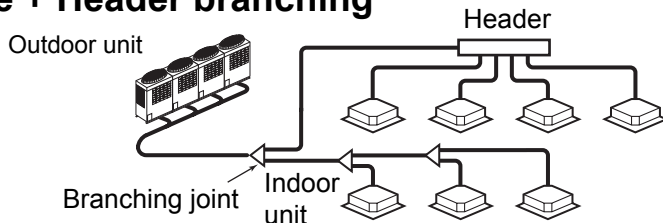
Line branching



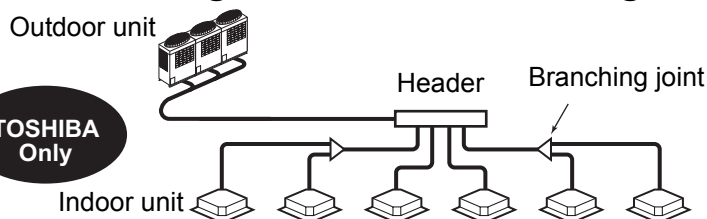
Header branching



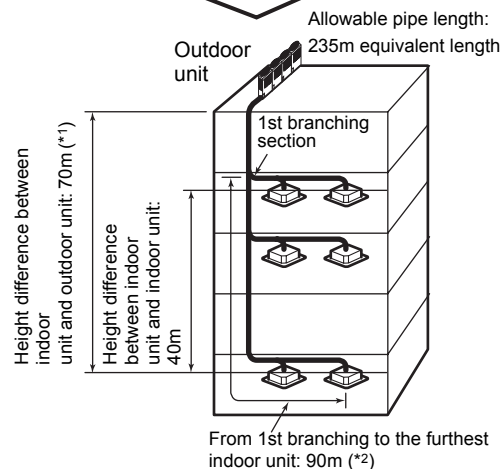
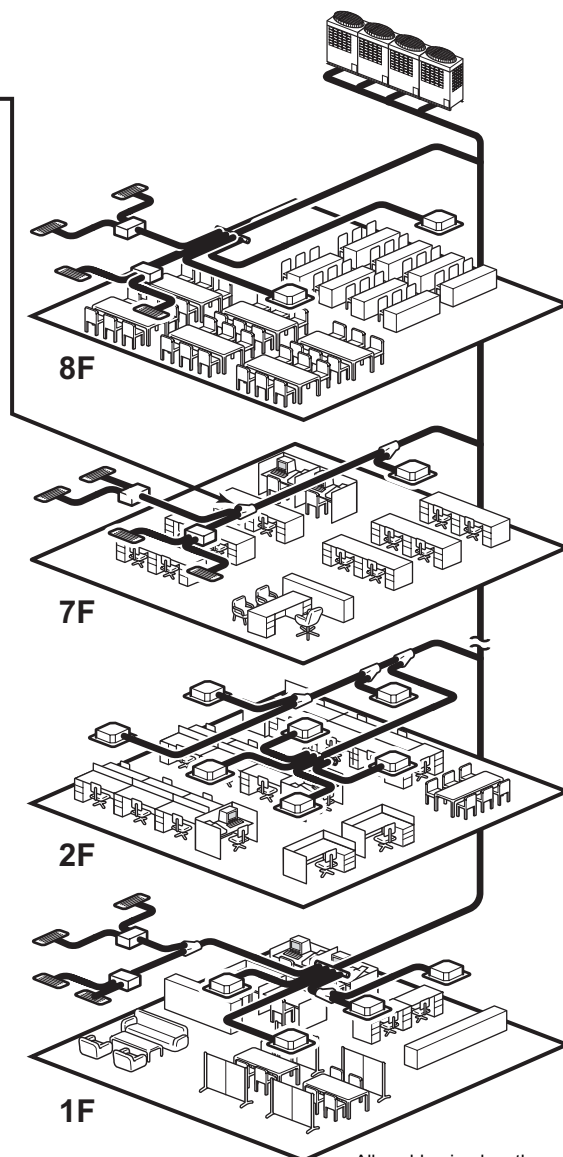
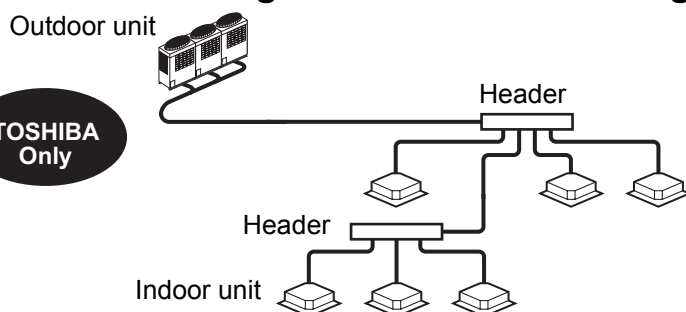
Line + Header branching



Line branching after header branching



Header branching after header branching



*1: If the height difference between (H2) indoor units exceeds 3m, set below 50m.

*2: If the height difference between (H1) indoor and outdoor units exceeds 3m, set below 65m.

4-2. SUMMARY OF SYSTEM EQUIPMENTS

Equipment

Outdoor units

* SMMS outdoor unit

Corresponding HP			Inverter unit						Appearance
			5HP*	6HP*	8HP	10HP	12HP	14HP	
Model name	Heat pump only	MMY-	MAP0501HT8-E	MAP0601HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1204HT8-E	MAP1404HT8-E	
			MAP0501T8-E	MAP0601T8-E	MAP0804T8-E	MAP1004T8-E	MAP1204T8-E	MAP1404T8-E	
Cooling capacity (kW)			14.0	16.0	22.4	28.0	33.5	40.0	
Heating capacity (kW)			16.0	18.0	25.0	31.5	37.5	45.0	
No. of connectable indoor units			8	10	13	16	20	23	27

Combination of outdoor units

Standard model

Corresponding HP	18HP	20HP	22HP	24HP	26HP	28HP	30HP	32HP
Combined Model	MMY-AP3141HT8-E	AP2014HT8-E	AP2214HT8-E	AP2414HT8-E	AP2614HT8-E	AP2814HT8-E	AP3014HT8-E	AP3214HT8-E
Cooling capacity (kW)	50.4	56.0	61.5	68.0	73.0	78.5	85.0	90.0
Heating capacity (kW)	56.5	63.0	69.0	76.5	81.5	88.0	95.0	100.0
Combined outdoor units	10HP	10HP	12HP	12HP	16HP	16HP	16HP	16HP
	8HP	10HP	10HP	12HP	10HP	12HP	14HP	16HP
	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
No. of connectable indoor units	30	33	37	40	43	47	48	48

Corresponding HP	34HP	36HP	38HP	40HP	42HP	44HP	46HP	48HP
Combined Model	MMY-AP3414HT8-E	AP3614HT8-E	AP3814HT8-E	AP4014HT8-E	AP4214HT8-E	AP4414HT8-E	AP4614HT8-E	AP4814HT8-E
Cooling capacity (kW)	96.0	101.0	106.5	112.0	118.0	123.5	130.0	135.0
Heating capacity (kW)	108.0	113.0	119.5	127.0	132.0	138.0	145.0	150.0
Combined outdoor units	12HP	12HP	16HP	16HP	16HP	16HP	16HP	16HP
	12HP	12HP	12HP	12HP	14HP	16HP	16HP	16HP
	10HP	12HP	10HP	12HP	12HP	12HP	14HP	16HP
	—	—	—	—	—	—	—	—
No. of connectable indoor units	48	48	48	48	48	48	48	48

High efficiency model

Corresponding HP	16HP	24HP	26HP	28HP	30HP	32HP	34HP	36HP
Combined Model	MMY-AP1624HT8-E	AP2424HT8-E	AP2624HT8-E	AP2824HT8-E	AP3024HT8-E	AP3224HT8-E	AP3424HT8-E	AP3624HT8-E
Cooling capacity (kW)	45.0	68.0	73.0	78.5	85.0	90.0	96.0	101.0
Heating capacity (kW)	50.0	76.5	81.5	88.0	95.0	100.0	108.0	113.0
Combined outdoor units	8HP	8HP	10HP	10HP	10HP	8HP	10HP	10HP
	8HP	8HP	8HP	10HP	10HP	8HP	8HP	10HP
	—	8HP	8HP	8HP	10HP	8HP	8HP	8HP
	—	—	—	—	—	8HP	8HP	8HP
No. of connectable indoor units	27	40	43	47	48	48	48	48

Corresponding HP	38HP	40HP	42HP	44HP	46HP	48HP
Combined Model	MMY-AP3824HT8-E	AP4024HT8-E	AP4224HT8-E	AP4424HT8-E	AP4624HT8-E	AP4824HT8-E
Cooling capacity (kW)	106.5	112.0	118.0	123.5	130.0	135.0
Heating capacity (kW)	119.5	127.0	132.0	138.0	145.0	150.0
Combined outdoor units	10HP	10HP	12HP	12HP	12HP	12HP
	10HP	10HP	10HP	12HP	12HP	12HP
	10HP	10HP	10HP	10HP	12HP	12HP
	8HP	10HP	10HP	10HP	10HP	12HP
No. of connectable indoor units	48	48	48	48	48	48

Branching joints and headers

	Model name	Usage (Classification according to capacity code (*1))				Appearance
Y-shape branching joint (*) ⁽³⁾	RBM-BY55E	Indoor unit: Total below 6.4				
	RBM-BY105E	Indoor unit: Total 6.4 or more and below 14.2 (*) ⁽²⁾				
	RBM-BY205E	Indoor unit: Total 14.2 or more and below 25.2 (*) ⁽²⁾				
	RBM-BY305E	Indoor unit: Total 25.2 or more (*) ⁽²⁾				
4-branching header (*) ⁽³⁾ (*) ⁽⁴⁾ (*) ⁽⁵⁾	RBM-HY1043E	Indoor unit: Total below 14.2		Max.4 branches		
	RBM-HY2043E	Indoor unit: Total 14.2 or more and below 25.2				
8-branching header (*) ⁽³⁾ (*) ⁽⁴⁾ (*) ⁽⁵⁾	RBM-HY1083E	Indoor unit: Total below 14.2		Max.8 branches		
	RBM-HY2083E	Total 14.2 or more and below 25.2				
Branching joint for connection of outdoor units (1set of 1type of Y-shape joint pipe and 2types of T-joint pipes as described right.)	RBM-BT14E	Capacity code	Piping at gas side (Y-shape)	Piping at liquid side (T-shape)	Balance pipe (T-shape)	
		Total below 26	ø31.8  ø28.6 ø25.4	ø19.1  ø19.1	ø9.5  ø9.5	
	RBM-BT24E	Total 26 or more	ø38.1  ø38.1 ø28.6	ø22.2  ø22.2	ø9.5  ø9.5	
				ø22.2  ø22.2	ø9.5  ø9.5	

*1 "Capacity code" can be obtained by the lists in chapter 4-3 and 4-4.(Capacity code is not actual capacity.)

*2 If total capacity code value of indoor unit exceeds that of outdoor unit, apply capacity code of outdoor unit.

*3 In 1st branching, select according to the capacity code of the outdoor unit.

*4 Max capacity code of 6.0 in total is connectable to one line after branching header.

*5 When capacity code of outdoor units is 12 or more and using of 1st branching, use RBM-HY-2043E or RBM-HY-2083E. And if the code is 26 or more, it is not used for 1st branching.

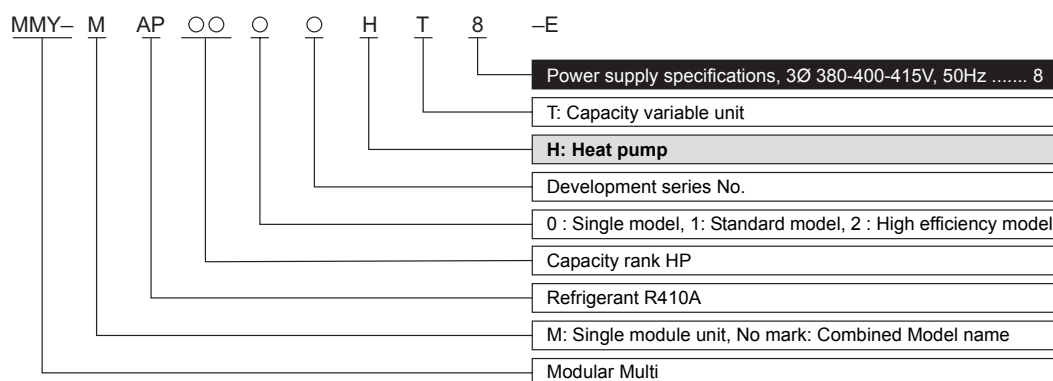
4-3. List of product and combined model name

Heat Pump model

HP (Capacity code)	Model name MMY-	No. of combined units	Inverter 5HP MMY-	Used Qty	Inverter 6HP MMY-	Used Qty	Inverter 8HP MMY-	Used Qty	Inverter 10HP MMY-	Used Qty	Inverter 12HP MMY-	Used Qty	Inverter 14HP MMY-	Used Qty	Inverter 16HP MMY-	Used Qty
Standard model																
5HP(5)*	MAP0501HT8-E	1	MAP0501HT8-E	1												
6HP(6)*	MAP0601HT8-E	1			MAP0601HT8-E	1										
8HP(8)	MAP0804HT8-E	1					MAP0804HT8-E	1								
10HP(10)	MAP1004HT8-E	1							MAP1004HT8-E	1						
12HP(12)	MAP1204HT8-E	1									MAP1204HT8-E	1				
14HP(14)	MAP1404HT8-E	1											MAP1404HT8-E	1		
16HP(16)	MAP1604HT8-E	1													MAP1604HT8-E	1
18HP(18)	AP1814HT8-E	2					MAP0804HT8-E	1	MAP1004HT8-E	1						
20HP(20)	AP2014HT8-E	2							MAP1004HT8-E	2						
22HP(22)	AP2214HT8-E	2							MAP1004HT8-E	1	MAP1204HT8-E	1				
24HP(24)	AP2414HT8-E	2									MAP1204HT8-E	2				
26HP(26)	AP2614HT8-E	2							MAP1004HT8-E	1					MAP1604HT8-E	1
28HP(28)	AP2814HT8-E	2									MAP1204HT8-E	1			MAP1604HT8-E	1
30HP(30)	AP3014HT8-E	2											MAP1404HT8-E	1	MAP1604HT8-E	1
32HP(32)	AP3214HT8-E	2													MAP1604HT8-E	2
34HP(34)	AP3414HT8-E	3							MAP1004HT8-E	1	MAP1204HT8-E	2				
36HP(36)	AP3614HT8-E	3									MAP1204HT8-E	3				
38HP(38)	AP3814HT8-E	3							MAP1004HT8-E	1	MAP1204HT8-E	1			MAP1604HT8-E	1
40HP(40)	AP4014HT8-E	3									MAP1204HT8-E	2			MAP1604HT8-E	1
42HP(42)	AP4214HT8-E	3									MAP1204HT8-E	1	MAP1404HT8-E	1	MAP1604HT8-E	1
44HP(44)	AP4414HT8-E	3									MAP1204HT8-E	1			MAP1604HT8-E	2
46HP(46)	AP4614HT8-E	3											MAP1404HT8-E	1	MAP1604HT8-E	2
48HP(48)	AP4814HT8-E	3													MAP1604HT8-E	3
High efficiency model																
16HP(16)	AP1624HT8-E	2					MAP0804HT8-E	2								
24HP(24)	AP2424HT8-E	3					MAP0804HT8-E	3								
26HP(26)	AP2624HT8-E	3							MAP1004HT8-E	1						
28HP(28)	AP2824HT8-E	3					MAP0804HT8-E	1	MAP1004HT8-E	2						
30HP(30)	AP3024HT8-E	3							MAP1004HT8-E	3						
32HP(32)	AP3224HT8-E	4					MAP0804HT8-E	4								
34HP(34)	AP3424HT8-E	4					MAP0804HT8-E	3	MAP1004HT8-E	1						
36HP(36)	AP3624HT8-E	4					MAP0804HT8-E	2	MAP1004HT8-E	2						
38HP(38)	AP3824HT8-E	4					MAP0804HT8-E	1	MAP1004HT8-E	3						
40HP(40)	AP4024HT8-E	4							MAP1004HT8-E	4						
42HP(42)	AP4224HT8-E	4							MAP1004HT8-E	3	MAP1204HT8-E	1				
44HP(44)	AP4424HT8-E	4							MAP1004HT8-E	2	MAP1204HT8-E	2				
46HP(46)	AP4624HT8-E	4							MAP1004HT8-E	1	MAP1204HT8-E	3				
48HP(48)	AP4824HT8-E	4									MAP1204HT8-E	4				

* : SMMS outdoor unit

1. Allocation standard of model name



2. Rang of combined capacity

No. of combined units: 1 to 4 units

Capacity of combined units: 16 HP(16type) to 48 HP(48type)

3. Rated conditions

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

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

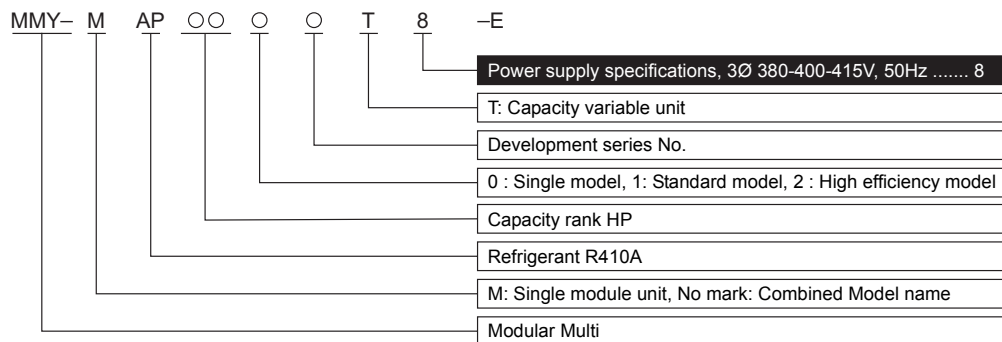


Cooling Only model

HP(Capacity code)	Model name MMY-	No. of combined units	Inverter 5HP MMY-	Used Qty	Inverter 6HP MMY-	Used Qty	Inverter 8HP MMY-	Used Qty	Inverter 10HP MMY-	Used Qty	Inverter 12HP MMY-	Used Qty	Inverter 14HP MMY-	Used Qty	Inverter 16HP MMY-	Used Qty
Standard model																
5HP(5)*	MAP0501T8-E	1	MAP0501T8-E	1												
6HP(6)*	MAP0601T8-E	1			MAP0601T8-E	1										
8HP(8)	MAP0804T8-E	1					MAP0804T8-E	1								
10HP(10)	MAP1004T8-E	1							MAP1004T8-E	1						
12HP(12)	MAP1204T8-E	1									MAP1204T8-E	1				
14HP(14)	MAP1404T8-E	1											MAP1404T8-E	1		
16HP(16)	MAP1604T8-E	1													MAP1604T8-E	1
18HP(18)	AP1814T8-E	2					MAP0804T8-E	1	MAP1004T8-E	1						
20HP(20)	AP2014T8-E	2							MAP1004T8-E	2						
22HP(22)	AP2214T8-E	2							MAP1004T8-E	1	MAP1204T8-E	1				
24HP(24)	AP2414T8-E	2									MAP1204T8-E	2				
26HP(26)	AP2614T8-E	2							MAP1004T8-E	1					MAP1604T8-E	1
28HP(28)	AP2814T8-E	2									MAP1204T8-E	1			MAP1604T8-E	1
30HP(30)	AP3014T8-E	2											MAP1404T8-E	1	MAP1604T8-E	1
32HP(32)	AP3214T8-E	2													MAP1604T8-E	2
34HP(34)	AP3414T8-E	3							MAP1004T8-E	1	MAP1204T8-E	2				
36HP(36)	AP3614T8-E	3									MAP1204T8-E	3				
38HP(38)	AP3814T8-E	3							MAP1004T8-E	1	MAP1204T8-E	1			MAP1604T8-E	1
40HP(40)	AP4014T8-E	3									MAP1204T8-E	2			MAP1604T8-E	1
42HP(42)	AP4214T8-E	3									MAP1204T8-E	1	MAP1404T8-E	1	MAP1604T8-E	1
44HP(44)	AP4414T8-E	3									MAP1204T8-E	1			MAP1604T8-E	2
46HP(46)	AP4614T8-E	3											MAP1404T8-E	1	MAP1604T8-E	2
48HP(48)	AP4814T8-E	3													MAP1604T8-E	3
High efficiency model																
16HP(16)	AP1624T8-E	2					MAP0804T8-E	2								
24HP(24)	AP2424T8-E	3					MAP0804T8-E	3								
26HP(26)	AP2624T8-E	3					MAP0804T8-E	2	MAP1004T8-E	1						
28HP(28)	AP2824T8-E	3					MAP0804T8-E	1	MAP1004T8-E	2						
30HP(30)	AP3024T8-E	3							MAP1004T8-E	3						
32HP(32)	AP3224T8-E	4					MAP0804T8-E	4								
34HP(34)	AP3424T8-E	4					MAP0804T8-E	3	MAP1004T8-E	1						
36HP(36)	AP3624T8-E	4					MAP0804T8-E	2	MAP1004T8-E	2						
38HP(38)	AP3824T8-E	4					MAP0804T8-E	1	MAP1004T8-E	3						
40HP(40)	AP4024T8-E	4							MAP1004T8-E	4						
42HP(42)	AP4224T8-E	4							MAP1004T8-E	3	MAP1204T8-E	1				
44HP(44)	AP4424T8-E	4							MAP1004T8-E	2	MAP1204T8-E	2				
46HP(46)	AP4624T8-E	4							MAP1004T8-E	1	MAP1204T8-E	3				
48HP(48)	AP4824T8-E	4									MAP1204T8-E	4				

* : SMMS outdoor unit

1. Allocation standard of model name



2. Rang of combined capacity

No. of combined units: 1 to 4 units

Capacity of combined units: 16 HP(16type) to 48 HP(48type)

3. Rated conditions

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

4-4. Indoor unit

Type	Appearance	Model name	Capacity rank	Capacity code	Cooling capacity (kW)	Heating capacity (kW)
4-way Air Discharge Cassette Type		MMU-AP0092H	009 type	1.00	2.8	3.2
		MMU-AP0122H	012 type	1.25	3.6	4.0
		MMU-AP0152H	015 type	1.70	4.5	5.0
		MMU-AP0182H	018 type	2.00	5.6	6.3
		MMU-AP0242H	024 type	2.50	7.1	8.0
		MMU-AP0272H	027 type	3.00	8.0	9.0
		MMU-AP0302H	030 type	3.20	9.0	10.0
		MMU-AP0362H	036 type	4.00	11.2	12.5
		MMU-AP0482H	048 type	5.00	14.0	16.0
		MMU-AP0562H	056 type	6.00	16.0	18.0
Compact 4-way Cassette (600 × 600) Type		MMU-AP0074MH-E	007 type	0.80	2.2	2.5
		MMU-AP0094MH-E	009 type	1.00	2.8	3.2
		MMU-AP0124MH-E	012 type	1.25	3.6	4.0
		MMU-AP0154MH-E	015 type	1.70	4.5	5.0
		MMU-AP0184MH-E	018 type	2.00	5.6	6.3
2-way Air Discharge Cassette Type		MMU-AP0072WH	007 type	0.80	2.2	2.5
		MMU-AP0092WH	009 type	1.00	2.8	3.2
		MMU-AP0122WH	012 type	1.25	3.6	4.0
		MMU-AP0152WH	015 type	1.70	4.5	5.0
		MMU-AP0182WH	018 type	2.00	5.6	6.3
		MMU-AP0242WH	024 type	2.50	7.1	8.0
		MMU-AP0272WH	027 type	3.00	8.0	9.0
		MMU-AP0302WH	030 type	3.20	9.0	10.0
		MMU-AP0362WH	036 type	4.00	11.2	12.5
		MMU-AP0482WH	048 type	5.00	14.0	16.0
		MMU-AP0562WH	056 type	6.00	16.0	18.0
1-way Air Discharge Cassette Type		MMU-AP0074YH-E	007 type	0.80	2.2	2.5
		MMU-AP0094YH-E	009 type	1.00	2.8	3.2
		MMU-AP0124YH-E	012 type	1.25	3.6	4.0
		MMU-AP0154SH-E	015 type	1.70	4.5	5.0
		MMU-AP0184SH-E	018 type	2.00	5.6	6.3
		MMU-AP0244SH-E	024 type	2.50	7.1	8.0
Concealed Duct Type		MMD-AP0074BH-E	007 type	0.80	2.2	2.5
		MMD-AP0094BH-E	009 type	1.00	2.8	3.2
		MMD-AP0124BH-E	012 type	1.25	3.6	4.0
		MMD-AP0154BH-E	015 type	1.70	4.5	5.0
		MMD-AP0184BH-E	018 type	2.00	5.6	6.3
		MMD-AP0244BH-E	024 type	2.50	7.1	8.0
		MMD-AP0274BH-E	027 type	3.00	8.0	9.0
		MMD-AP0304BH-E	030 type	3.20	9.0	10.0
		MMD-AP0364BH-E	036 type	4.00	11.2	12.5
		MMD-AP0484BH-E	048 type	5.00	14.0	16.0
		MMD-AP0564BH-E	056 type	6.00	16.0	18.0
Concealed Duct High Static Pressure Type		MMD-AP0184H-E	018 type	2.00	5.6	6.3
		MMD-AP0244H-E	024 type	2.50	7.1	8.0
		MMD-AP0274H-E	027 type	3.00	8.0	9.0
		MMD-AP0364H-E	036 type	4.00	11.2	10.0
		MMD-AP0484H-E	048 type	5.00	14.0	16.0
		MMD-AP0724H-E	072 type	8.00	22.4	25.0
		MMD-AP0964H-E	096 type	10.00	28.0	31.5
Slim Duct Type		MMD-AP0074SPH-E	007 type	0.80	2.2	2.5
		MMD-AP0094SPH-E	009 type	1.00	2.8	3.2
		MMD-AP0124SPH-E	012 type	1.25	3.6	4.0
		MMD-AP0154SPH-E	015 type	1.70	4.5	5.0
		MMD-AP0184SPH-E	018 type	2.00	5.6	6.3
Ceiling Type		MMC-AP0154H-E	015 type	1.70	4.5	5.0
		MMC-AP0184H-E	018 type	2.00	5.6	6.3
		MMC-AP0244H-E	024 type	2.50	7.1	8.0
		MMC-AP0274H-E	027 type	3.00	8.0	9.0
		MMC-AP0364H-E	036 type	4.00	11.2	12.5
		MMC-AP0484H-E	048 type	5.00	14.0	16.0

Type	Appearance	Model name	Capacity rank	Capacity code	Cooling capacity (kW)	Heating capacity (kW)
High-wall Type 3 series		MMK-AP0073H	007 type	0.80	2.2	2.5
		MMK-AP0093H	009 type	1.00	2.8	3.2
		MMK-AP0123H	012 type	1.25	3.6	4.0
		MMK-AP0153H	015 type	1.70	4.5	5.0
		MMK-AP0183H	018 type	2.00	5.6	6.3
		MMK-AP0243H	024 type	2.50	7.1	8.0
High-wall Type 4 series		MMK-AP0074MH-E	007 type	0.80	2.2	2.5
		MMK-AP0094MH-E	009 type	1.00	2.8	3.2
		MMK-AP0124MH-E	012 type	1.25	3.6	4.0
Floor Standing Concealed Type		MML-AP0074BH-E	007 type	0.80	2.2	2.5
		MML-AP0094BH-E	009 type	1.00	2.8	3.2
		MML-AP0124BH-E	012 type	1.25	3.6	4.0
		MML-AP0154BH-E	015 type	1.70	4.5	5.0
		MML-AP0184BH-E	018 type	2.00	5.6	6.3
		MML-AP0244BH-E	024 type	2.50	7.1	8.0
Floor Standing Cabinet Type		MML-AP0074H-E	007 type	0.80	2.2	2.5
		MML-AP0094H-E	009 type	1.00	2.8	3.2
		MML-AP0124H-E	012 type	1.25	3.6	4.0
		MML-AP0154H-E	015 type	1.70	4.5	5.0
		MML-AP0184H-E	018 type	2.00	5.6	6.3
		MML-AP0244H-E	024 type	2.50	7.1	8.0
Floor Standing Type		MMF-AP0154H-E	015 type	1.70	4.5	5.0
		MMF-AP0184H-E	018 type	2.00	5.6	6.3
		MMF-AP0244H-E	024 type	2.50	7.1	8.0
		MMF-AP0274H-E	027 type	3.00	8.0	9.0
		MMF-AP0364H-E	036 type	4.00	11.2	10.0
		MMF-AP0484H-E	048 type	5.00	14.0	16.0
		MMF-AP0564H-E	056 type	6.00	16.0	18.0
Fresh Air Intake Indoor Unit Type		MMD-AP0481HFE	048 type	5.00	14.0	8.9
		MMD-AP0721HFE	072 type	8.00	22.4	13.9
		MMD-AP0961HFE	096 type	10.00	28.0	17.4
Console Type		MML-AP0074NH-E	007 type	0.80	2.2	2.5
		MML-AP0094NH-E	009 type	1.00	2.8	3.2
		MML-AP0124NH-E	012 type	1.25	3.6	4.0
		MML-AP0154NH-E	015 type	1.70	4.5	5.0
		MML-AP0184NH-E	018 type	2.00	5.6	6.3
Air to Air Heat exchanger with DX-coil Type		MMD-VN502HEXE	009 type	1.00	4.10(1.30) *	5.53(2.33) *
		MMD-VN802HEXE	015 type	1.70	6.56(2.06) *	8.61(3.61) *
		MMD-VN1002HEXE	018 type	2.00	8.25(2.32) *	10.92(4.32) *
Air to Air Heat exchanger with DX-coil, Humidifier Type		MMD-VNK502HEXE	009 type	1.00	4.10(1.30) *	5.53(2.33) *
		MMD-VNK802HEXE	015 type	1.70	6.56(2.06) *	8.61(3.61) *
		MMD-VNK1002HEXE	018 type	2.00	8.25(2.32) *	10.92(4.32) *

* : The figures in () indicate the heat reclaimed from the heat recovery ventilator.

4-5. Remote controller

Name	Model name	Appearance	Application	Function
Wired remote controller	RBC-AMT32E		Connected to indoor unit Wired remote controller Wired remote controller (In case of control by 2 remote controllers)	• Start/Stop • Mode change • Temperature setting • Change of air flow • Timer function • Filter sign • Self-diagnosis function • Control by 2 remote controllers is available.
Simple wired remote controller	RBC-AS21E2		Connected to indoor unit Simple remote controller	• Start/Stop • Temperature setting • Change of air flow • Check code display
Wireless remote controller kit	RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2		Connected to indoor unit	• Start/Stop • Mode change • Temperature setting • Change of air flow • Timer function • Control by 2 remote controllers is available. • Check code display RBC-AX31U(W)-E RBC-AX31U(WS)-E (For 4-way Air Discharge Cassette) RBC-AX22CE2 (For Under Ceiling, 1-way Air Discharge Cassette SH) TCB-AX21E2 (For Compact 4-way Cassette, 2-way Air Discharge Cassette, 1-way Air Discharge Cassette YH, Concealed Duct Standard, Slim Duct, Floor Standing Cabinet, Floor Standing)
ON-OFF controller	TCB-CC163TLE2		Connected to outdoor unit, indoor unit Header Follower Outdoor unit ON-OFF controller	• Individual control up to 16 indoor units. • Setting of simultaneous ON/OFF 3 times for each day of the week when combined with schedule timer. • Connected to 2 remote controllers is available. ON-OFF controller Indoor remote controller

Name	Model name	Appearance	Application	Function
Central remote controller	TCB-SC642TLE2		Connected to outdoor unit, indoor unit	- Individual control up to 64 indoor units. - Individual control for max. 64 indoor units divided into 4 zones. (Up to 16 indoor units for each zone) - Up to 16 outdoor header units are connectable. 4 type central control setting to inhibit individual operation by remote controller can be selected. - Setting for one of 1 to 4 zones is available. - Can be used with other central control devices (Up to 10 central control devices and BMS I/F in one control circuit) - Two selectable control modes (Central controller mode Remote controller mode) - Operating with Shedule Timer TCB-EX21TLE.
	BMS-CM1280TLE			- Individual control of up to (64 indoor units) x 2 TCC-LINK buses - Individual control of up to (64 indoor units divided 1 to 64 zone) x 2 TCC-LINK buses (Up to 64 indoor units for each zone) - Up to 16 outdoor header units are connectable per 1 TCC-LINK bus 4 types of central control settings of inhibit individual operation by remote controller can be selected. - Setting for (one of 1 to 64 zones) x 2ch is available. - Setting for (one of 1 to 64 groups) x 2ch is available. - Usable and BMS I/F other central control devices (Up to 10 central control devices in one TCC-LINK bus). - Two control mode selectively (central controller mode) (Remote controller mode) by SW01 bit6. - Operating with Shedule Timer TCB-EX21TLE. - Return back setting
Schedule timer	TCB-EXS21TLE		Schedule timer mode	Schedule timer mode 6 programmings per day - Enabling 8 groups to be programmed - A maximum of 64 indoor units can be controlled - A maximum of 100 hours back-up power supply Weekly timer mode 7 types of weekly schedule and 3 programmings per day - Can set ON/OFF by one-minute interval Wekly timer mode Connected to central remote controller or wired remote controller

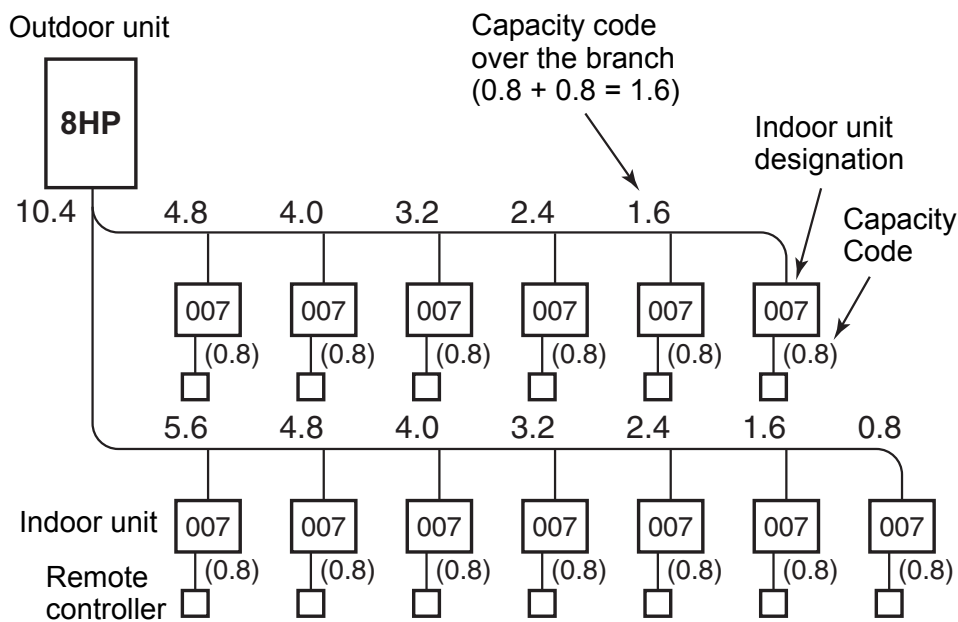
Name	Model name	Appearance	Application	Function
Remote controller with schedule timer (7-day timer function)	RBC-AMS41E		Connected to indoor unit Simple remote controller	• Clock display • Schedule timer: Possible to program schedule timer (7-day timer) function Possible to program 8 functions for each day of the week * The following items can be set in program: Operation time, Operation start/stop, Operation mode, Temperature setting, Restriction on button operation.
Lite-Vision plus Remote Controller	RBC-AMS51E-EN/ES		Connected to indoor unit Lite-Vision plus remote controller Another wired remote controller as follower (including Lite-Vision plus)	Display • Full dot display with back light • Multilingual language(11 languages) -EN : English, Italian, Polish, Greece, Russian, Turkish -ES : English, Spanish, Portuguese, French, Dutch, German • Indoor unit & outdoor unit temperature • Filter remaining hour, Total operation running hour • Name of room Energy Saving • Schedule timer with Energy save operation 4 pattern per day • Save ratio : 3 steps of 0%(thermo off) / 50% / 75% • Return back : Setting range 10 to 120min Schedule timer • 8 programs per day • Off reminder timer Others • Easy to use by simple button • Night operation mode • Key Lock
Wired remote controller for Air to Air Heat Exchanger with DX coil unit	NRC-01HE		Header Follower Outdoor unit Wired remote controller Air to Air Heat Exchanger with DX-coil unit Wired remote controller NRC-01HE (When all A2A HEXs with DX-coil or group operation with standard indoor units, use NRC-01HE.)	Ventilation • Ventilation start/stop • Ventilation mode change • Change of ventilation fan speed Basic function • Start/Stop • Mode change • Temperature setting • Change of air flow • Timer function • Filter sign

5-1. Basic systems (examples)

8 HP system

- Max. indoor unit : 13 units
- Capacity code of indoor unit : $\begin{pmatrix} \text{Min. : 4} \\ \text{Max. : 10.8} \end{pmatrix}$

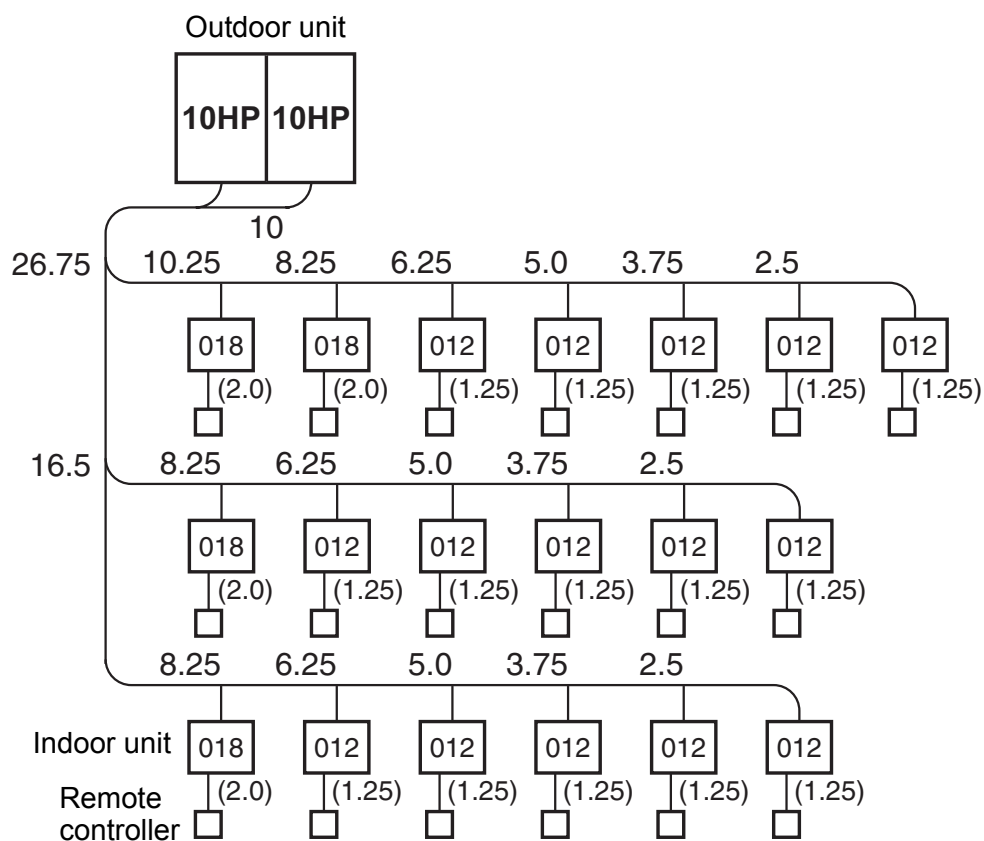
Capacity code
Total 10.4
No. of total units
13



20 HP system

- Max. indoor unit : 33 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min. : 10} \\ \text{Max. : 27} \end{array} \right)$

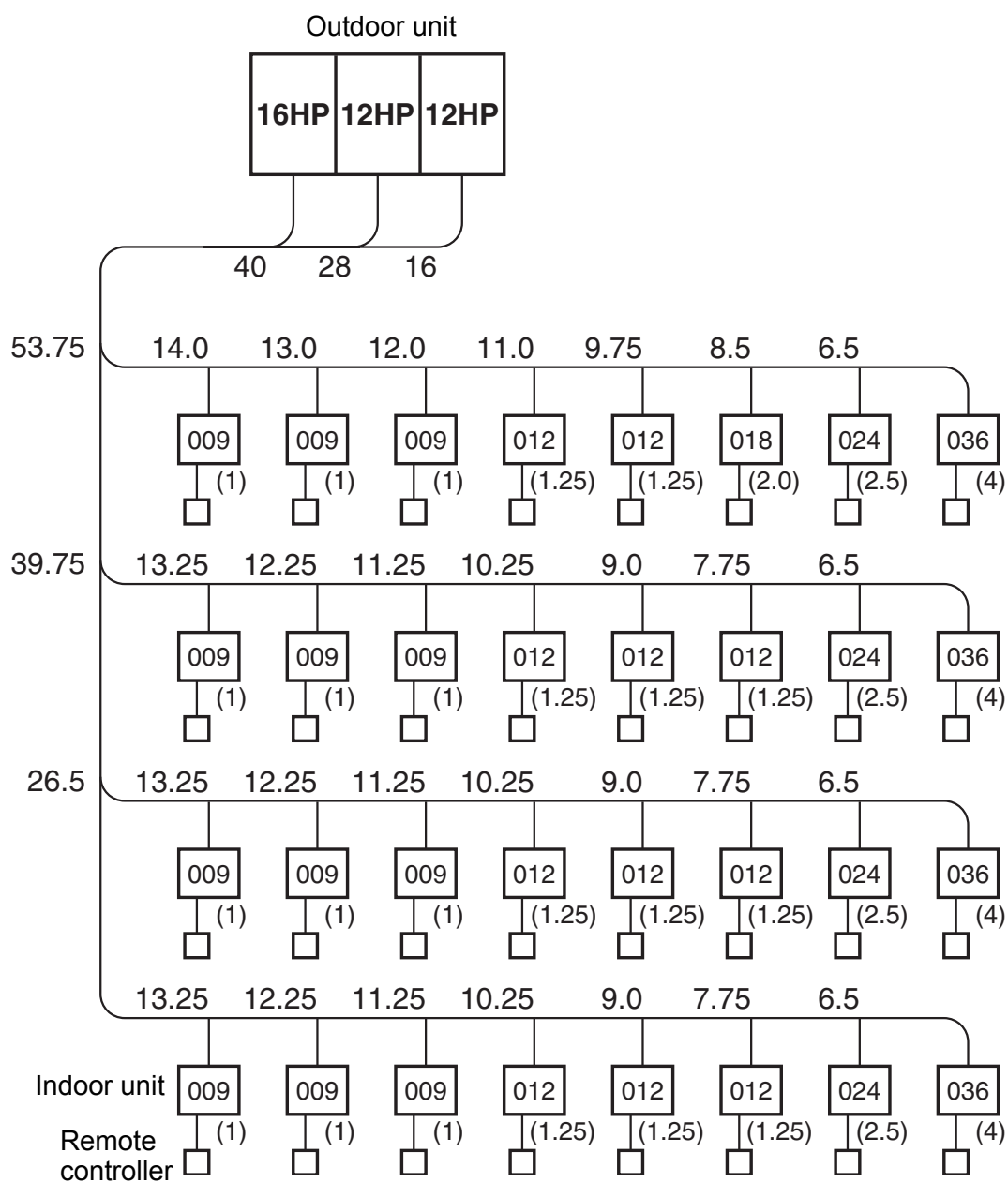
Capacity code
Total 26.75
No. of total units
19



40 HP system (Standard model)

- Max. indoor unit : 48 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min. : 20} \\ \text{Max. : 54} \end{array} \right)$

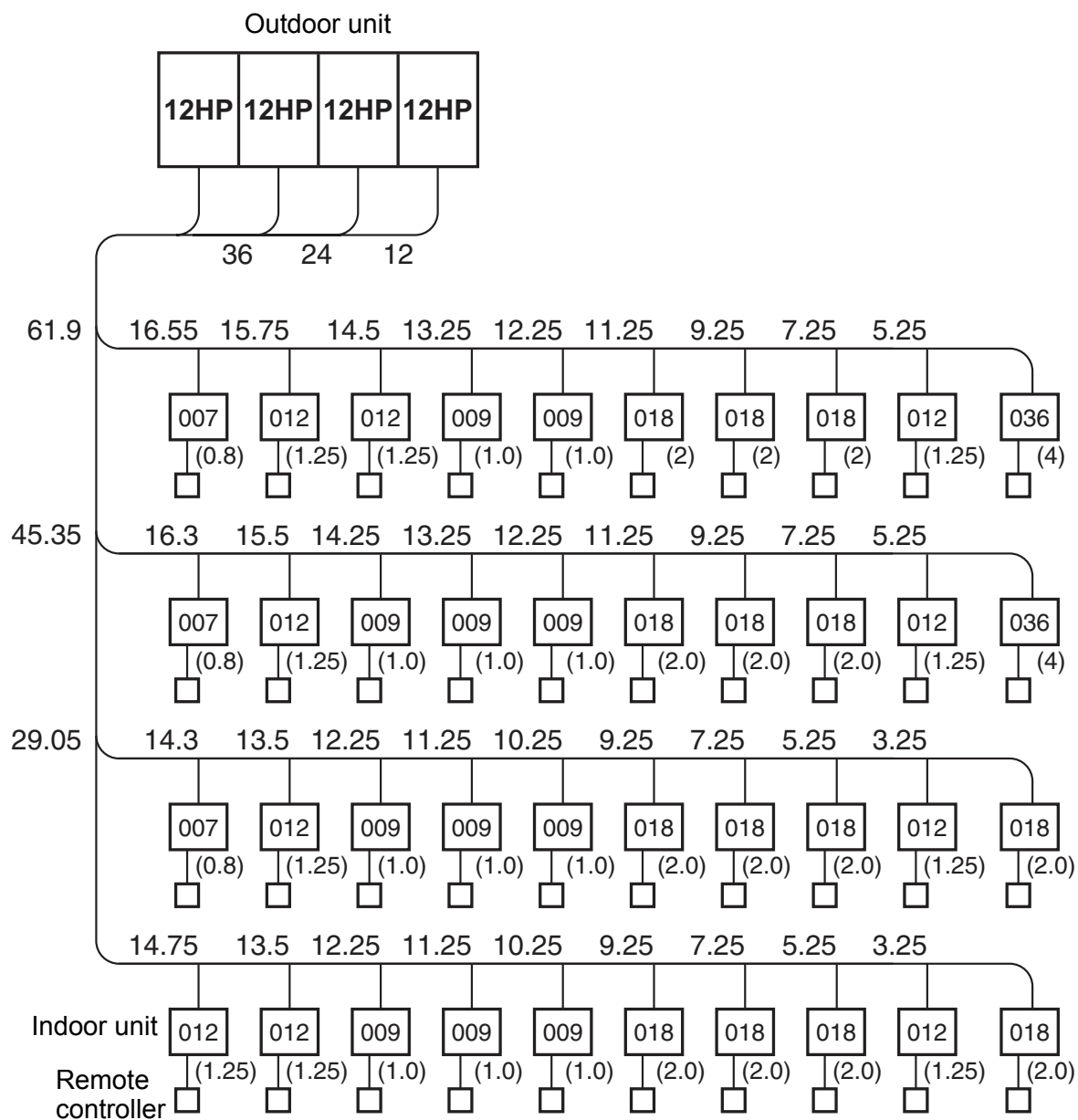
Capacity code
Total 53.75
No. of total units
32



48HP systems (High efficiency model)

- Max. indoor unit : 48 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min.: 24} \\ \text{Max.: 64.8} \end{array} \right)$

Capacity code
Total 61.9
No. of total units
40



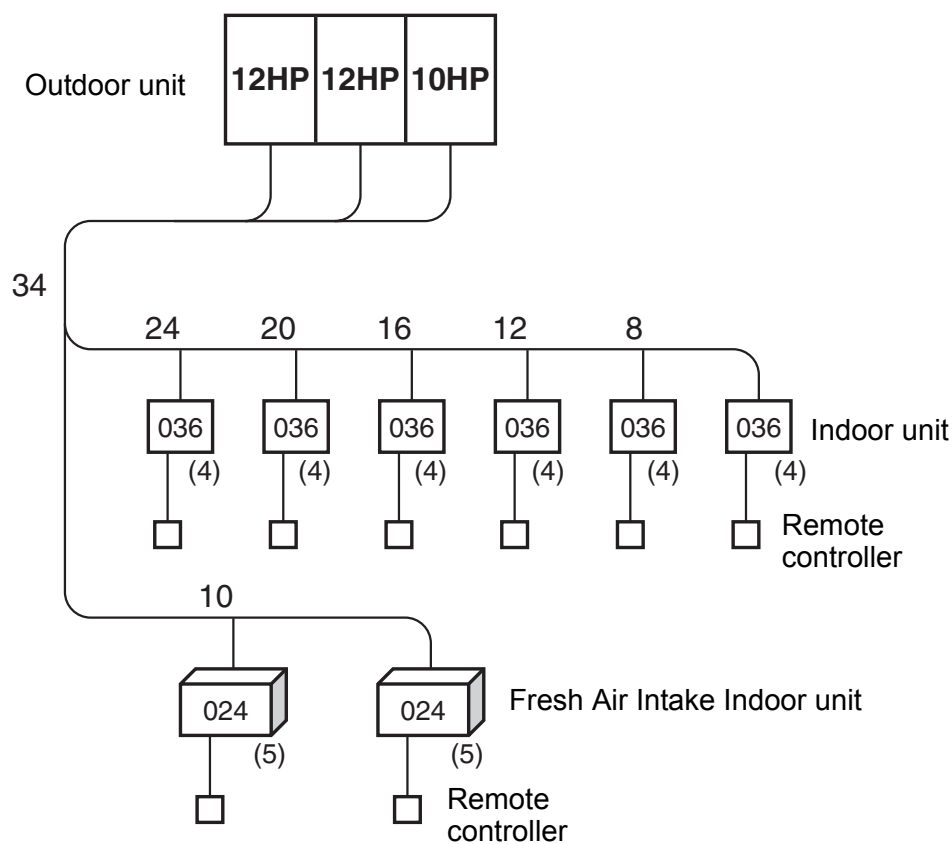
5-2. Fresh Air Intake Indoor Unit Type

34 HP system

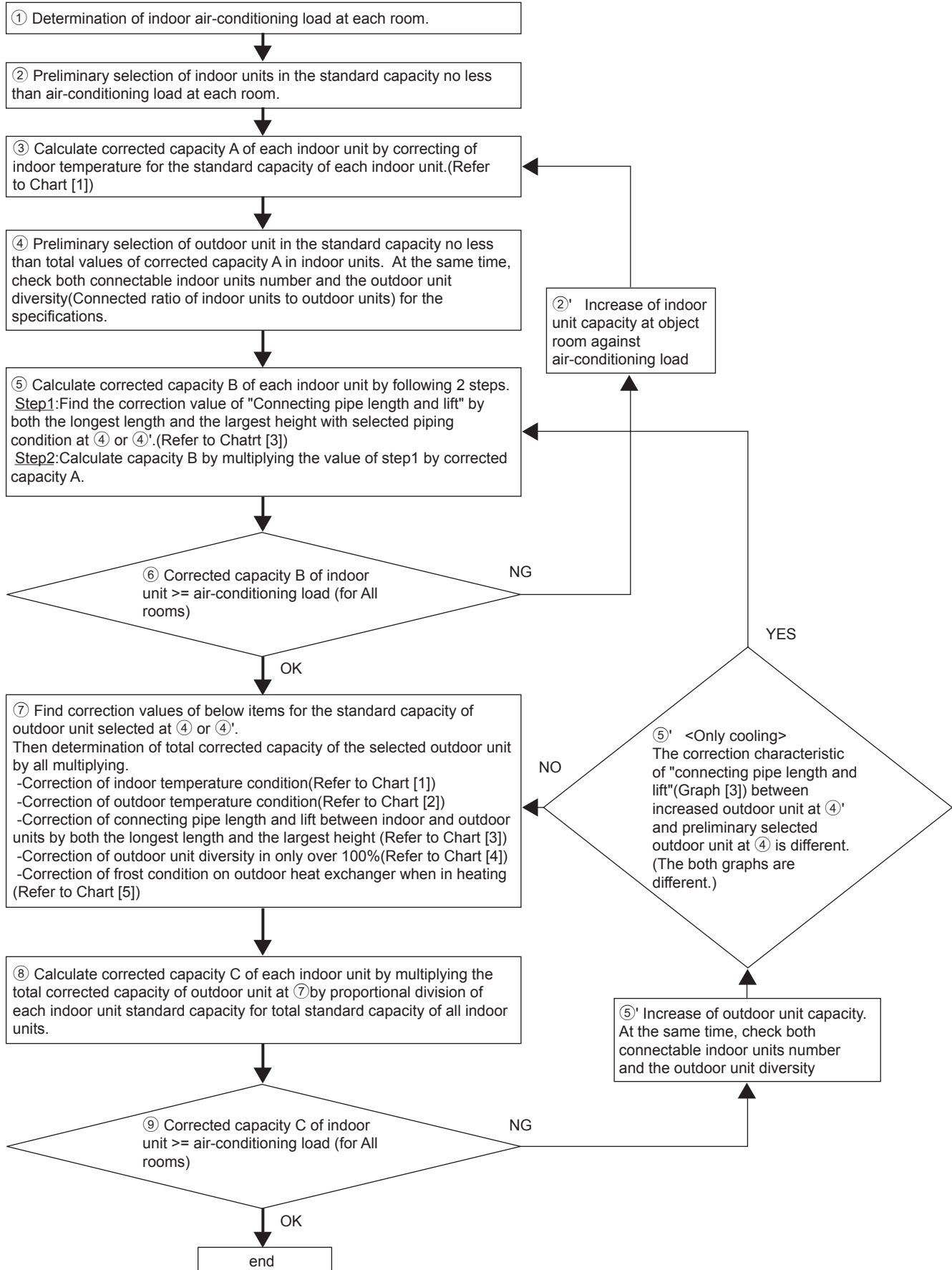
Connecting limitation

- The total capacity of the fresh air intake units and the indoor units is restricted to 80 to 100% against the capacity of the outdoor units.
- Up to two fresh air intake units can be connected on one line of the multi system.
- The allowable total capacity of fresh air intake units shall be 30% or less against the total capacity of the indoor units (including the fresh air intake units).
- The fresh air intake units only cannot connected.

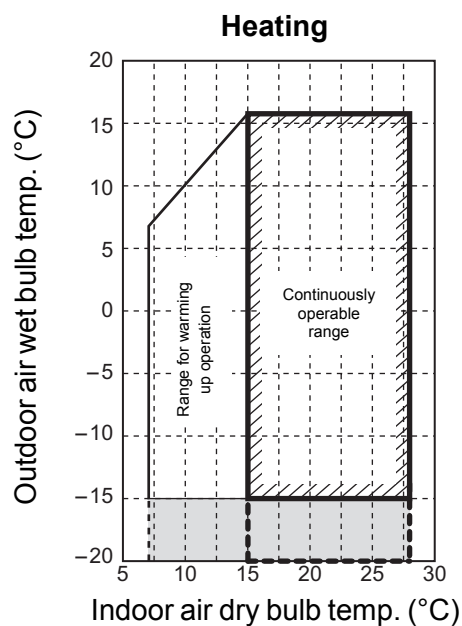
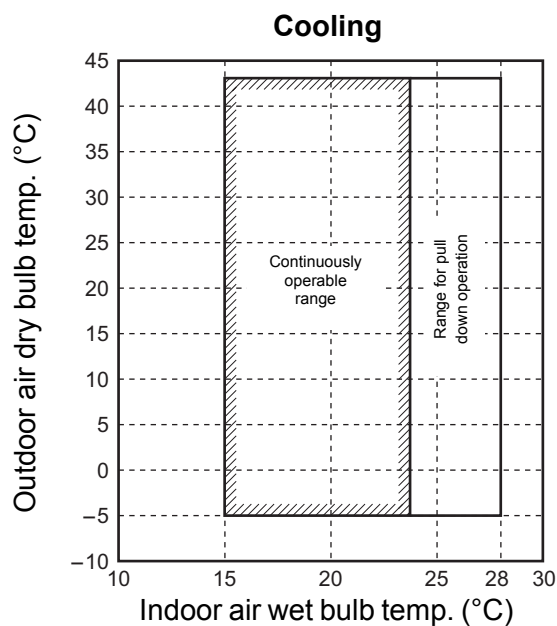
Capacity code
Total 34
No. of total units
8



6-1. Selection flow chart



6-2. Operational temperature range



The unit will operate down to an outdoor temperature of -20°C, however considerable performance decrease will be expected below -15°C.

Therefore please consider installation location/surroundings and system design when expected to operate between -15°C and -20°C.

6-3. Combination conditions for indoor unit and outdoor unit

6-3-1. For indoor unit, the capacity code is decided for each capacity rank.

Capacity rank type	007	009	012	015	018	024	027	030	036	048	056	072	096
Capacity code	0.8	1	1.25	1.7	2	2.5	3	3.2	4	5	6	8	10

NOTE:

Capacity rank: Correspondence to Btu/h.

Capacity code: Correspondence to Horsepower.

6-3-2. For outdoor unit, maximum No. of connectable indoor units and total capacity code of indoor units are decided.

Outdoor unit (Heat pump)	Outdoor unit (Cooling only)	Capacity code of outdoor unit	Max. No. of indoor units	Total capacity code of indoor units
Standard model				
MMY-MAP0501HT8-E*	MMY-MAP0501T8-E*	5	8	2.5 to 6.75
MMY-MAP0601HT8-E*	MMY-MAP0601T8-E*	6	10	3 to 8.1
MMY-MAP0804HT8-E	MMY-MAP0804T8-E	8	13	4 to 10.8
MMY-MAP1004HT8-E	MMY-MAP1004T8-E	10	16	5 to 13.5
MMY-MAP1204HT8-E	MMY-MAP1204T8-E	12	20	6 to 16.2
MMY-MAP1404HT8-E	MMY-MAP1404T8-E	14	23	7 to 18.9
MMY-MAP1604HT8-E	MMY-MAP1604T8-E	16	27	8 to 21.6
MMY-AP1814HT8-E	MMY-AP1814T8-E	18	30	9 to 24.3
MMY-AP2014HT8-E	MMY-AP2014T8-E	20	33	10 to 27
MMY-AP2214HT8-E	MMY-AP2214T8-E	22	37	11 to 29.7
MMY-AP2414HT8-E	MMY-AP2414T8-E	24	40	12 to 32.4
MMY-AP2614HT8-E	MMY-AP2614T8-E	26	43	13 to 35.1
MMY-AP2814HT8-E	MMY-AP2814T8-E	28	47	14 to 37.8
MMY-AP3014HT8-E	MMY-AP3014T8-E	30	48	15 to 40.5
MMY-AP3214HT8-E	MMY-AP3214T8-E	32	48	16 to 43.2
MMY-AP3414HT8-E	MMY-AP3414T8-E	34	48	17 to 45.9
MMY-AP3614HT8-E	MMY-AP3614T8-E	36	48	18 to 48.6
MMY-AP3814HT8-E	MMY-AP3814T8-E	38	48	19 to 51.3
MMY-AP4014HT8-E	MMY-AP4014T8-E	40	48	20 to 54
MMY-AP4214HT8-E	MMY-AP4214T8-E	42	48	21 to 56.7
MMY-AP4414HT8-E	MMY-AP4414T8-E	44	48	22 to 59.4
MMY-AP4614HT8-E	MMY-AP4614T8-E	46	48	23 to 62.1
MMY-AP4814HT8-E	MMY-AP4814T8-E	48	48	24 to 64.8
High efficiency model				
MMY-AP1624HT8-E	MMY-AP1624T8-E	16	27	8 to 21.6
MMY-AP2424HT8-E	MMY-AP2424T8-E	24	40	12 to 32.4
MMY-AP2624HT8-E	MMY-AP2624T8-E	26	43	13 to 35.1
MMY-AP2824HT8-E	MMY-AP2824T8-E	28	47	14 to 37.8
MMY-AP3024HT8-E	MMY-AP3024T8-E	30	48	15 to 40.5
MMY-AP3224HT8-E	MMY-AP3224T8-E	32	48	16 to 43.2
MMY-AP3424HT8-E	MMY-AP3424T8-E	34	48	17 to 45.9
MMY-AP3624HT8-E	MMY-AP3624T8-E	36	48	18 to 48.6
MMY-AP3824HT8-E	MMY-AP3824T8-E	38	48	19 to 51.3
MMY-AP4024HT8-E	MMY-AP4024T8-E	40	48	20 to 54
MMY-AP4224HT8-E	MMY-AP4224T8-E	42	48	21 to 56.7
MMY-AP4424HT8-E	MMY-AP4424T8-E	44	48	22 to 59.4
MMY-AP4624HT8-E	MMY-AP4624T8-E	46	48	23 to 62.1
MMY-AP4824HT8-E	MMY-AP4824T8-E	48	48	24 to 64.8

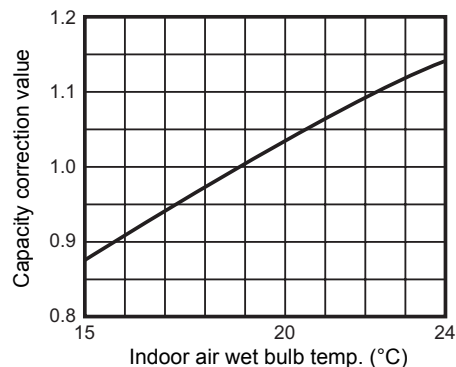
* : SMMS

50 to 135% of outdoor unit capacity 

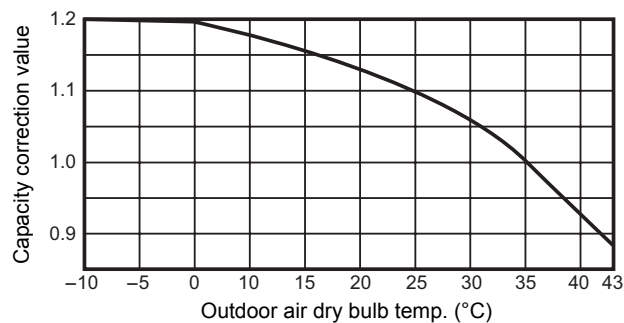
6-4. Cooling/heating capacity characteristics

6-4-1. Correction charts for cooling capacity calculation

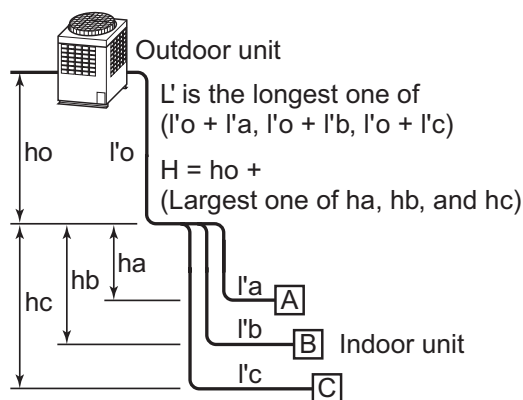
[1] Indoor air wet bulb temperature vs. capacity correction value



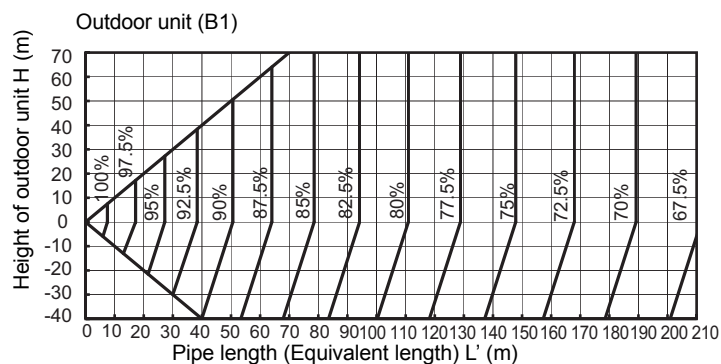
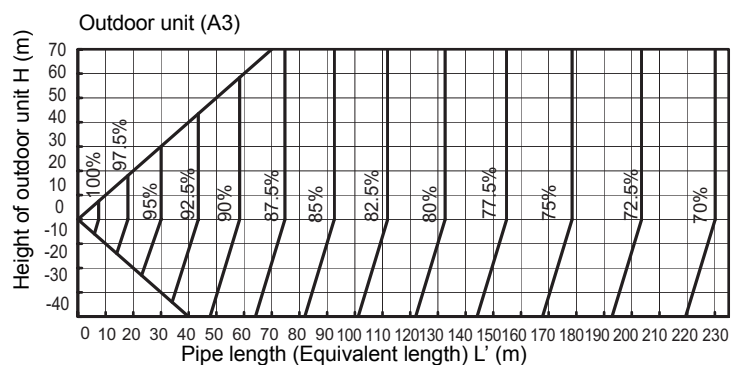
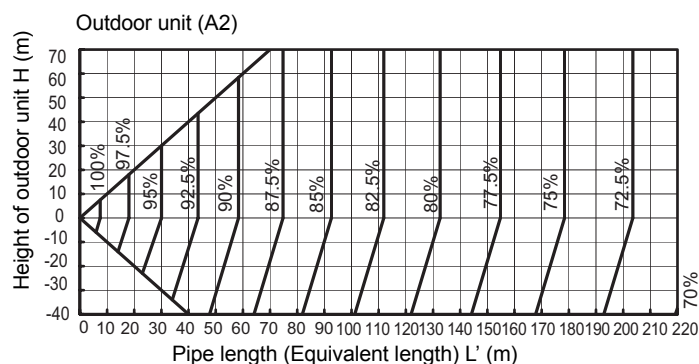
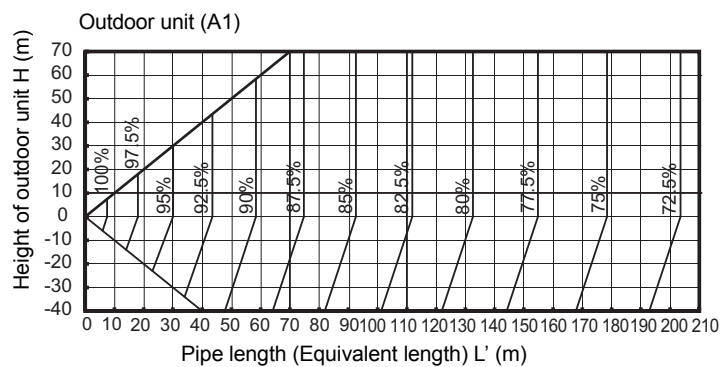
[2] Outdoor air dry bulb temperature vs. capacity correction value

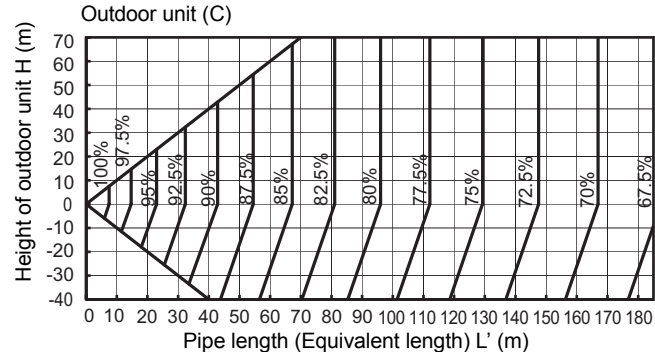
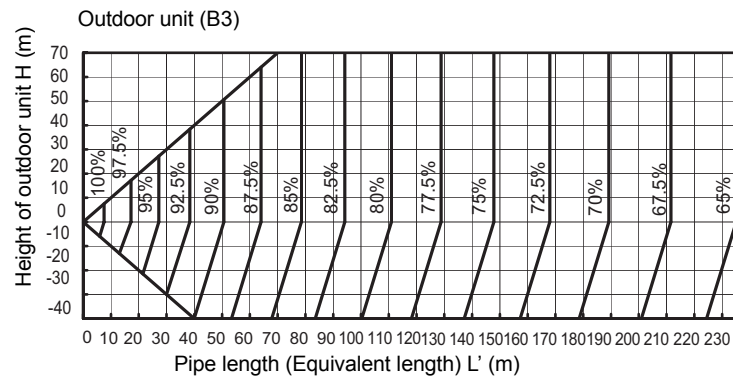
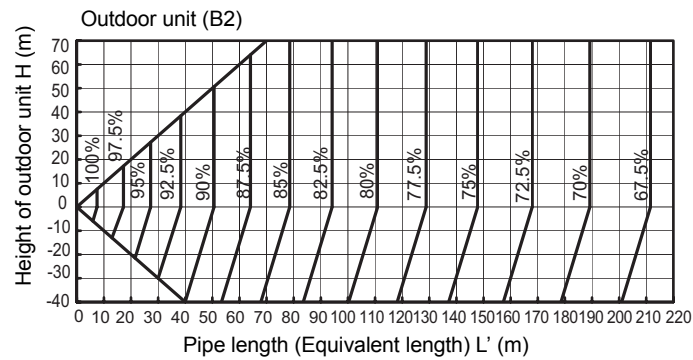


[3] Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value

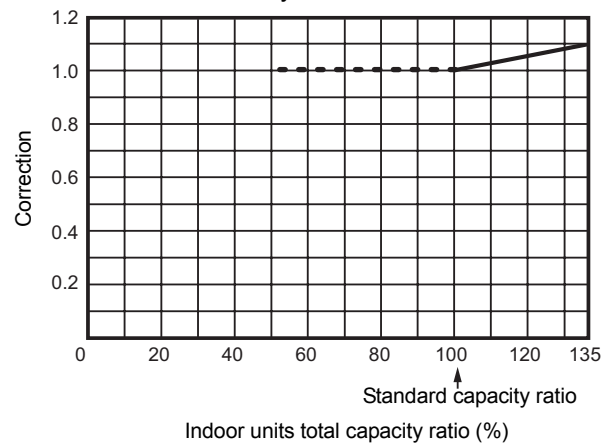


HP	Standard model		High efficiency model	
	Pipe length	Graph	Pipe length	Graph
8	210	A1		
10	210	B1		
12	210	A1		
14	210	A1		
16	210	A1	220	A2
18	220	B2		
20	220	B2		
22	220	A2		
24	220	A2	235	A3
26	220	B2	235	B3
28	220	B2	235	B3
30	220	B2	235	B3
32	220	B2	235	B3
34	235	B3	235	B3
36	235	A3	235	A3
38	235	B3	235	B3
40	235	B3	235	B3
42	235	B3	235	B3
44	235	B3	235	B3
46	185	C1	185	C1
48	185	C1	185	C1





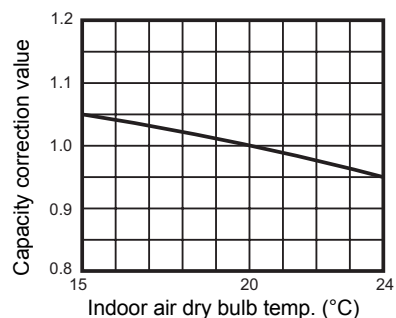
[4]* Correction of outdoor unit diversity



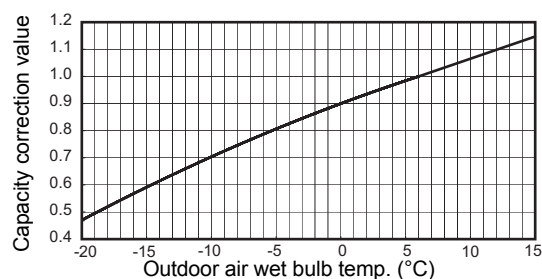
*: Coefficient to use for the correction of the outdoor unit capacity when the total capacity of the indoor units are not equal to the outdoor unit capacity.

6-4-2. Correction charts for heating capacity calculation

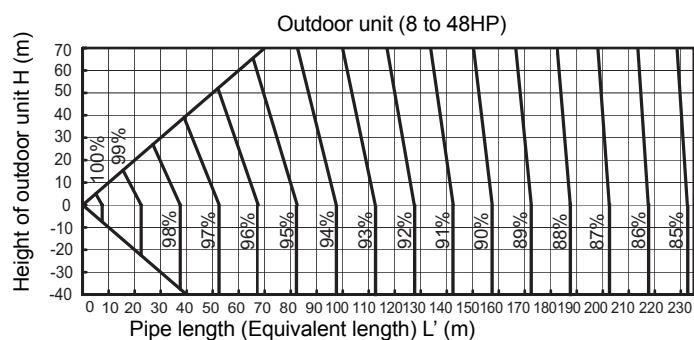
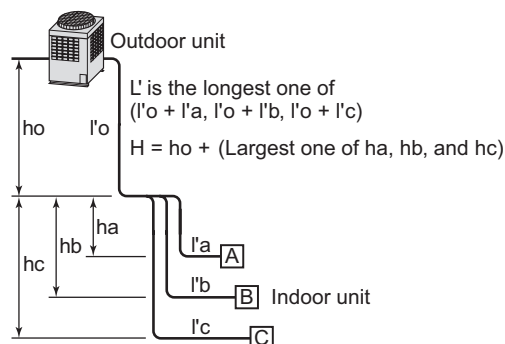
[1] Indoor air dry bulb temperature vs. capacity correction value



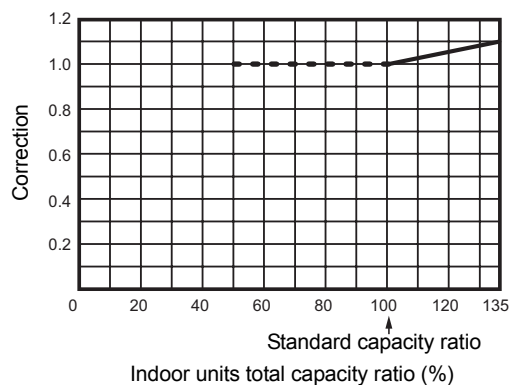
[2] Outdoor air wet bulb temperature vs. capacity correction value



[3] Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value



[4]* Correction of outdoor unit diversity



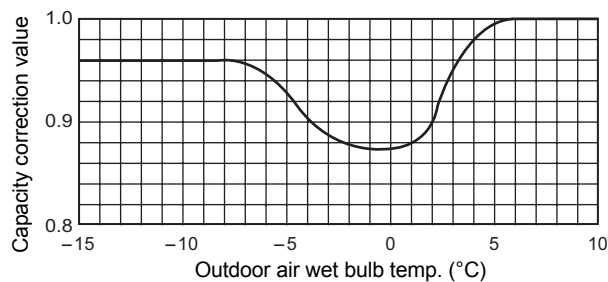
*: Coefficient to use for the correction of the outdoor unit capacity when the total capacity of the indoor units are not equal to the outdoor unit capacity.

6-4-3.Capacity correction in case of frost on the outdoor heat exchanger when in heating

Correct the heating capacity when frost can be found on the outdoor heat exchanger.

Heating capacity = Capacity after correction of outdoor unit x Correction value of capacity resulted from frost
(Capacity after correction of outdoor unit: Heating capacity calculated in the above item 2.)

[5] Capacity correction in case of frost on the outdoor heat exchanger



6-4-4.Rated conditions

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

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

6-5. Example of equipment selection

Selection condition

Indoor temperature	Outdoor temperature
When cooling : 27.0 CDB/19.0 CWB	When cooling : 35.0 CDB/ -
When heating : 20.0 CDB/ -	When heating : 6.0 CDB/3.0 CWB
Equivalent pipe length : 46m	Height of outdoor unit : 20m(Outdoor unit upper)

Indoor correction	Temperature correction	Piping correction
Cooling	1.0	0.92
Heating	1.0	0.97

(From charts)

6-5-1.Capacity correction and selection for indoor unit

- ① Determinate of indoor air-condition load at each room as shown below table.
- ② Preliminary select indoor units in standard capacity exceeding air-condition load at each room.
- ③ Find the correction values from indoor correction charts for both cooling and heating with temperature conditions. (Refer to Chart [1].)

→ In this case, get correction values, Cooling 1.0 / Heating 1.0

Then calculate **Capacity A** of each indoor unit.

Capacity A = Standard capacity x the correction value by indoor unit condition

- ④ Preliminary select outdoor unit in standard capacity exceeding total values of **Capacity A**.

At that time, check connectable indoor units number and the outdoor unit diversity (connecting ratio of indoor units HP to outdoor unit HP.)

→ In this case, select MMY-MAP2214HT* (22HP)

Cooling capacity : 61.3 < 61.5 OK, Heating capacity : 68.9 < 69.0 OK,

Number of connectable indoor units : 11 < 37 OK,

Outdoor unit diversity (H2 < 15m) : 100% matchs "50 to 135%". OK

- ⑤ This part has two steps.

Step1 : Find the correction values of "Connecting pipe length and lift" by both the longest pipe length and the largest height

with selected piping condition at ④ both cooling and heating. (Refer to **Chart [3].**)

→ In this case, get correction values , Cooling 0.92 / Heating 0.97.

Step2 : Calculate **Capacity B** by multiplying the value of step1 by corrected **Capacity A**.

Capacity B = Capacity A x the correction value by piping condition of length/lift

- ⑥ Compare Capacity B of indoor unit with air-conditioning load (for all rooms)

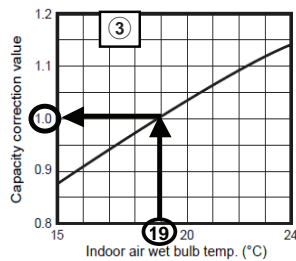
Capacity B >= Air-conditioning load (for all room)

→ In this case, all Capacity B are bigger than air-conditioning load for both cooling and heating. Go to ⑦.

Condition of indoors				Capacity correction and selection for indoor unit						
Floor	Room name	Air-conditioning load		Model name	Standard capacity		Corrected Capacity A		Corrected Capacity B	
		Cooling (kW)	Heating (kW)		Cooling (kW)	Heating (kW)	Cooling (kW)	Heating (kW)	Cooling (kW)	Heating (kW)
1	Office 1	6.0	6.2	MMU-AP0242H	7.1	8.0	7.1	8.0	6.5	7.8
	Meeting room 1	4.6	5.0	MMU-AP0182H	5.6	6.3	5.6	6.3	5.2	6.1
	Office 2	3.8	3.3	MMU-AP0152H	4.5	5.0	4.5	5.0	4.1	4.9
	Locker room 1	3.0	3.1	MMU-AP0122H	3.6	4.0	3.6	4.0	3.3	3.9
	Meeting room 2	11.8	12.0	MMU-AP0482H	14.0	16.0	14.0	16.0	12.9	15.5
	Locker room 2	3.0	3.0	MMU-AP0122H	3.6	4.0	3.6	4.0	3.3	3.9
	Rest room	4.6	4.8	MMU-AP0182H	5.6	6.3	5.6	6.3	5.2	6.1
	Smoking room	3.0	3.1	MMU-AP0122H	3.6	4.0	3.6	4.0	3.3	3.9
	Reception room	3.8	3.9	MMU-AP0152H	4.5	5.0	4.5	5.0	4.1	4.9
	Office 3	4.8	4.5	MMU-AP0182H	5.6	6.3	5.6	6.3	5.2	6.1
	Reception area	3.0	3.1	MMU-AP0122H	3.6	4.0	3.6	4.0	3.3	3.9
Total		51.4	52.0		61.3	68.9	61.3	68.9	56.4	66.8

Cooling charts

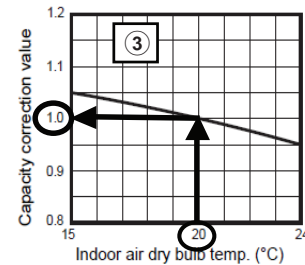
[1] Indoor air wet bulb temperature vs. capacity correction value



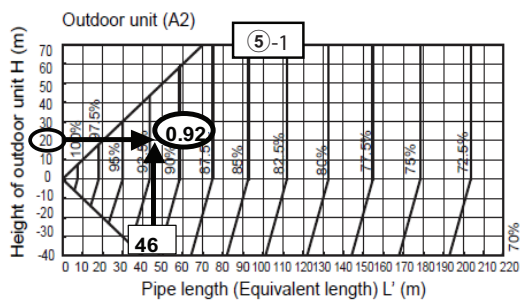
Selection of piping chart by selecting outdoor unit			
HP	Standard model	High efficiency model	
Pipe length	Graph	Pipe length	Graph
8	210 A1		
10	210 B1		
12	210 A1		
14	210 A1		
16	210 A1	220 A2	
18	220 B2		
20	220 B2		
22	220 B2		
24	220 A2	235 A3	
26	220 B2	235 B3	
28	220 B2	235 B3	
30	220 B2	235 B3	
32	220 B2	235 B3	
34	235 B3	235 B3	
36	235 A3	235 A3	
38	235 B3	235 B3	
40	235 B3	235 B3	
42	235 B3	235 B3	
44	235 B3	235 B3	
46	185 C1	185 C1	
48	185 C1	185 C1	

Heating charts

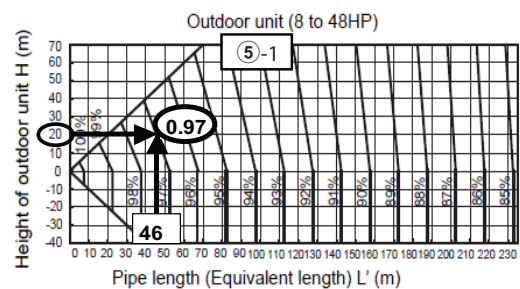
[1] Indoor air dry bulb temperature vs. capacity correction value



[3] connecting pipe length and lift between indoor and outdoor units vs. capacity correction value



[3] Connecting pipe length and lift between indoor and outdoor units vs. capacity correction value



6-5-2.Capacity correction and selection for outdoor unit

- ⑦ Find the correction values of following five items for the standard capacity of outdoor unit selected at ④.
Then determination of total corrected capacity of the selected outdoor unit by all multiplying.

Corrected capacity of outdoor unit = Standard capacity of selected outdoor unit

- x **Correction value by the indoor temperature condition** (Refer to Chart [1].)
- x **Correction value by the outdoor temperature condition** (Refer to Chart [2].)
- x **Correction value by connecting pipe length and lift between indoor and outdoor units** (Refer to Chart [3].)
- x **Correction value by outdoor unit diversity in only over 100%** (Refer to Chart [4].)
- x **Correction value by frost condition on outdoor heating exchanger in heating** (Refer to Chart [5].)

→ In this case, these five correction values are below.

Correction value by the indoor temperature condition : Cooling 1.0 / Heating 1.0 (sama as ③)

Correction value by the outdoor temperature condition :

Cooling 1.0 / Heating 0.95 (Find both values by chart [2])

Correction value by connecting pipe length and lift between indoor and outdoor units :

Cooling 0.92 / Heating 0.97 (sama as ⑤-1.)

Correction value by outdoor unit diversity : Cooling 1.0 / Heating 1.0 (Find both values by chart [4])

Correction value by frost condition on outdoor heating exchanger in only heating :

Cooling - / Heating 0.95 (Find the value by chart [5])

Corrected capacity of outdoor unit : Cooling 61.5kW x 1.0 x 1.0 x 0.92 x 1.0 = 56.6kW

Heating 69.0kW x 1.0 x 0.95 x 0.97 x 1.0 x 0.95 = 60.4k

- ⑧ Calculate **Capacity C** of each indoor unit by multiplying the corrected capacity of outdoor unit at ⑦ by proportional division of each indoor unit standard capacity for total standard capacity of all indoor units.

Capacity C = Corrected capacity of outdoor unit x (Each indoor unit standard capacity / total standard capacity of all indoor units)

→ In this case, the example of "Office 1" is the following.

Cooling : Capacity C = 56.6kW x (7.1kW / 61.3kW) = 6.6kW

Heating : Capacity C = 60.4kW x (8.0kW / 68.9kW) = 7.0kW

Calculate Capacity C of remain rooms by the similar method.

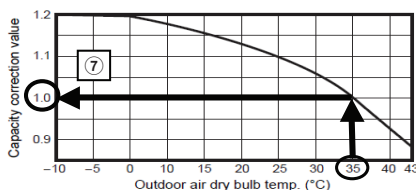
- ⑨ Compare Capacity C of indoor unit with air-conditioning load (for all rooms)

Capacity C >= Air-conditioning load (for all room)

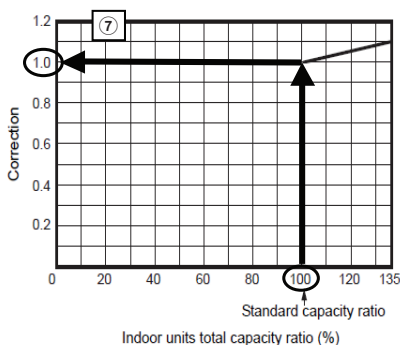
→ In this case, all Capacity C are bigger than air-conditioning load for both cooling and heating. All rooms are OK and selection ends.

Cooling charts

[2] Outdoor air dry bulb temperature vs. capacity correction value

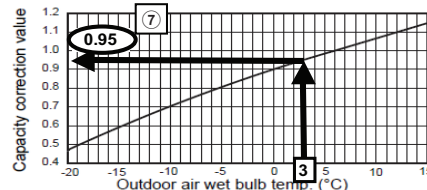


[4] Correction of outdoor unit diversity

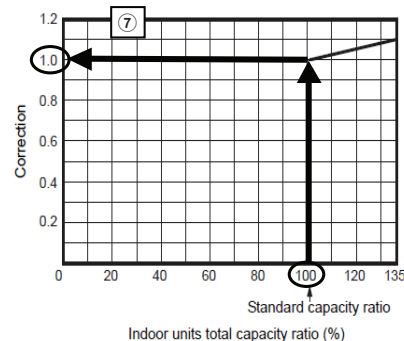


Heating charts

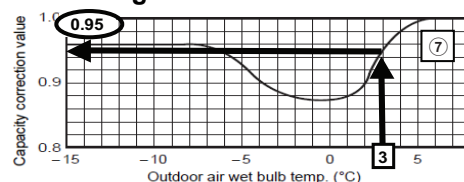
[2] Outdoor air wet bulb temperature vs. capacity correction value



[4] Correction of outdoor unit diversity



[5] Frost on the outdoor heating exchanger in heating



6-5-3.Result of selection example

Selection condition

Indoor temperature	Outdoor temperature
When cooling : 27.0 CDB/19.0 CWB	When cooling : 35.0 CDB/ -
When heating : 20.0 CDB/ -	When heating : 6.0 CDB/3.0 CWB
Equivalent pipe length : 46m	Height of outdoor unit : 20m(Outdoor unit upper)

Indoor correction	Temperature correction	Piping correction
Cooling	1.0	0.92
Heating	1.0	0.97

(From charts)

Preliminary selection of indoor units(with outdoor unit) by each air-conditioning load

Condition of indoors				Capacity correction and selection for indoor unit						
Floor	Room name	Air-conditioning load		Model name	Standard capacity		Corrected Capacity A		Corrected Capacity B	
		Cooling	Heating		Cooling	Heating	Cooling	Heating	Cooling	Heating
		(kW)	(kW)		(kW)	(kW)	(kW)	(kW)	(kW)	(kW)
1	Office 1	6.0	6.2	MMU-AP0242H	7.1	8.0	7.1	8.0	6.5	7.8
	Meeting room 1	4.6	5.0	MMU-AP0182H	5.6	6.3	5.6	6.3	5.2	6.1
	Office 2	3.8	3.3	MMU-AP0152H	4.5	5.0	4.5	5.0	4.1	4.9
	Locker room 1	3.0	3.1	MMU-AP0122H	3.6	4.0	3.6	4.0	3.3	3.9
	Meeting room 2	11.8	12.0	MMU-AP0482H	14.0	16.0	14.0	16.0	12.9	15.5
	Locker room 2	3.0	3.0	MMU-AP0122H	3.6	4.0	3.6	4.0	3.3	3.9
	Rest room	4.6	4.8	MMU-AP0182H	5.6	6.3	5.6	6.3	5.2	6.1
	Smoking room	3.0	3.1	MMU-AP0122H	3.6	4.0	3.6	4.0	3.3	3.9
	Reception room	3.8	3.9	MMU-AP0152H	4.5	5.0	4.5	5.0	4.1	4.9
	Office 3	4.8	4.5	MMU-AP0182H	5.6	6.3	5.6	6.3	5.2	6.1
	Reception area	3.0	3.1	MMU-AP0122H	3.6	4.0	3.6	4.0	3.3	3.9
Total		51.4	52.0		61.3	68.9	61.3	68.9	56.4	66.8

Preliminary selection of outdoor unit		
Model name	Cooling (kW)	Heating (kW)
MMY-APMAP2214HT* (Standard model 22HP)	61.5	69.0

Selection of outdoor unit / indoor units

Floor	Room name	Pipe length(m)	Corrected capacity of outdoor unit (kW)			Corrected Capacity C*	
		Equivalent length & lift	Item	Correction of cooling capacity	Correction of heating capacity	Cooling (kW)	Heating (kW)
1	Office 1	46 / 20 (Outdoor unit upper)	Standard capacity	61.5	69.0	6.6	7.0
	Meeting room 1		Indoor temperature	1.0	1.0	5.2	5.5
	Office 2		Outdoor temperature	1.0	0.95	4.2	4.4
	Locker room 1		Connecting pipe length and lift	0.92	0.97	3.3	3.5
	Meeting room 2		Outdoor unit diversity	1.0	1.0	12.9	14.0
	Locker room 2		Frost on heating exchanger	-	0.95	3.3	3.5
	Rest room					5.2	5.5
	Smoking room					3.3	3.5
	Reception room					4.2	4.4
	Office 3					5.2	5.5
	Reception area					3.3	3.5
Total				56.6	60.4	56.6	60.4

Judgment result

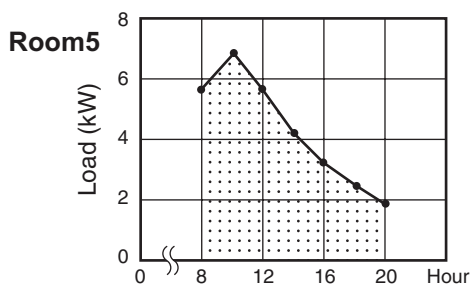
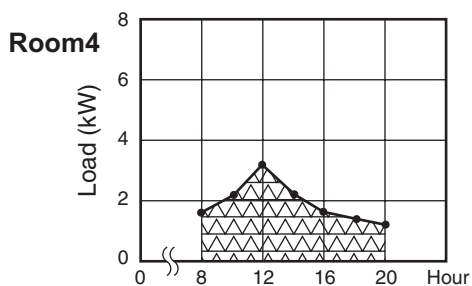
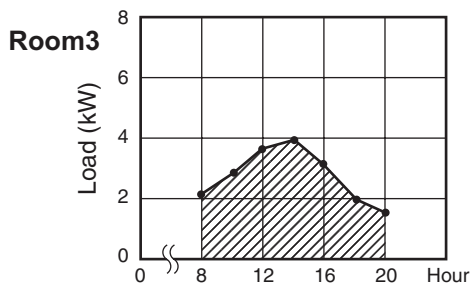
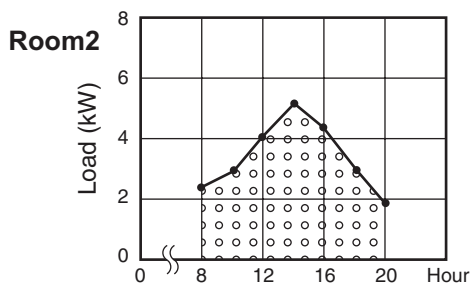
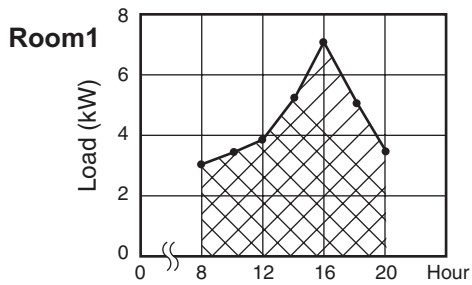
Condition of indoors				Equipment Selection			Judgment result	
Floor	Room name	Air-conditioning load		Model name	Corrected Capacity C		Cooling	Heating
		Cooling (kW)	Heating (kW)		Cooling (kW)	Heating (kW)		
1	Office 1	6.0	6.2	MMU-AP0242H	6.6	7.0	OK	OK
	Meeting room 1	4.6	5.0	MMU-AP0182H	5.2	5.5	OK	OK
	Office 2	3.8	3.3	MMU-AP0152H	4.2	4.4	OK	OK
	Locker room 1	3.0	3.1	MMU-AP0122H	3.3	3.5	OK	OK
	Meeting room 2	11.8	12.0	MMU-AP0482H	12.9	14.0	OK	OK
	Locker room 2	3.0	3.0	MMU-AP0122H	3.3	3.5	OK	OK
	Rest room	4.6	4.8	MMU-AP0182H	5.2	5.5	OK	OK
	Smoking room	3.0	3.1	MMU-AP0122H	3.3	3.5	OK	OK
	Reception room	3.8	3.9	MMU-AP0152H	4.2	4.4	OK	OK
	Office 3	4.8	4.5	MMU-AP0182H	5.2	5.5	OK	OK
	Reception area	3.0	3.1	MMU-AP0122H	3.3	3.5	OK	OK
Total		51.4	52.0	MMY-APMAP2214HT*	56.6	60.4	OK	OK

Example: Equipment selection based on system load profile

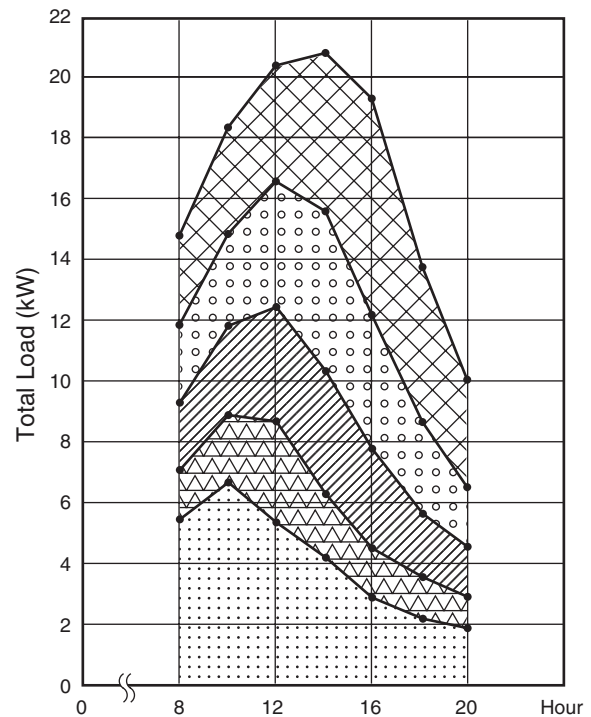
Since the five rooms on the floor face different directions, their hourly cooling load profile will be also different.

We select each indoor unit based on the individual room peak load. However, we need to use the total load profile on the floor as a base to choose the outdoor module.

• Load in each room



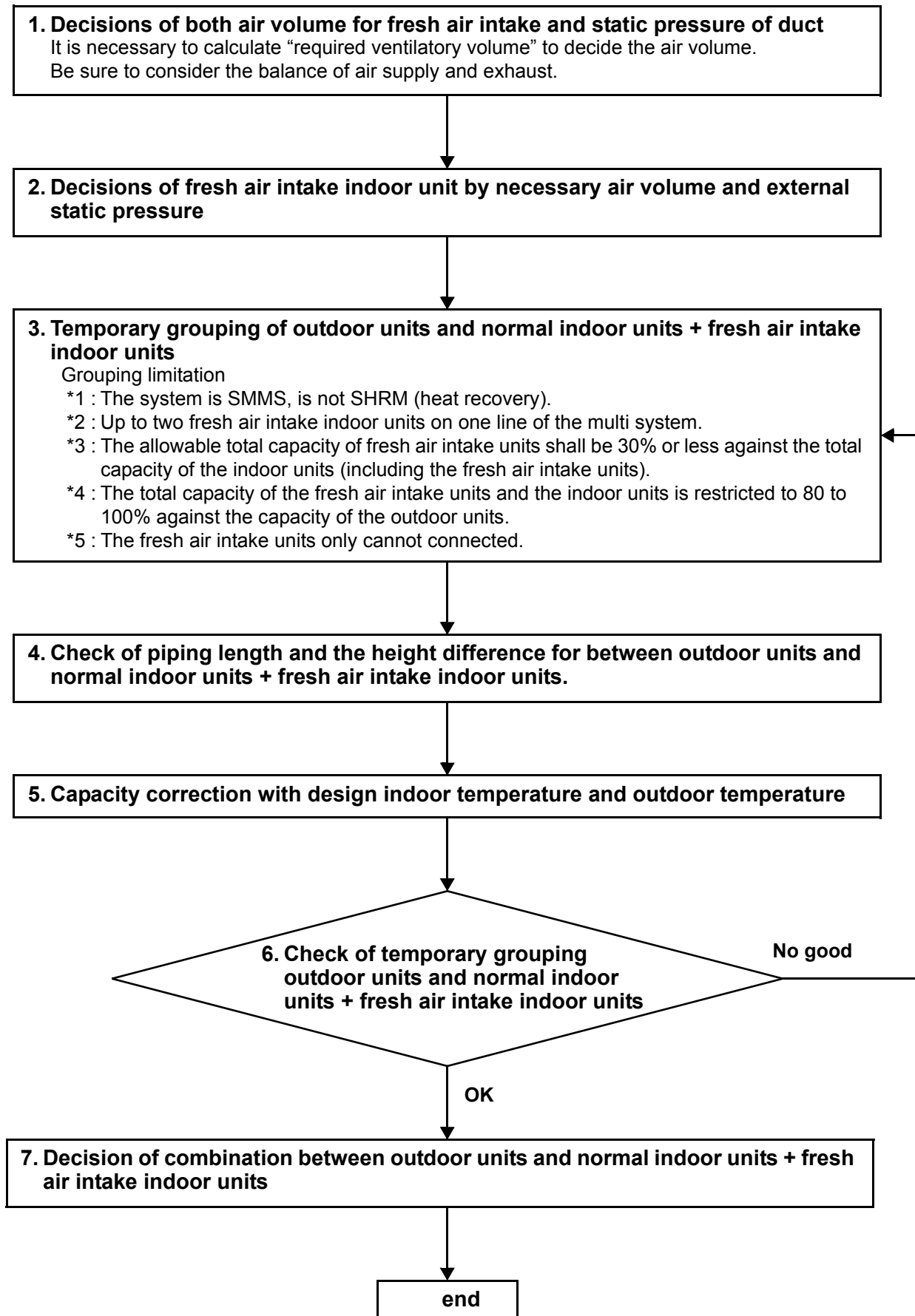
• Total load in all rooms



1. The total load on the floor is calculated by adding the hourly cooling loads of the five rooms.
2. The maximum value of total load is used to select outdoor module.

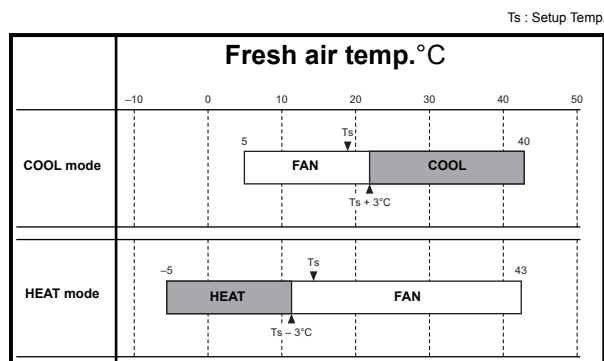
6-6. Selection procedure for fresh air intake indoor unit

6-6-1. Selection flow chart



6-6-2. Operable temperature range and discharge temperature set up

Operable temperature range



Operable mode and sidecharge temp setup range

Operation mode	At shipment from factory	Setup range
COOL	18°C	16 to 27°C
HEAT	25°C	16 to 27°C

- In cooling operation, if the temperature is below 5°C, the operation stops automatically. (FAN stop)
- In heating operation, if the temperature is below -5°C, the operation stops automatically. (FAN stop)
(To protect the refrigerant cycle)

6-6-3. Calculation of required ventilatory volume

The required ventilatory volume (air supply quantity) is calculated depending on the ventilation purpose or the number of ventilation ducts.

Ex. Calculation method based on a general living room under Japanese Building Standard Law

Available amount of ventilation V [m^3/h]

$$V = 20 \text{ Af}/N$$

Af : Floor space of the living room m^2

N : Occupation area per room m^2

If $N > 10$, please set N to 10.

(In the case of a living room of the special building, please change 10m^2 to 3m^2 as N.)

Af/N means number of people in the living room.

So if "X" as number of people in the living room is settled, V is able to define by the below expression

$$V = 20 \times X$$

This expression is based on Japanese Building Standard Law and the coefficient "20" (unit : m^3/h) is based on exhaust volume of carbon dioxide by breathing per person who is quietly sitting adult male.

Although the coefficient is not always enough ventilatory volume.

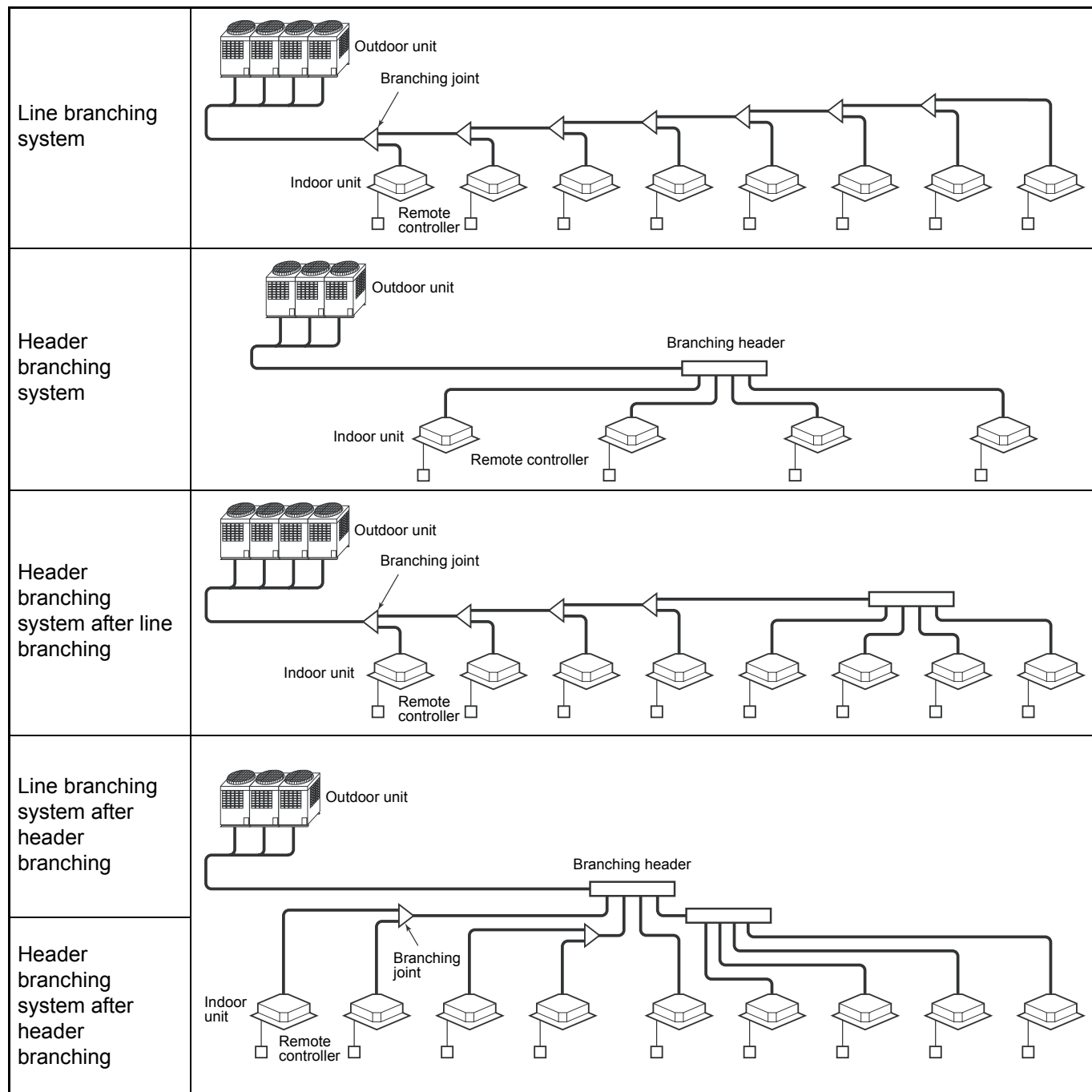
In fact in ASHRAE (American Society of Heating Refrigerating and Air-Conditioning Engineers), it shows **30** m^3/h per person as its guideline in consideration of smells of the cigarette and so on.

Please calculate the required ventilatory volume with meeting for local regulations, market requirements and customer's purpose.

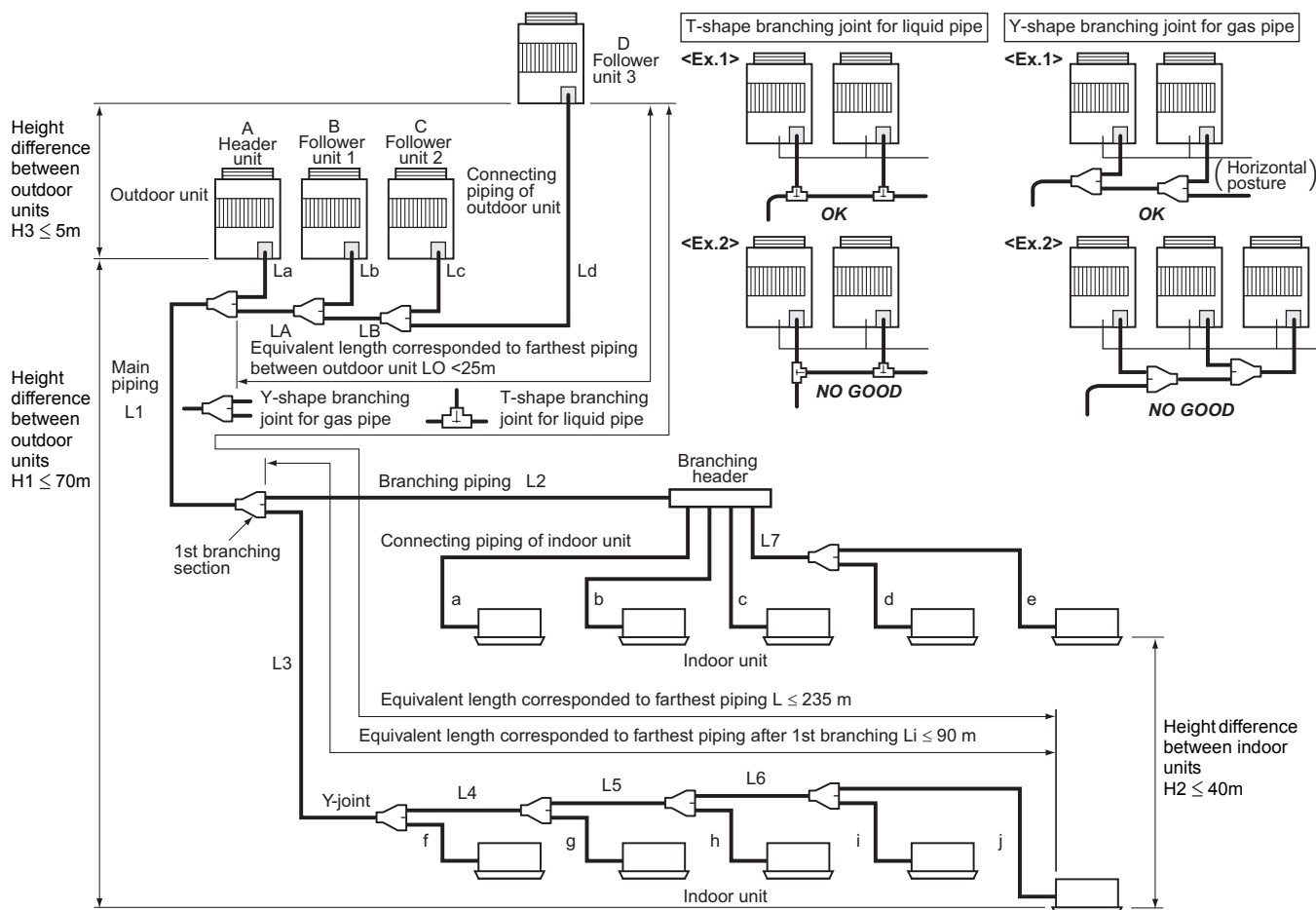
7-2. Free branching system

- [1] Line branching system
- [2] Header branching system
- [3] Header branching system after line branching
- [4] Line branching system after header branching
- [5] Header branching system after header branching

The above five branching systems enable to dramatically increase the flexibility of refrigerant piping design.



7-3. Allowable length/height difference of refrigerant piping



System restrictions

Max. No. of combined outdoor units	4 units
Max. capacity of combined outdoor units	48 HP
Max. No. of connected indoor units	48 units
Max. capacity of combined indoor units	H2 ≤ 15 135%
	H2 > 15 105%

- Note 1)** Combination of outdoor units: Header unit (1 unit) + Follower units (0 to 3 units). Header unit is the outdoor unit nearest to the connected indoor units.
- Note 2)** Install the outdoor units in order of capacity.
(Header unit ≥ Follower unit 1 ≥ Follower unit 2 ≥ Follower unit 3)
- Note 3)** Use Y-shape branching joint in connecting of gas pipe for outdoor unit, and install horizontally. (Header unit ≥ Follower unit 1 ≥ Follower unit 2 ≥ Follower unit 3)
- Note 4)** Piping to indoor units shall be perpendicular to piping to the header outdoor unit as <Ex.1>. Do not connect piping to indoor units in the same direction of header outdoor unit as T-shape branching joint for liquid pipe of <Ex.2>.

Farthest piping length L(*1) by capacity of outdoor units

	Standard model					High efficiency model		
Capacity (HP)	5,6	8~16	18~32	34~44	46, 48	16	24~44	46, 48
Equivalent length (m)	175	210	220	235	185	210	235	185
Real length (m)	150	170	180	190	155	180	190	155

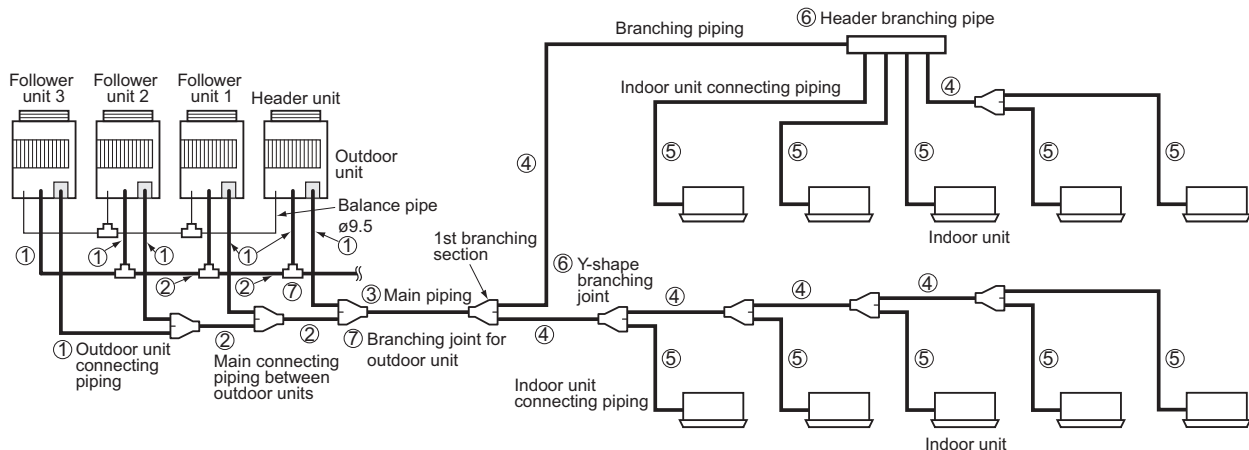
Note : All values of above table decrease 25m when H1 exceeds 3m, except 5HP & 6HP.

Allowable length and height difference of refrigerant piping

		Allowable value	Piping section
Piping length	Total extension of pipe (Liquid pipe, real length)	Below 34HP 300m 34HP or more 500m	LA + LB + La + Lb + Lc + Ld + L1 + L2 + L3 + L4 + L5 + L6 + L7 + a + b + c + d + e + f + g + h + i + j
	Farthest piping Length L (*1)	Equivalent length 235m Real length 190m	LA + LB + Ld + L1 + L3 + L4 + L5 + L6 + j
	Equivalent length of farthest piping from 1st branching Li (*1)	90m (*2)	L3 + L4 + L5 + L6 + j
	Equivalent length of farthest piping between outdoor units LO (*1)	25m	LA + LB + Ld(LA + Lb, LA + LB + Ld)
	Max. equivalent length of main piping	Equivalent length 120m (*3) Real length 100m (*3)	L1
	Max. equivalent length of outdoor unit connecting piping	10m	Ld(La, Lb, Lc)
	Max. real length of indoor unit connecting piping	30m	a, b, c, d, e, f, g, h, i, j
	Max. equivalent length between branches	50m	L2, L3, L4, L5, L6, L7
Difference in height	Height between indoor and outdoor units H1	Upper outdoor unit 70m (*4) Lower outdoor unit 40m (*5)	—
	Height between indoor units H2	40m (*6)	—
	Height between outdoor units H3	5m	—
			—

- (*1) : (D) is outdoor unit furthest from the 1st branch and (j) is the indoor unit furthest from the 1st branch.
- (*2) : If the height difference (H1) between indoor and outdoor unit exceeds 3m, set 65m or less. In case of 5HP & 6HP, it is 65m or less regardless of H1.
- (*3) : If the max. combined outdoor unit capacity is 46HP or more, then max. equivalent length is 70m or less (real length is 50m or less). In case of 5HP & 6HP, the equivalent length is 85m or less when under 46HP, and 70m or less when 46HP or more.
- (*4) : If the height difference (H2) between indoor units exceeds 3m, set 50m or less. In case of 5HP & 6HP, it is 50m or less regardless of H2.
- (*5) : If the height difference (H2) between indoor units exceeds 3m, set 30m or less.
- (*6) : In case of 5HP & 6HP, it is 30m or less.

7-4. Selection of refrigerant piping



① Pipe size of outdoor unit (Table 1)

Model name MMY-	Gas side	Liquid side
MAP0501*	ø15.9	ø9.5
MAP0601*	ø19.1	ø9.5
MAP0804*	ø22.2	ø12.7
MAP1004*	ø22.2	ø12.7
MAP1204*	ø28.6	ø12.7
MAP1404*	ø28.6	ø15.9
MAP1604*	ø28.6	ø15.9

② Connecting pipe size between outdoor units (Table 2)

Total capacity code of outdoor units at downstream side *1	Gas side	Liquid side	Balance pipe
16 to below 22	ø28.6	ø15.9	ø9.5
22 to below 26	ø34.9	ø15.9	
26 to below 36	ø34.9	ø19.1	
36 or more	ø41.3	ø22.2	

③ Size of main pipe (Table 3)

Total capacity code of all outdoor units *1	Gas side	Liquid side
Below 6	ø15.9	ø9.5
6 to below 8	ø19.1	ø9.5
8 to below 12	ø22.2	ø12.7
12 to below 14	ø28.6	ø12.7
14 to below 22	ø28.6	ø15.9
22 to below 36	ø34.9	ø19.1
36 to below 46	ø41.3	ø22.2
46 or more *7	ø41.3	ø22.2

Determine thickness of the main pipe according to capacity of the outdoor units.

④ Pipe size between branching sections (Table 4)*5

SMMS-i 8HP to 48HP		
Total capacity code of indoor units at downstream side *1	Gas side	Liquid side
2.4 or less	ø12.7	ø9.5
2.4 to below 6.4	ø15.9	ø9.5
6.4 to below 12.2	ø22.2	ø12.7
12.2 to below 20.2	ø28.6	ø15.9
20.2 to below 35.2	ø34.9	ø19.1
35.2 or more	ø41.3	ø22.2

SMMS 5HP & 6HP		
Total capacity code of indoor units at downstream side *1	Gas side	Liquid side
2.8 or less	ø12.7	ø9.5
2.8 to below 6.4	ø15.9	ø9.5
6.4 or more	ø22.2	ø12.7

If the total capacity code value of indoor units exceeds that of the outdoor units, apply the capacity code of outdoor units.

⑤ Piping of indoor unit (Table 5)

Capacity rank	Gas side	Liquid side
007 type to 012 type	Actual length 15m or less: ø9.5 Actual length exceeds 15m: ø12.7	ø6.4 ø6.4
015 type to 018 type	ø12.7	ø6.4
024 type to 056 type	ø15.9	ø9.5
072 type to 096 type	ø22.2	ø12.7

⑥ Selection of branching section (Table 6)

	Total capacity code of indoor unit *1	Model name
Y-shape branching joint *2 *3 *8	Below 6.4	RBM-BY55E
	6.4 to below 14.2	RBM-BY105E
	14.2 to below 25.2	RBM-BY205E
	25.2 or more	RBM-BY305E
Branching header *2 *3 *6 *8	For 4 branching	Below 14.2: RBM-HY1043E 14.2 to below 25.2: RBM-HY2043E
	For 8 branching	Below 14.2: RBM-HY1083E 14.2 to below 25.2: RBM-HY2083E

⑦ Selection of branching joint for outdoor unit (Table 7)

	Total capacity code of outdoor unit	Joints			Model name
		Gas (Y-shape)	Liquid (T-shape)	Balance (T-shape)	
Branching joint for outdoor unit	Below 26	ø31.8 ø25.4	ø19.1 ø19.1	ø9.5 ø9.5	RBM-BT14E
	26 or more	ø38.1 ø28.6	ø22.2 ø22.2	ø9.5 ø9.5	RBM-BT24E

⑧ Minimum wall thickness for R410A application (Table 8)

Soft	Half hard or hard	OD (Inch)	OD (mm)	Minimum wall thickness (mm)
OK	OK	1/4"	6.35	0.80
OK	OK	3/8"	9.52	0.80
OK	OK	1/2"	12.70	0.80
OK	OK	5/8"	15.88	1.00
NG*4	OK	3/4"	19.05	1.00
NG*4	OK	7/8"	22.20	1.00
NG*4	OK	1.1/8"	28.58	1.00
NG*4	OK	1.3/8"	34.92	1.10
NG*4	OK	1.5/8"	41.28	1.25

*1 Code is determined according to the capacity rank.

*2 When using a branching joint for the 1st branch, select according to capacity code of the outdoor unit.

*3 For 1 line after branching header indoor units with a maximum capacity code of 6.0 in total can be connected.

*4 If the pipe size is Ø19.0 or more, use a suitable material as detailed in the installation manual.

*5 If the piping size becomes over main piping size, select the size same as main piping.

*6 When the first branch is a header with the outdoor total capacity codes of 12 to 26, apply the model RBM-HY2043E(4-branch) or RBM-HY2083E(8-branch) regardless of the total capacity codes of the downstream indoor units.

*7 The maximum equivalent length of main pipe should be 70m or shorter.

*8 When the sum of capacity code of indoor units exceeds the capacity code of outdoor units, select according to capacity code of the outdoor units.

7-5. Charging requirement with additional refrigerant

After the system has been vacuumed, replace the vacuum pump with a refrigerant cylinder and system with additional refrigerant.



*SMMS

Calculating the amount of additional refrigerant required

Refrigerant in the system when shipped from the factory

		5HP*	6HP*	8HP	10HP	12HP	14HP	16HP
Refrigerant amount charged in factory	Heat pump model	8.5kg	8.5kg	11.5kg	11.5kg	11.5kg	11.5kg	11.5kg
	Cooling only model	8.0kg	8.0kg	10.5kg	10.5kg	10.5kg	11.5kg	11.5kg

When the system is charged with refrigerant at the factory, the amount of refrigerant needed for the pipes at the site is not included. Therefore, calculate the additional amount needed and add the required amount to the system.

(Calculation)

Additional refrigerant charge amount is calculated based on the size of liquid pipe at site and its real length.

Additional refrigerant charge amount at site =
 Real length of liquid pipe × Additional refrigerant charge amount per liquid pipe 1m (Table 1) + Compensation by system HP (Table 2)

Example : Additional charge amount R (kg) = (L1 × 0.025kg/m) + (L2 × 0.055kg/m) + (L3 × 0.105kg/m) + (3.0kg)

L1 : Real total length of liquid pipe ø6.4 (m)

L2 : Real total length of liquid pipe ø9.5 (m)

L3 : Real total length of liquid pipe ø12.7 (m)

Table 1

Pipe dia. at liquid side	ø6.4	ø9.5	ø12.7	ø15.9	ø19.0	ø22.2
Additional refrigerant amount/1m	0.025kg	0.055kg	0.105kg	0.160kg	0.250kg	0.350kg

Table 2

Standard model

Combined horse power (HP)	Outdoor combination(HP)			Compensation by System HP (kg)
5*	5			0.0
6*	6			0.0
8	8			1.5
10	10			2.5
12	12			3.5
14	14			8.5
16	16			10.5
18	10	8		0.0
20	10	10		3.0
22	12	10		5.0
24	12	12		7.5
26	16	10		8.5
28	16	12		9.5
30	16	14		11.5
32	16	16		12.5
34	12	12	10	3.0
36	12	12	12	4.0
38	16	12	10	6.0
40	16	12	12	7.0
42	16	14	12	8.0
44	16	16	12	10.0
46	16	16	14	12.0
48	16	16	16	14.0

High efficiency model

Combined horse power (HP)	Outdoor combination(HP)				Compensation by System HP (kg)
-					-
-					-
-					-
-					-
-					-
-					-
16	8	8			0.0
-					-
-					-
-					-
24	8	8	8		-4.0
26	10	8	8		-4.0
28	10	10	8		-2.0
30	10	10	10		0.0
32	8	8	8	8	-6.0
34	10	8	8	8	-6.0
36	10	10	8	8	-6.0
38	10	10	10	8	-6.0
40	10	10	10	10	-5.0
42	12	10	10	10	-4.0
44	12	12	10	10	-2.0
46	12	12	12	10	0.0
48	12	12	12	12	2.0

*SMMS

9-1.General

- Perform wiring of the power supply in conformance with the regulations of the local electric company.
- For cabling of the power supply of the indoor unit and the inter-unit cabling between indoor and outdoor units, refer to the Installation Manual of indoor unit.
- Never connect power supply to the terminal block (U1, U2, U3, U4, U5, U6) for control wiring.
(The equipment breaks down.)
- Arrange the cables so that the electric wires do not come to contact with high-temperature part of the pipe; otherwise coating melts and an accident may be caused.
- After connecting cable to the terminal block, take off the trap and then fix the cable with cable clamp.
- Do not turn on power of the indoor unit until vacuuming of the refrigerant pipe will finish.

9-2.Summary of wiring design

Design of outdoor unit power supply

- Select the wiring depending on MCA.
- Be sure to set the earth leakage breaker from the viewpoint of safety.

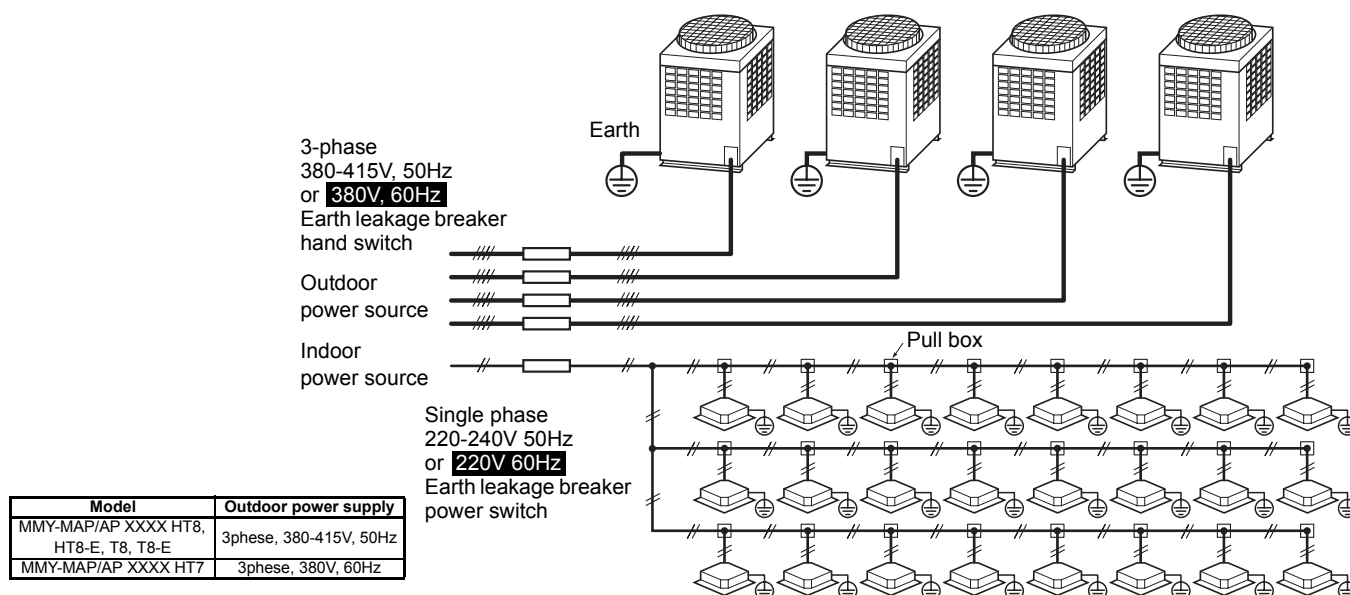
Design of indoor unit power supply

- Select the wiring depending on total current of indoor units.
- Determine the wire size for the length rules.
- Be sure to set the earth leakage breaker from the viewpoint of safety.

Design of control wiring

- Design each control wiring.
Between outdoor and indoor units,
Between indoor units/outdoor units
Between indoor unit and remote controller, central control, BMS
- Select the wire size and type depending on the length rules.

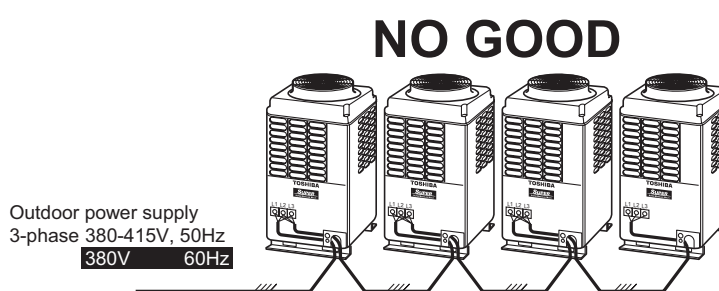
9-3.Electrical wiring design



- Wiring size must comply with the applicable local and national code.
- Determine the wire size for the indoor unit according to the number of connected indoor units downstream.

9-4.Outdoor unit power supply

- Select the power supply cabling and fuse of each outdoor unit from the following specifications:
cable 4-core, in conformance with Design 60245 IEC 66
- Do not connect the outdoor units by crossing outside of them, but connect them via the terminal block (L1, L2, L3, N).



Outdoor unit data

Standard model

* : SMMS model

Type	HP	Heat Pump Model MMY-	Cooling Only Model MMY-	Power Supply		Voltage Range		Compressor				Fan Motor (kW)	MCA (A)	MOCP (A)
				Phase and frequency	Nominal Voltage	Min. (V)	Max (V)	Unit No.1 (kW)	Unit No.2 (kW)	Unit No.3 (kW)	Unit No.4 (kW)			
Single unit	5*	MAP0501HT8-E*	MAP0501T8-E*	3N~ 50Hz	380-400-415V	342	456	1.1 x 2				0.6	16.5	20
	6*	MAP0601HT8-E*	MAP0601T8-E*	3N~ 50Hz	380-400-415V	342	456	1.4 x 2				0.6	16.5	20
	8	MAP0804HT8-E	MAP0804T8-E	3N~ 50Hz	380-400-415V	342	456	2.3 x 2				1.0	23.5	32
	10	MAP1004HT8-E	MAP1004T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2				1.0	25.5	32
	12	MAP1204HT8-E	MAP1204T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2				1.0	28.5	40
	14	MAP1404HT8-E	MAP1404T8-E	3N~ 50Hz	380-400-415V	342	456	3.0 x 3				1.0	33.2	40
Combination of outdoor unit	16	MAP1604HT8-E	MAP1604T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3				1.0	36.5	50
	18	MAP1814HT8-E	MAP1814T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	2.3 x 2			1.0 x 2	49.0	63
	20	MAP2014HT8-E	MAP2014T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2			1.0 x 2	51.0	63
	22	MAP2214HT8-E	MAP2214T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2	3.1 x 2			1.0 x 2	54.0	63
	24	MAP2414HT8-E	MAP2414T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2			1.0 x 2	57.0	63
	26	MAP2614HT8-E	MAP2614T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	3.1 x 2			1.0 x 2	62.0	80
	28	MAP2814HT8-E	MAP2814T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	4.2 x 2			1.0 x 2	65.0	80
	30	MAP3014HT8-E	MAP3014T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	3.0 x 3			1.0 x 2	69.7	80
	32	MAP3214HT8-E	MAP3214T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	3.6 x 3			1.0 x 2	73.0	100
	34	MAP3414HT8-E	MAP3414T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	3.1 x 2		1.0 x 3	82.5	100
	36	MAP3614HT8-E	MAP3614T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	4.2 x 2		1.0 x 3	85.5	100
	38	MAP3814HT8-E	MAP3814T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	4.2 x 2	3.1 x 2		1.0 x 3	90.5	100
	40	MAP4014HT8-E	MAP4014T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	4.2 x 2	4.2 x 2		1.0 x 3	93.5	125
	42	MAP4214HT8-E	MAP4214T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	3.0 x 3	4.2 x 2		1.0 x 3	98.2	125
	44	MAP4414HT8-E	MAP4414T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	3.6 x 3	4.2 x 2		1.0 x 3	101.5	125
	46	MAP4614HT8-E	MAP4614T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	3.6 x 3	3.0 x 3		1.0 x 3	106.2	125
	48	MAP4814HT8-E	MAP4814T8-E	3N~ 50Hz	380-400-415V	342	456	3.6 x 3	3.6 x 3	3.6 x 3		1.0 x 3	109.5	125

High efficiency model

Type	HP	Heat Pump Model MMY-	Cooling Only Model MMY-	Power Supply		Voltage Range		Compressor				Fan Motor (kW)	MCA (A)	MOCP (A)
				Phase and frequency	Nominal Voltage	Min. (V)	Max (V)	Unit No.1 (kW)	Unit No.2 (kW)	Unit No.3 (kW)	Unit No.4 (kW)			
Combination of outdoor unit	16	MAP1624HT8-E	MAP1624T8-E	3N~ 50Hz	380-400-415V	342	456	2.3 x 2	2.3 x 2			1.0 x 2	46.9	63
	24	MAP2424HT8-E	MAP2424T8-E	3N~ 50Hz	380-400-415V	342	456	2.3 x 2	2.3 x 2	2.3 x 2		1.0 x 3	70.4	80
	26	MAP2624HT8-E	MAP2624T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	2.3 x 2	2.3 x 2		1.0 x 3	72.4	80
	28	MAP2824HT8-E	MAP2824T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	2.3 x 2	2.3 x 2		1.0 x 3	74.5	100
	30	MAP3024HT8-E	MAP3024T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	3.1 x 2		1.0 x 3	76.5	100
	32	MAP3224HT8-E	MAP3224T8-E	3N~ 50Hz	380-400-415V	342	456	2.3 x 2	2.3 x 2	2.3 x 2	2.3 x 2	1.0 x 4	93.8	125
	34	MAP3424HT8-E	MAP3424T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	2.3 x 2	2.3 x 2	2.3 x 2	1.0 x 4	95.9	125
	36	MAP3624HT8-E	MAP3624T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	2.3 x 2	2.3 x 2	1.0 x 4	97.9	125
	38	MAP3824HT8-E	MAP3824T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	3.1 x 2	2.3 x 2	1.0 x 4	100	125
	40	MAP4024HT8-E	MAP4024T8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	3.1 x 2	3.1 x 2	1.0 x 4	102	125
	42	MAP4224HT8-E	MAP4224T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2	3.1 x 2	3.1 x 2	3.1 x 2	1.0 x 4	105	125
	44	MAP4424HT8-E	MAP4424T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	3.1 x 2	3.1 x 2	1.0 x 4	108	125
	46	MAP4624HT8-E	MAP4624T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	4.2 x 2	3.1 x 2	1.0 x 4	111	125
	48	MAP4824HT8-E	MAP4824T8-E	3N~ 50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	4.2 x 2	4.2 x 2	1.0 x 4	114	125

Notes MCA : Minimum Circuit Amps
MOCP : Maximum Overcurrent Protection (Amps)



9-5. Indoor unit power supply

• Electrical characteristics

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	MMU-AP0092H	230-1-50	198	264	0.014	0.63	0.79	15
	MMU-AP0122H	230-1-50	198	264	0.014	0.63	0.79	15
	MMU-AP0152H	230-1-50	198	264	0.014	0.80	1.00	15
	MMU-AP0182H	230-1-50	198	264	0.014	0.80	1.00	15
	MMU-AP0242H	230-1-50	198	264	0.020	0.87	1.09	15
	MMU-AP0272H	230-1-50	198	264	0.020	0.87	1.09	15
	MMU-AP0302H	230-1-50	198	264	0.020	0.87	1.09	15
	MMU-AP0362H	230-1-50	198	264	0.068	1.15	1.44	15
Compact 4-way Cassette (600 x 600) Type	MMU-AP0482H	230-1-50	198	264	0.072	1.15	1.44	15
	MMU-AP0562H	230-1-50	198	264	0.072	1.15	1.44	15
	MMU-AP0074MH-E	230-1-50	198	264	0.060	0.32	0.40	15
	MMU-AP0094MH-E	230-1-50	198	264	0.060	0.35	0.44	15
	MMU-AP0124MH-E	230-1-50	198	264	0.060	0.36	0.45	15
2-Way Air Discharge Cassette Type	MMU-AP0154MH-E	230-1-50	198	264	0.060	0.48	0.60	15
	MMU-AP0184MH-E	230-1-50	198	264	0.060	0.48	0.60	15
	MMU-AP0072WH	230-1-50	198	264	0.020	0.32	0.40	15
	MMU-AP0092WH	230-1-50	198	264	0.020	0.32	0.40	15
	MMU-AP0122WH	230-1-50	198	264	0.020	0.32	0.40	15
	MMU-AP0152WH	230-1-50	198	264	0.020	0.32	0.40	15
	MMU-AP0182WH	230-1-50	198	264	0.030	0.70	0.88	15
	MMU-AP0242WH	230-1-50	198	264	0.040	0.81	1.01	15
	MMU-AP0272WH	230-1-50	198	264	0.040	0.81	1.01	15
	MMU-AP0302WH	230-1-50	198	264	0.050	0.81	1.01	15
1-Way Air Discharge Cassette Type	MMU-AP0362WH	230-1-50	198	264	0.070	0.87	1.09	15
	MMU-AP0485WH	230-1-50	198	264	0.070	0.87	1.09	15
	MMU-AP0562WH	230-1-50	198	264	0.070	0.87	1.09	15
	MMU-AP0074YH-E	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP0094YH-E	230-1-50	198	264	0.022	0.28	0.35	15
Concealed Duct Type	MMU-AP0124YH-E	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP0154SH-E	230-1-50	198	264	0.030	0.40	0.49	15
	MMU-AP0184SH-E	230-1-50	198	264	0.030	0.42	0.53	15
	MMU-AP0244SH-E	230-1-50	198	264	0.030	0.71	0.88	15
	MMD-AP0074BH-E	230-1-50	198	264	0.120	0.33	0.41	15
	MMD-AP0094BH-E	230-1-50	198	264	0.120	0.33	0.41	15
	MMD-AP0124BH-E	230-1-50	198	264	0.120	0.39	0.49	15
	MMD-AP0154BH-E	230-1-50	198	264	0.120	0.39	0.49	15
	MMD-AP0184BH-E	230-1-50	198	264	0.120	0.50	0.62	15
	MMD-AP0244BH-E	230-1-50	198	264	0.120	0.60	0.75	15
Concealed Duct High Static Pressure Type	MMD-AP0274BH-E	230-1-50	198	264	0.120	0.60	0.75	15
	MMD-AP0304BH-E	230-1-50	198	264	0.120	0.70	0.88	15
	MMD-AP0364BH-E	230-1-50	198	264	0.120	0.96	1.20	15
	MMD-AP0484BH-E	230-1-50	198	264	0.120	1.13	1.41	15
	MMD-AP0564BH-E	230-1-50	198	264	0.120	1.13	1.41	15
	MMD-AP0184H-E	230-1-50	198	264	0.160	0.93	1.16	15
	MMD-AP0244H-E	230-1-50	198	264	0.160	1.55	1.94	15
Slim Duct Type	MMD-AP0274H-E	230-1-50	198	264	0.160	1.55	1.94	15
	MMD-AP0364H-E	230-1-50	198	264	0.260	1.87	2.34	15
	MMD-AP0484H-E	230-1-50	198	264	0.260	2.12	2.65	15
	MMD-AP0724H-E	230-1-50	198	264	0.370 x 3	6.04	7.55	15
	MMD-AP0964H-E	230-1-50	198	264	0.370 x 3	6.35	7.94	15
Ceiling Type	MMD-AP0074SPH-E	230-1-50	198	264	0.060	0.35	0.44	15
	MMD-AP0094SPH-E	230-1-50	198	264	0.060	0.35	0.44	15
	MMD-AP0124SPH-E	230-1-50	198	264	0.060	0.37	0.47	15
	MMD-AP0154SPH-E	230-1-50	198	264	0.060	0.38	0.48	15
	MMD-AP0184SPH-E	230-1-50	198	264	0.060	0.47	0.59	15
	MMC-AP0154H-E	230-1-50	198	264	0.030	0.33	0.41	15
	MMC-AP0184H-E	230-1-50	198	264	0.030	0.37	0.46	15
	MMC-AP0244H-E	230-1-50	198	264	0.040	0.48	0.60	15
	MMC-AP0274H-E	230-1-50	198	264	0.040	0.48	0.60	15
	MMC-AP0364H-E	230-1-50	198	264	0.080	0.90	1.13	15
	MMC-AP0484H-E	230-1-50	198	264	0.080	0.96	1.20	15



Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
High-wall Type (3 series)	MMK-AP0073H	230-1-50	198	264	0.030	0.20	0.22	15
	MMK-AP0093H	230-1-50	198	264	0.030	0.22	0.24	15
	MMK-AP0123H	230-1-50	198	264	0.030	0.22	0.24	15
	MMK-AP0153H	230-1-50	198	264	0.030	0.37	0.40	15
	MMK-AP0183H	230-1-50	198	264	0.030	0.37	0.40	15
	MMK-AP0243H	230-1-50	198	264	0.030	0.43	0.47	15
High-wall Type (4 series)	MMK-AP0074MH-E	230-1-50	198	264	0.030	0.20	0.24	15
	MMK-AP0094MH-E	230-1-50	198	264	0.030	0.21	0.26	15
	MMK-AP0124MH-E	230-1-50	198	264	0.030	0.22	0.27	15
Floor Standing Cabinet Type	MML-AP0074H-E	230-1-50	198	264	0.045	0.30	0.37	15
	MML-AP0094H-E	230-1-50	198	264	0.045	0.30	0.37	15
	MML-AP0124H-E	230-1-50	198	264	0.045	0.49	0.62	15
	MML-AP0154H-E	230-1-50	198	264	0.045	0.49	0.62	15
	MML-AP0184H-E	230-1-50	198	264	0.070	0.54	0.68	15
	MML-AP0244H-E	230-1-50	198	264	0.070	0.54	0.68	15
Floor Standing Concealed Type	MML-AP0074BH-E	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP0094BH-E	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP0124BH-E	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP0154BH-E	230-1-50	198	264	0.070	0.52	0.65	15
	MML-AP0184BH-E	230-1-50	198	264	0.070	0.52	0.65	15
	MML-AP0244BH-E	230-1-50	198	264	0.070	0.53	0.66	15
Floor Standing Type	MMF-AP0154H-E	230-1-50	198	264	0.037	0.77	0.96	15
	MMF-AP0184H-E	230-1-50	198	264	0.037	0.77	0.96	15
	MMF-AP0244H-E	230-1-50	198	264	0.063	1.01	1.27	15
	MMF-AP0274H-E	230-1-50	198	264	0.063	1.01	1.27	15
	MMF-AP0364H-E	230-1-50	198	264	0.110	1.48	1.85	15
	MMF-AP0484H-E	230-1-50	198	264	0.160	1.84	2.30	15
Fresh Air Intake Indoor Unit Type	MMD-AP0481HFE	230-1-50	198	264	0.160	0.28	0.35	15
	MMD-AP0721HFE	230-1-50	198	264	0.16 x 2	0.45	0.56	15
	MMD-AP0961HFE	230-1-50	198	264	0.16 x 2	0.52	0.65	15
Console Type	MML-AP0074NH-E	230-1-50	198	264	0.041	0.21	0.26	15
	MML-AP0094NH-E	230-1-50	198	264	0.041	0.21	0.26	15
	MML-AP0124NH-E	230-1-50	198	264	0.041	0.25	0.31	15
	MML-AP0154NH-E	230-1-50	198	264	0.041	0.32	0.40	15
	MML-AP0184NH-E	230-1-50	198	264	0.041	0.46	0.58	15
Air to Air Heat exchanger with DX-coil Type	MMD-VN502HEXE	230-1-50	198	264	0.124 x 2	1.5	1.7	15
	MMD-VN802HEXE	230-1-50	198	264	0.217 x 2	2.6	3.0	15
	MMD-VN1002HEXE	230-1-50	198	264	0.284 x 2	2.9	3.5	15
Air to Air Heat exchanger with DX-coil, Humidifier Type	MMD-VNK502HEXE	230-1-50	198	264	0.124 x 2	1.5	1.7	15
	MMD-VNK802HEXE	230-1-50	198	264	0.217 x 2	2.6	2.9	15
	MMD-VNK1002HEXE	230-1-50	198	264	0.284 x 2	2.9	3.4	15

• Wiring size

Must be independent from the outdoor unit power supply

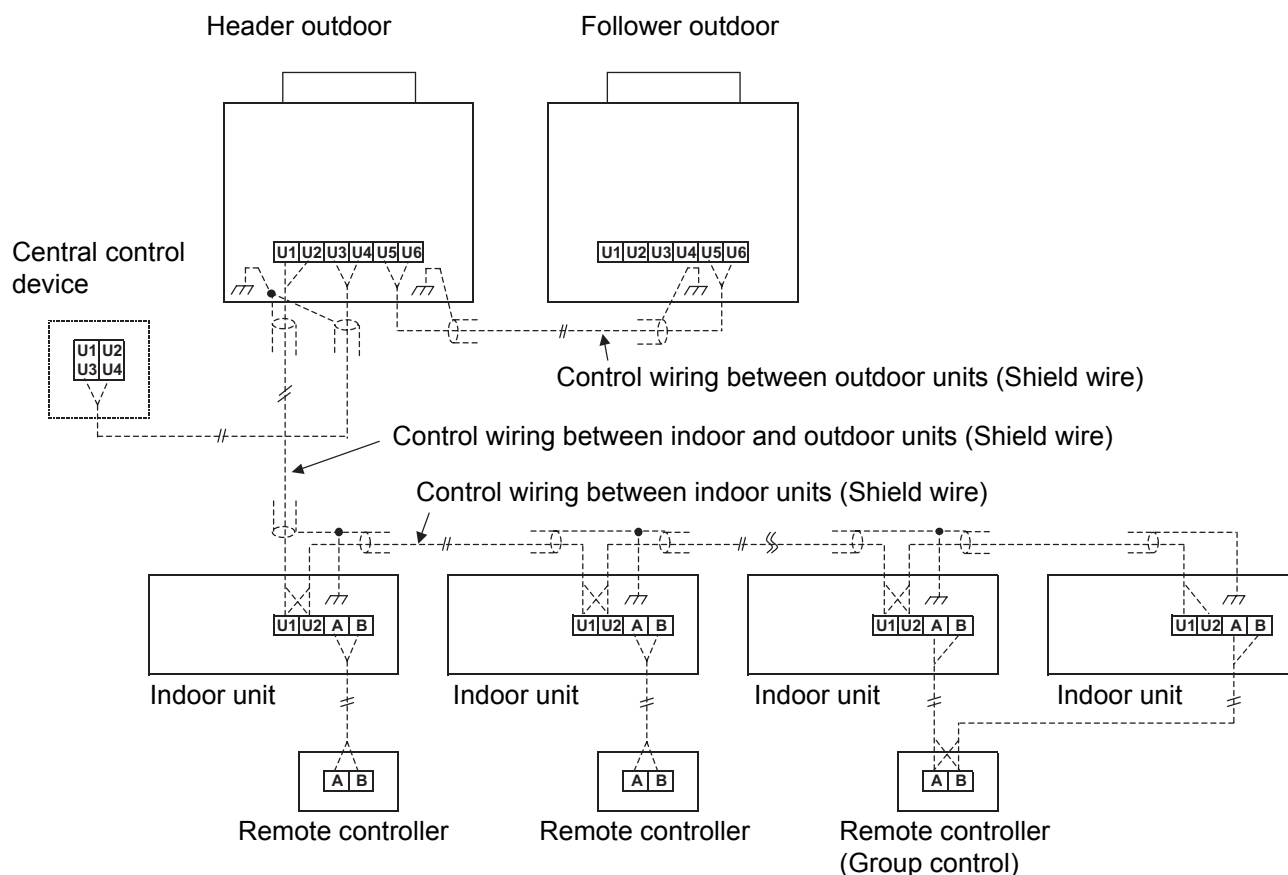
Model \ Item	Power supply wiring			
	Wire size			
All models of indoor units	2.0mm ² (AWG#14)	Max. 20m	3.5mm ² (AWG#12)	Max. 50m

NOTE:

The above connecting lengths stated in the table, indicate the length from the isolator to the outdoor unit. When the power supply of the indoor units are connected in parallel, it is assumed that no more than a 2% voltage drop will occur. If the connecting length is to exceed the stated lengths, select a suitable wire in accordance with the local wiring standards.

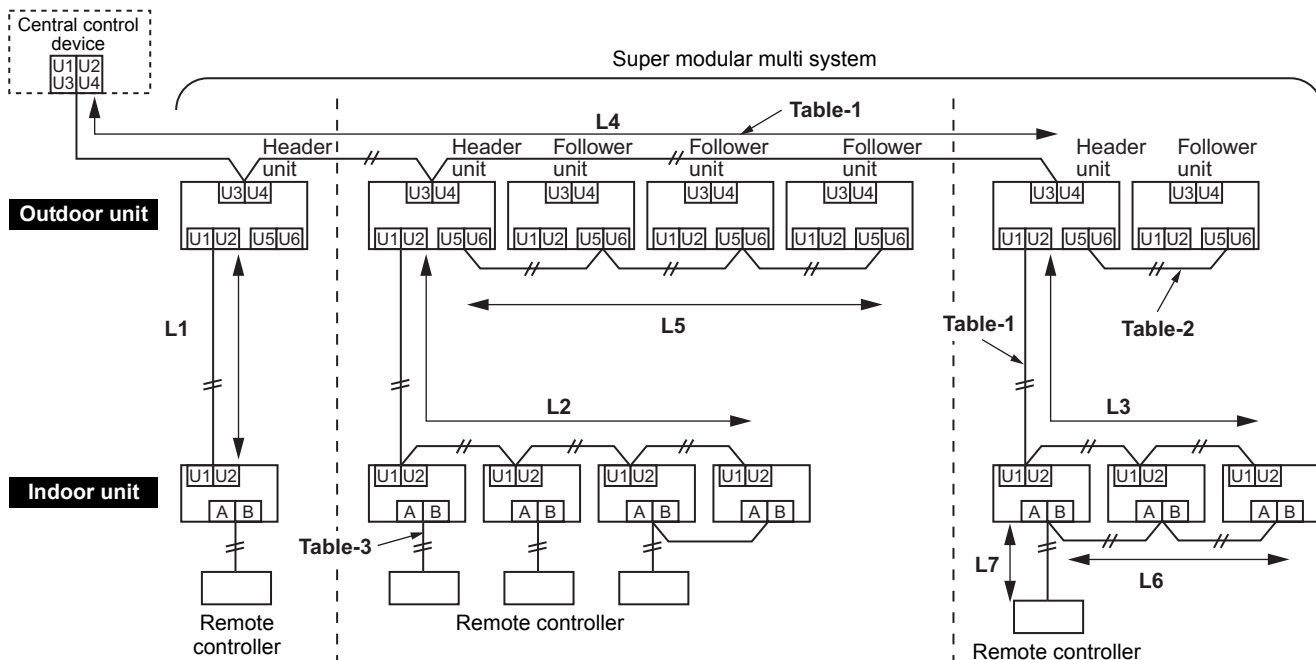
9-6.Design of control wiring

• Summary of control wiring



• Restriction of control wiring

Be sure to keep the rule of below tables about size and length of control wiring.



**Table-1 Control wiring between indoor and outdoor units (L1, L2, L3),
Central control wiring (L4)**

Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.25 mm ² : Up to 1000 m/2.0 mm ² : Up to 2000 m (*1)

Note (*1): Total length of control wiring length for all refrigerant circuits (L1 + L2 + L3 + L4)

Table-2 Control wiring between outdoor units (L5)

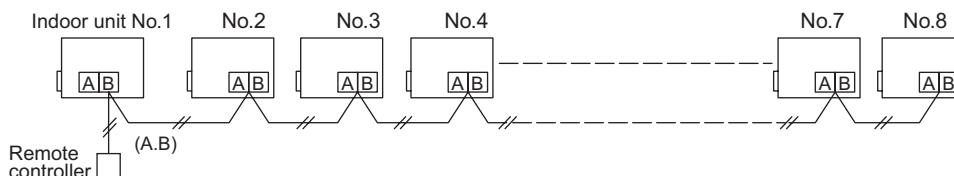
Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.25 mm ² to 2.0 mm ² /Up to 100 m (L5)

Table-3 Remote controller wiring (L6, L7)

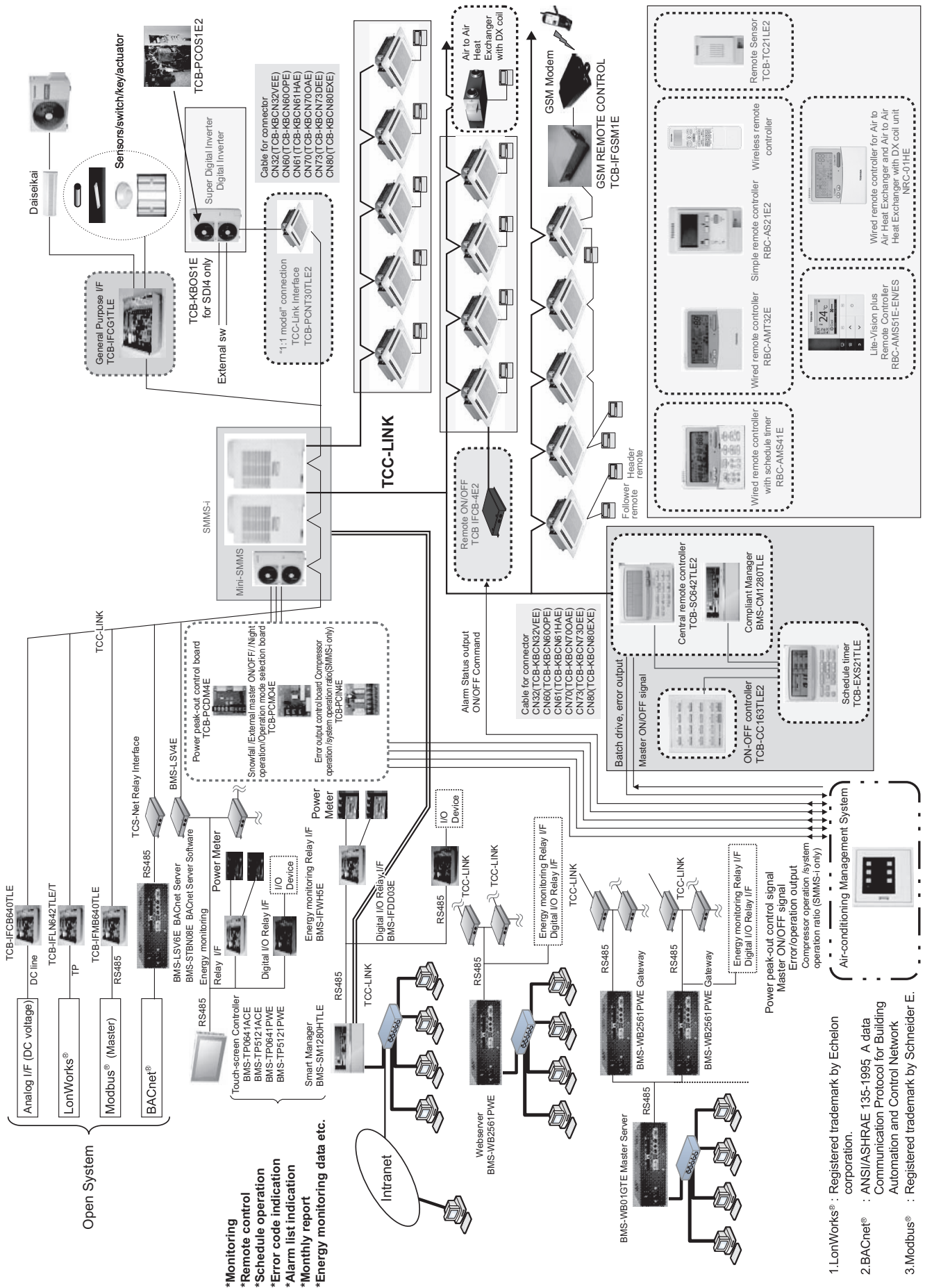
Wire	2-core
Size	0.5 mm ² to 2.0 mm ²
Length	- Up to 500 m (L6 + L7) - Up to 400 m in case of wireless remote controller in group control. - Up to 200 m total length of control wiring between indoor units (L6)

• Group Operation through a Remote Controller

Group operation of multiple indoor units (8 units) through a single remote controller switch



10-1. Outline of application Control chart

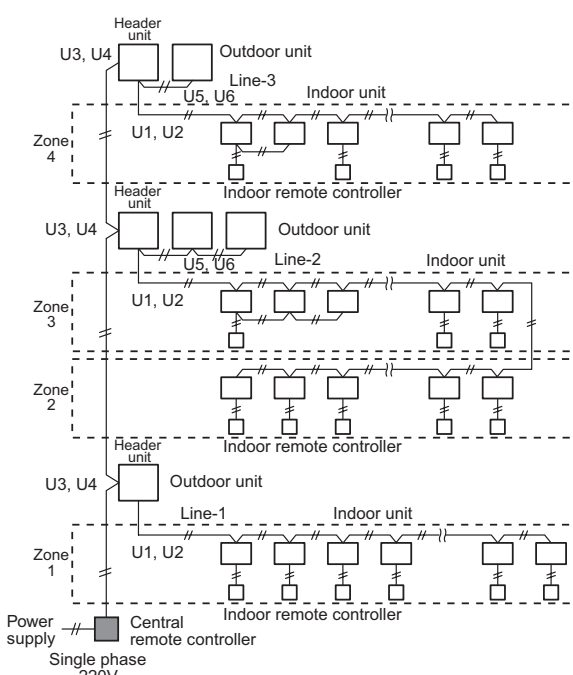


1. LonWorks® : Registered trademark by Echelon corporation
2. BACnet® : ANSI/ASHRAE 135-1995 A data Communication Protocol for Building Automation and Control Network
3. Modbus® : Registered trademark by Schneider E.

10-2. Applications for indoor remote controller

	Basic function	System diagram	Model
10-2-1	Individual control Air conditioner is individually operated at a distance.		- Wired remote controller RBC-AMT32E - Wired remote controller with schedule timer RBC-AMS41E - Simple wired remote controller RBC-AS21E2 - Wireless remote controller kit RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2
10-2-2	GROUP control One remote controller can control a group of up to a max. 8 indoor units. Operating on the same setting.		- Wired remote controller RBC-AMT32E - Wired remote controller with schedule timer RBC-AMS41E - Simple wired remote controller RBC-AS21E2 - Wireless remote controller kit RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2
10-2-3	Two remote control Air conditioner is controlled by two remote controllers in two locations.		- Wired remote controller RBC-AMT32E - Wired remote controller with schedule timer RBC-AMS41E - Simple wired remote controller RBC-AS21E2 - Wireless remote controller kit RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2
10-2-4	Control by schedule timer Schedule timer mode and Weekly timer mode		- Wired remote controller RBC-AMT32E - Central remote controller TCB-SC642TLE2 - Schedule timer TCB-EXS21TLE

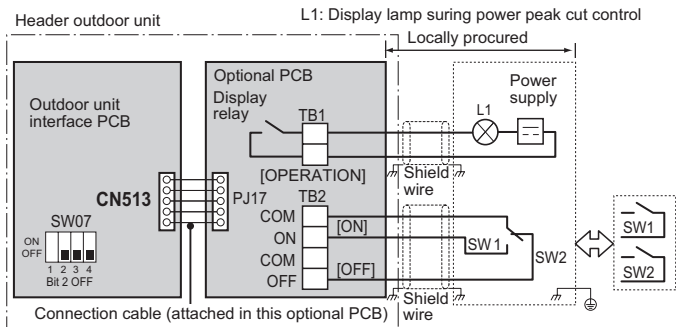
10-3. Application control for central remote controller

	Basic function	System diagram	Model
10-3-1	Central management controllers for 64/128 units	 Function of central remote controller TCB-SC642TLE2 - Individual control up to 64 indoor units - Individual control for max. 64 indoor units divided in to 4 zones (Up to 16 indoor units for each zone) - Up to 16 outdoor header units are connectable. - Setting for one of 1 to 4 zones is available. BMS-CM1280TLE - Individual control of up to (64 indoor units)*2 TCC-LINK buses - Individual control of up to (64 indoor units divided 1 to 64 zone)*2 TCC-LINK buses (Up to 64 indoor units for each zone) - Up to 16 outdoor header units are connectable per 1 TCC-LINK bus - Setting for (one of 1 to 64 zones)*2ch is available. - Setting for (one of 1 to 64 groups)*2ch is available. - Return back setting Common - Usable with other central control devices (Up to 10 central control devices in one control circuit) - Central control 4 mode 4 selectable settings to restrict individual operation of remote controller. - Two selectable mode Central controller mode/Remote controller mode - Master/Sub setting possible	- Central remote controller TCB-SC642TLE2 BMS-CM1280TLE - ON-OFF controller TCB-CC163TLE2 Indoor remote controller - Wired remote controller RBC-AMT32E - Wired remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES - Simple wired remote controller RBC-AS21E2 - Wireless remote controller kit

	Basic function	System diagram	Model
10-3-2	Central remote controller + Schedule timer Weekly operation schedule can be set by connecting a schedule timer to the central remote controller		- Central remote controller TCB-SC642TLE BMS-CM1280TLE - ON-OFF controller TCB-CC163TLE2 + - Schedule timer TBC-EXS21TLE Indoor remote controller - Wired remote controller RBC-AMT32E - Wired remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES - Simple wired remote controller RBC-AS21E2 - Wireless remote controller kit
10-3-3	Either one of the two controllers can be set as side control without indoor remote controller. Please prepare a wired remote controller for operation confirming of indoor unit in advance.	(Even when grouping operation is performed by connecting multiple indoor units to 1 line, the indoor remote controller is required.) Example of grouping operation Available Available	- Central remote controller TCB-SC642TLE2 BMS-CM1280TLE - ON-OFF controller TCB-CC163TLE2 Indoor remote controller - Wired remote controller RBC-AMT32E - Wired remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES - Wireless remote controller kit

	Basic function	System diagram	Model
10-3-4	Central management control with "1 : 1 model"	* TOSHIBA Digital Inverter System and Super Digital Inverter System	- Central remote controller TCB-SC642TLE2 BMS-CM1280TLE - ON-OFF controller TCB-CC163TLE2 "1 : 1 model" connection interface TCB-PCNT30TLE2 [High-wall type for SDI/DI is not necessary this. 4-way and compact 4-way cassette type for SDI/DI need the metal fitting kit (TCB-PX30MUE).] Indoor remote controller - Wired remote controller RBC-AMT32E - Wired remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES - Simple wired remote controller RBC-AS21E2 - Wireless remote controller kit

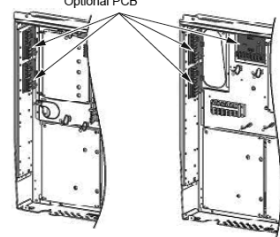
10-4. Application controls by optional P.C. board of outdoor unit

Model name	Appearance	Function
TCB-PCDM4E	 Size : 71 x 85 (mm)	[1] Power peak-cut Control • Purpose: Limiting air conditioning performance with external signals and decreasing the peak power consumption. • Feature The upper limit capacity of the outdoor unit is restricted based on the outdoor power peak selected setting. Standard Specifications (Wiring example)  Header outdoor unit Optional PCB Outdoor unit interface PCB Display relay Locally procured Power supply Shield wire Connection cable (attached in this optional PCB) For SW1 and SW2, be sure to provide no-voltage contacts for each terminal. The input signals of SW1 and SW2 may be pulse input (100 msec or more) or continuous make. Do not turn on [SW1] and [SW2] simultaneously.
	Application  MMY-MAP080 to 120 MMY-MAP140 to 160 Optional PCB (max. number installed: 1 pc) * Install the optional P.C. board in the outdoor header unit.	

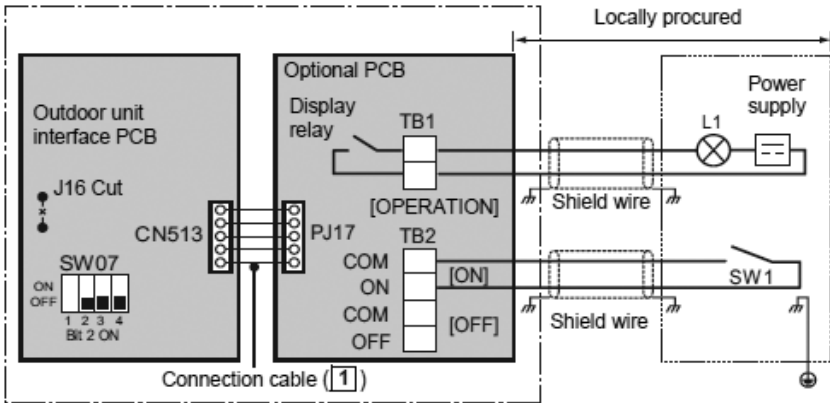
<SW07 (bit 2) OFF [2-stage switching]>

Input		SW07 (bit 1)		Display relay (L1)
SW1	SW2	Bit 1 OFF	Bit 1 ON	
OFF	ON	100% (normal operation)	100% (normal operation)	OFF
ON	OFF	0% (forced stop)	Approx. 60% (upper limit regulated)	ON

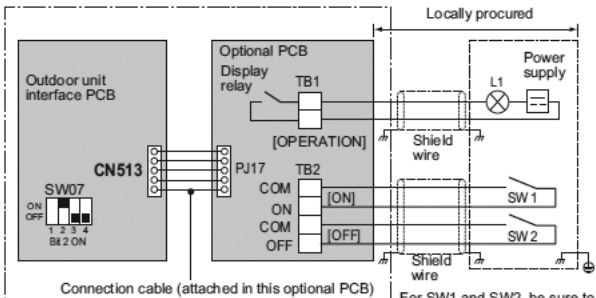
Model name	Appearance
	 Size : 55.5 x 60 (mm)

Application
 MMY-MAP080 to 120 MMY-MAP140 to 160 Optional PCB  (max. number installed: 1 pc) * Install the optional P.C. board in the outdoor header unit.

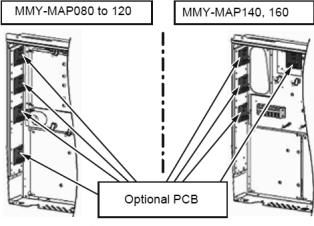
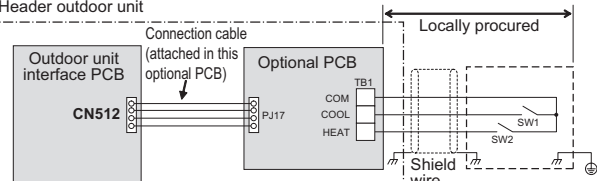
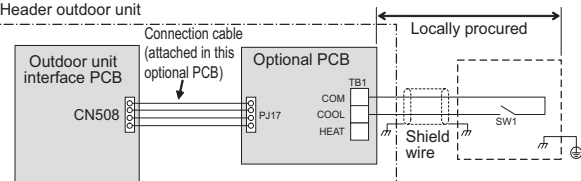
TCB-PCMO4E

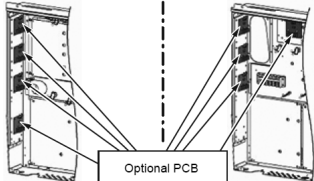
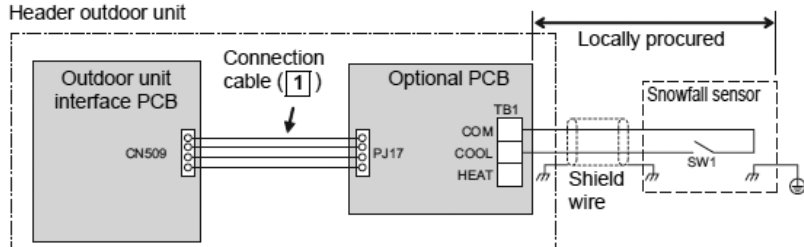
Function
For one input function (only SMMS- i) Power peak-cut ON-OFF control is made possible on the SMMS-i on only the [ON] terminal input (SW1) by cutting the jumper lead (J16) of the center outdoor unit interface PCB. (Wiring example) Header outdoor unit L1: Display lamp suring power peak cut control Locally procured 

<SW07 (bit 2) OFF [2-stage switching]>				
Power peak-cut control turns ON when SW1 in the wiring example is ON (continuous make).				
Jumper lead J16	Input SW1	SW07 (bit 1)		Display relay (L1)
		Bit 1 OFF	Bit 1 ON	
Cut	OFF	100% (normal operation)	100% (normal operation)	OFF
	ON	0% (forced stop)	Approx. 60% (upper limit regulated)	ON

Enhanced Specifications				
(Wiring example)				
Header outdoor unit		L1: Display lamp suring power peak cut control		
Locally procured				
 For SW1 and SW2, be sure to provide no-voltage contacts for each terminal.				

<SW07 (bit 2) ON [4-stage switching]>				
Input		SW07 (bit 1)		Display relay (L1)
SW1	SW2	Bit 1 OFF	Bit 1 ON	
OFF	OFF	100% (normal operation)	100% (normal operation)	OFF
ON	OFF	Approx. 80% (upper limit regulated)	Approx. 85% (upper limit regulated)	ON
OFF	ON	Approx. 60% (upper limit regulated)	Approx. 75% (upper limit regulated)	ON
ON	ON	0% (forced stop)	Approx. 60% (upper limit regulated)	ON

Model name	Appearance	Function																
TCB-PCMO4E	 Size : 55.5 x 60 (mm)	[2] External master ON/OFF control • Feature The outdoor unit starts or stop the system. • Function By connecting the cable (attached in this optional PCB) to the interface PC board on an outdoor unit, all indoor units connected to the outdoor unit enable to operate simultaneously. • Operation The outdoor unit connection is for the header unit (U1).																
	Application   (max. number installed: 4 pcs) * Install the optional P.C. board in the outdoor header unit.	Header outdoor unit  SW1: Operation input switch SW2: Stop input switch <table border="1"> <thead> <tr> <th>Terminal</th><th>Input signal</th><th>Operation</th></tr> </thead> <tbody> <tr> <td>COOL (SW1)</td><td>ON OFF</td><td>All indoor units operate together</td></tr> <tr> <td>HEAT (SW2)</td><td>ON OFF</td><td>All indoor units stop together</td></tr> </tbody> </table> Provide no-voltage pulse contacts for each terminal. Hold the ON state for at least 100 msec. Do not turn SW1 and SW2 ON simultaneously [3] Night time operation(sound reduction) control • Purpose : Reducing noise from an outdoor unit • Feature Sound level can be reduced by restricting the compressor and fan speed • Function As the cable (attached in this optional PCB) is connected to the "Interface PCB" on an outdoor unit, both compressor speed and fan speed are restricted while the signal of the night operation control is input. It makes the noise reduction during the night time operation. • Operation The outdoor unit connection is for the header unit (U1). Header outdoor unit  SW1: Night time signal switch <table border="1"> <thead> <tr> <th>Terminal</th><th>Input signal</th><th>Operation</th></tr> </thead> <tbody> <tr> <td rowspan="2">COOL (SW1)</td><td>ON OFF</td><td>All indoor units operate together</td></tr> <tr> <td>ON OFF</td><td>All indoor units stop together</td></tr> </tbody> </table> Each terminal should be connected to dry contact. The input signal is recognized during its rising/falling phase. (After reaching the top/bottom of the rising/falling edge, the signal must remain there for at least 100 ms.)	Terminal	Input signal	Operation	COOL (SW1)	ON OFF	All indoor units operate together	HEAT (SW2)	ON OFF	All indoor units stop together	Terminal	Input signal	Operation	COOL (SW1)	ON OFF	All indoor units operate together	ON OFF
Terminal	Input signal	Operation																
COOL (SW1)	ON OFF	All indoor units operate together																
HEAT (SW2)	ON OFF	All indoor units stop together																
Terminal	Input signal	Operation																
COOL (SW1)	ON OFF	All indoor units operate together																
	ON OFF	All indoor units stop together																

Model name	Appearance	Function																																		
TCB-PCMO4E	 Size : 55.5 x 60 (mm)	Sound reduction and approximation capacity(reference) <table><tr><th rowspan="2"></th><th rowspan="2">Night operation sound reduction dB(A)</th><th colspan="2">Capacity</th></tr><tr><th>COOL</th><th>HEAT</th></tr><tr><td>1604 type</td><td>53</td><td>Approx. 70%</td><td>Approx. 70%</td></tr><tr><td>1404 type</td><td>53</td><td>Approx. 80%</td><td>Approx. 80%</td></tr><tr><td>1204 type</td><td>50</td><td>Approx. 60%</td><td>Approx. 55%</td></tr><tr><td>1004 type</td><td>50</td><td>Approx. 70%</td><td>Approx. 65%</td></tr><tr><td>0804 type</td><td>50</td><td>Approx. 85%</td><td>Approx. 80%</td></tr><tr><td>0601 type</td><td>50</td><td>Approx. 75%</td><td>Approx. 70%</td></tr><tr><td>0501 type</td><td>50</td><td>Approx. 85%</td><td>Approx. 80%</td></tr></table>		Night operation sound reduction dB(A)	Capacity		COOL	HEAT	1604 type	53	Approx. 70%	Approx. 70%	1404 type	53	Approx. 80%	Approx. 80%	1204 type	50	Approx. 60%	Approx. 55%	1004 type	50	Approx. 70%	Approx. 65%	0804 type	50	Approx. 85%	Approx. 80%	0601 type	50	Approx. 75%	Approx. 70%	0501 type	50	Approx. 85%	Approx. 80%
		Night operation sound reduction dB(A)			Capacity																															
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0601 type	50	Approx. 75%	Approx. 70%																																	
0501 type	50	Approx. 85%	Approx. 80%																																	
	Application																																			
	 MMY-MAP080 to 120 MMY-MAP140, 160  Optional PCB (max. number installed: 4 pcs) * Install the optional P.C. board in the outdoor header unit.	Condition Cooling : (Indoor 27deg DB, 19deg WB) (Outdoor temperature 25deg DB) Heating : (Indoor 20 deg DB) (Outdoor temperature 7deg DB, 6 deg WB) [4] Snowfall fan control • Purpose : Rotating the fan to prevent snow accumulation • Feature Outdoor fan is operated from the snowfall signal received from the outside. ▼ Functions The outdoor unit fan operates at snowfall by connecting to the outdoor unit interface PCB. ▼ Operation Header outdoor unit  SW1: Snowfall detection switch (snowfall sensor) <table><tr><th>Terminal</th><th>Input Signal</th><th>Operation</th></tr><tr><td rowspan="2">Cooling (SW1)</td><td>ON OFF </td><td>Snowfall fan control (Fan in outdoor unit operates.)</td></tr><tr><td>ON OFF </td><td>Normal operation</td></tr></table> Be sure to provide no-voltage continous contacts for each terminal.	Terminal	Input Signal	Operation	Cooling (SW1)	ON OFF 	Snowfall fan control (Fan in outdoor unit operates.)	ON OFF 	Normal operation																										
Terminal	Input Signal	Operation																																		
Cooling (SW1)	ON OFF 	Snowfall fan control (Fan in outdoor unit operates.)																																		
	ON OFF 	Normal operation																																		

Model name

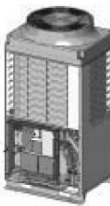
TCB-PCIN4E

Appearance



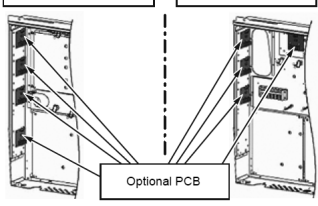
Size : 55.5 x 60 (mm)

Application



MMY-MAP080 to 120

MMY-MAP140, 160



(max. number installed: 4 pcs)

* Install the optional P.C. board in the outdoor header unit.

Function

[5] Operation mode selection control

Purpose: Limiting operation modes to cooling and heating only

Feature

This control can restrict the selectable operation mode.

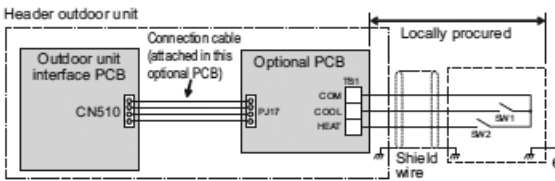
▼ Function

The heating/cooling mode of the system can be selected by connecting to the interface PCB of outdoor units.

▼ Operation

The outdoor unit connection is for the header unit (U1).

Header outdoor unit



SW1: Cooling mode specified input switch
SW2: Heating mode specified input switch

Input Signal		Operation: Selected operation mode
Cooling (SW1)	Heating (SW2)	
ON	OFF	Cooling operation only
OFF	ON	Heating operation only
OFF	OFF	Normal operation

Each terminal should be connected to dry contact.

About Switching of Processing of Indoor Unit Operation State [Setting can be changed only on the SMMS-i.]

Processing of the operation state can be switched for indoor units in a mode other than the selected operation mode by setting the jumper lead (J01) of the header outdoor unit interface PCB.

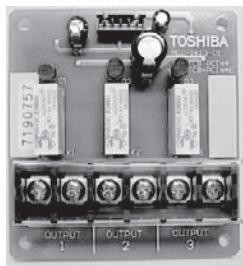
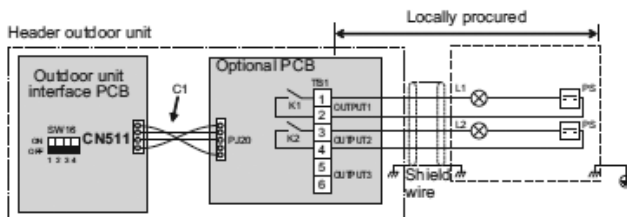
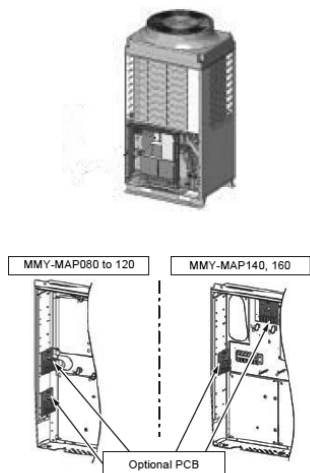
Jumper lead	Details of Processing		
J01 connected (factory default)	Unallowed indoor units in a mode other than the selected operation mode are not treated as priority (thermo OFF state). (Unallowed indoor units)		
	Operation Mode	Operation State	Remote control
	Cooling unit	Air blow operation at blow rate set on remote control	indicator is displayed.
	Heating unit	Air blow operation at super-slow blow rate	
	Air blow unit	Regular air blow operation at blow rate set on remote control	
J01 cut	Indoor units in a mode other than the selected operation mode are forcibly switched to the selected operation mode.		
	PC board selection mode	Remote control operation/display	
	Normal	* , ◊ , ☀ , or ❄ can be selected	When using the remote control, (mode select control) indicator is displayed.
	Cool	Only * , ◊ , or ❄ can be selected	
	Heat	Only ☀ or ❄ can be selected	

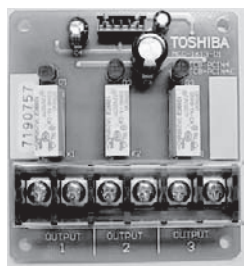
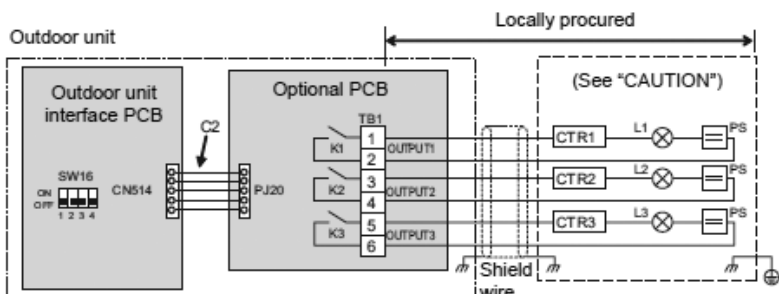
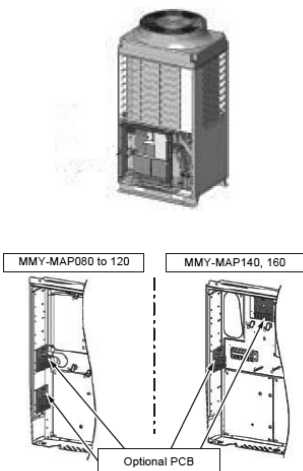
▼ Model : SMMS, SHRM

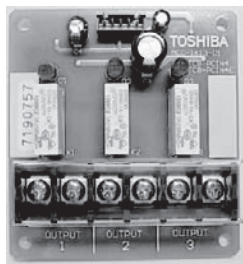
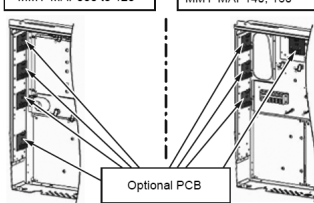
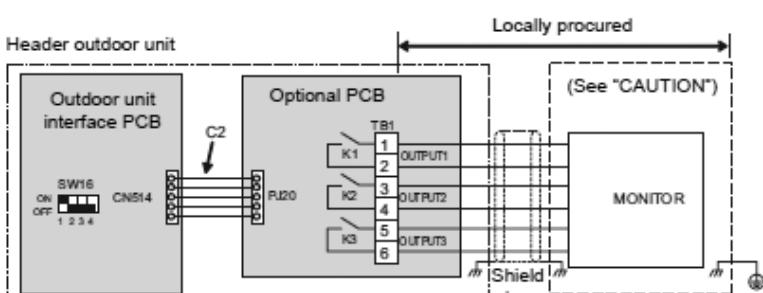
The jumper lead is not switched.

Indoor units in a mode other than the selected operation mode are forcibly switched to the selected operation mode.

PC board selection mode	Remote control operation/display	
Normal	* , ◊ , ☀ , or ❄ can be selected	When using the remote control, (mode select control) indicator is displayed.
Cool	Only * , ◊ , or ❄ can be selected	
Heat	Only ☀ or ❄ can be selected	

Model name	Appearance	Function																			
TCB-PCIN4E	 Size: 73 x 79 (mm)	[6] Error / Operation Output • Feature Operation and error monitoring is possible. ▼ Function The operation error output PCB can indicate operation and error states by connecting to the interface PCB of outdoor units. ▼ Operation Operation output: The operation indicator is on while any indoor unit in the system is operating. Error output: The error indicator is on when an error is occurred on even one of the indoor or outdoor units in the system. Wiring example 																			
	Application  (max. number installed: 2 pcs) * Install the optional P.C. board in the outdoor header unit.	<table><tr><td>C1</td><td>Attached connection cable 1 (4wires)</td></tr><tr><td>CN511</td><td>Connector on interface side (green)</td></tr><tr><td>K1, K2</td><td>Relays</td></tr><tr><td>L1</td><td>Error indication Lamp</td></tr><tr><td>L2</td><td>Operation indication Lamp</td></tr><tr><td>OUTPUT1</td><td>Error output</td></tr><tr><td>OUTPUT2</td><td>Operation output</td></tr><tr><td>PJ20</td><td>Connector on optional PCB side</td></tr><tr><td>PS</td><td>Power supply unit</td></tr><tr><td>TB1</td><td>Terminal block</td></tr></table> * [OUTPUT3] is normally output when power is turned out.	C1	Attached connection cable 1 (4wires)	CN511	Connector on interface side (green)	K1, K2	Relays	L1	Error indication Lamp	L2	Operation indication Lamp	OUTPUT1	Error output	OUTPUT2	Operation output	PJ20	Connector on optional PCB side	PS	Power supply unit	TB1
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K1, K2	Relays																				
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L2	Operation indication Lamp																				
OUTPUT1	Error output																				
OUTPUT2	Operation output																				
PJ20	Connector on optional PCB side																				
PS	Power supply unit																				
TB1	Terminal block																				

Model name	Appearance	Function																									
TCB-PCIN4E	 Size: 73 x 79 (mm)	[7] Compressor Operation Output (only SMMS-i) • Feature Outputs the operation status of the compressors in each outdoor unit. ▼ Functions This function can be applied, for example, to the elapsed operation time count of each compressor mounted on an outdoor unit since the compressor in operation signal can be output externally. ▼ Operation During compressor operation, the relay of the output terminal corresponding to that compressor turns ON (closes) and turns OFF (opens) when compressor operation stops. As shown in the figure, the output terminals are "OUTPUT1", "OUTPUT2" and "OUTPUT3" from the left compressor facing the front of the outdoor unit. Wiring example 																									
	Application  (max. number installed: 2 pcs) * Install the optional P.C. board in individual outdoor unit	<table> <tr> <td>C2</td><td>Connector cable 2 (2)</td></tr> <tr> <td>CN514</td><td>Connector on interface side (green)</td></tr> <tr> <td>CTR1</td><td>Elapsed operation counter 1</td></tr> <tr> <td>CTR2</td><td>Elapsed operation counter 2</td></tr> <tr> <td>CTR3</td><td>Elapsed operation counter 3</td></tr> <tr> <td>K1, K2, K3</td><td>Relays</td></tr> <tr> <td>L1, L2, L3</td><td>Operation indication LEDs</td></tr> <tr> <td>OUTPUT1</td><td>Compressor 1 operation output terminal</td></tr> <tr> <td>OUTPUT2</td><td>Compressor 2 operation output terminal</td></tr> <tr> <td>OUTPUT3</td><td>Compressor 3 operation output terminal</td></tr> <tr> <td>PJ20</td><td>Connector on optional PCB side</td></tr> <tr> <td>PS</td><td>Power supply unit</td></tr> <tr> <td>TB1</td><td>Terminal block</td></tr> </table>	C2	Connector cable 2 (2)	CN514	Connector on interface side (green)	CTR1	Elapsed operation counter 1	CTR2	Elapsed operation counter 2	CTR3	Elapsed operation counter 3	K1, K2, K3	Relays	L1, L2, L3	Operation indication LEDs	OUTPUT1	Compressor 1 operation output terminal	OUTPUT2	Compressor 2 operation output terminal	OUTPUT3	Compressor 3 operation output terminal	PJ20	Connector on optional PCB side	PS	Power supply unit	TB1
C2	Connector cable 2 (2)																										
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CTR2	Elapsed operation counter 2																										
CTR3	Elapsed operation counter 3																										
K1, K2, K3	Relays																										
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PJ20	Connector on optional PCB side																										
PS	Power supply unit																										
TB1	Terminal block																										

Model name	Appearance	Function																																									
TCB-PCIN4E	 Size: 73 x 79 (mm)	[8] Operating Rate Output (only SMMS-i) • Feature Relay turn ON/OFF depending on the running rate of the system. ▼ Functions The operation state can be remotely checked since the system operating rate signal can be output externally. ▼ Operation As shown in the table, each of the output terminals turns ON (relay closes) and OFF (relay opens) according to the system operating rate. <table><thead><tr><th>Functions</th><th>SW16</th><th>OUTPUT1</th><th>OUTPUT2</th><th>OUTPUT3</th><th>Operating rate FA</th></tr></thead><tbody><tr><td rowspan="9">System operating rate output</td><td>ON OFF </td><td>OFF</td><td>OFF</td><td>OFF</td><td>FA=0%</td></tr><tr><td rowspan="8">bit 1 : ON bit 2 : OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>0%<FA<20%</td></tr><tr><td>OFF</td><td>ON</td><td>OFF</td><td>20%≤FA<35%</td></tr><tr><td>ON</td><td>ON</td><td>OFF</td><td>35%≤FA<50%</td></tr><tr><td>OFF</td><td>OFF</td><td>ON</td><td>50%≤FA<65%</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>65%≤FA<80%</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>80%≤FA<95%</td></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>95%≤FA</td></tr></tbody></table> OFF=relay open ON=relay closed	Functions	SW16	OUTPUT1	OUTPUT2	OUTPUT3	Operating rate FA	System operating rate output	ON OFF 	OFF	OFF	OFF	FA=0%	bit 1 : ON bit 2 : OFF	ON	OFF	OFF	0%<FA<20%	OFF	ON	OFF	20%≤FA<35%	ON	ON	OFF	35%≤FA<50%	OFF	OFF	ON	50%≤FA<65%	ON	OFF	ON	65%≤FA<80%	OFF	ON	ON	80%≤FA<95%	ON	ON	ON	95%≤FA
	Functions	SW16	OUTPUT1	OUTPUT2	OUTPUT3	Operating rate FA																																					
System operating rate output	ON OFF 	OFF	OFF	OFF	FA=0%																																						
	bit 1 : ON bit 2 : OFF	ON	OFF	OFF	0%<FA<20%																																						
		OFF	ON	OFF	20%≤FA<35%																																						
		ON	ON	OFF	35%≤FA<50%																																						
		OFF	OFF	ON	50%≤FA<65%																																						
		ON	OFF	ON	65%≤FA<80%																																						
		OFF	ON	ON	80%≤FA<95%																																						
		ON	ON	ON	95%≤FA																																						
		Application  MMY-MAP080 to 120 MMY-MAP140, 160  (max. number installed: 4 pcs) * Install the optional P.C. board in the outdoor header unit.	Wiring example  <table><tbody><tr><td>C2</td><td>Connector cable 2 (2)</td></tr><tr><td>CN514</td><td>Connector on interface side (green)</td></tr><tr><td>K1, K2, K3</td><td>Relays</td></tr><tr><td>MONITOR</td><td>Monitoring device</td></tr><tr><td>OUTPUT1</td><td>Output terminal for each function</td></tr><tr><td>OUTPUT2</td><td>Output terminal for each function</td></tr><tr><td>OUTPUT3</td><td>Output terminal for each function</td></tr><tr><td>PJ20</td><td>Connector on optional PCB side</td></tr><tr><td>TB1</td><td>Terminal block</td></tr></tbody></table>	C2	Connector cable 2 (2)	CN514	Connector on interface side (green)	K1, K2, K3	Relays	MONITOR	Monitoring device	OUTPUT1	Output terminal for each function	OUTPUT2	Output terminal for each function	OUTPUT3	Output terminal for each function	PJ20	Connector on optional PCB side	TB1	Terminal block																						
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OUTPUT3	Output terminal for each function																																										
PJ20	Connector on optional PCB side																																										
TB1	Terminal block																																										

10-5. Application control of optional devices connectable to indoor units

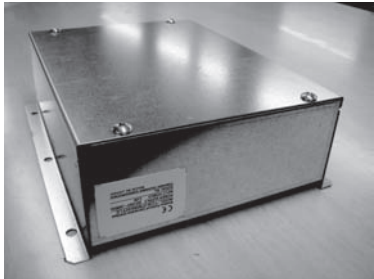
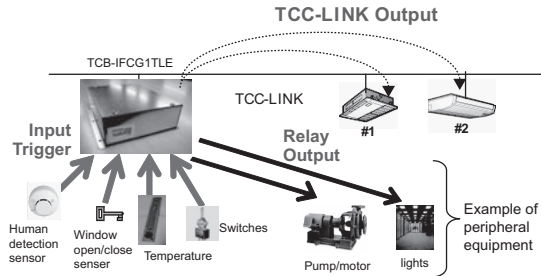
10-5-1. Remote location ON/OFF control box

Model name	Appearance	Function
TCB-IFCB-4E2		Start and stop of the air conditioner is possible by a external signal and indication of operation/alarm externally.
	Appearance Function - Monitoring ON/OFF status (for indoor unit) Alarm status (system & indoor unit stop) - ON/OFF command Air conditioner can be turned ON/OFF by the external signals. The external ON/OFF signals will initiate the signals shown below.	

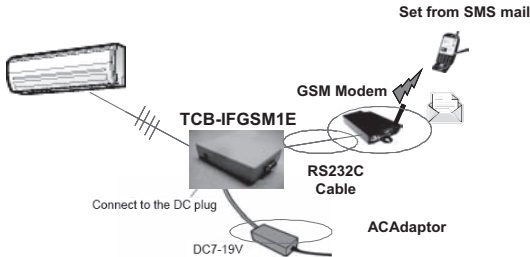
10-5-2. “1:1 model” connection interface

Model name	Appearance	Function
TCB-PCNT30TLE2	(85 x 52 mm) Install optional P.C. board in E-parts of the indoor unit.	- Link adapter for “1:1 model” to enable connection to VRF system network 1:1 model : Super digital inverter Digital inverter - High-wall type does not need this interface. - Some types of indoor units (2 series compact, 4-way discharge cassette, etc.) need the metal case TCB-PX30MUE to use this interface. Refer to the Installation manual of each unit for details.
	Appearance Central Remote Controller TCB-SC642TLE2 or BMS-CM1280TLE or other BMS ON-OFF Controller TCB-CC163TLE2 Control wiring 1:1 model connection interface Indoor units Digital Inverter Super Digital Inverter Outdoor unit	Connection of cables
		Wiring diagram of indoor P.C. board

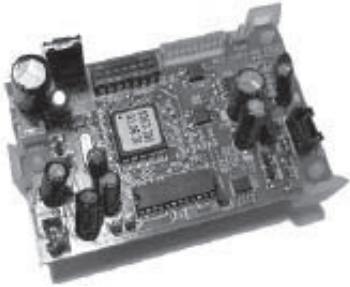
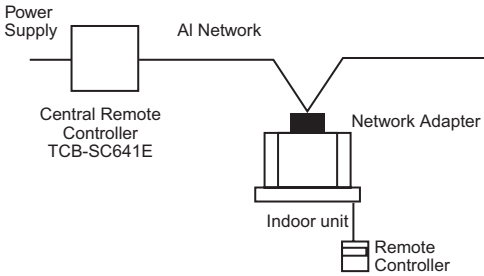
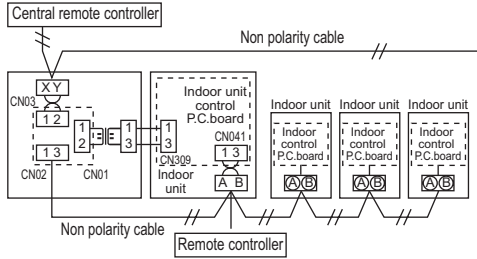
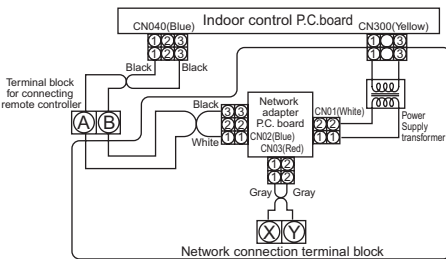
10-5-3. General purpose Interface

Model name	Appearance	Function																						
TCB-IFCG1TLE		Provide various applied controls that enable connection between the indoor unit and external equipments. • Equipped with 4 Relay contact outputs, 2 Analogue Outputs through which a central controller can send commands, and 4 Analogue Inputs/6 Digital Inputs through which the Central controller can read data. • Equipment with the HA terminal (DAISEIKAI, IMS, etc.) can be connected to the TCC-LINK central control network (DI/SDI,S-MMS,Mini-SMMS,S-HRM) for ON/OFF Control & Monitoring via this device. • Full Central Control by Modbus System TCB-IFMB640TLE and ON/OFF Control by Central Control by TCB-SC642TLE2 and Compliant Manager (Multi language). Programmable Control by Special Tool • Operation of specified indoor units can be programmed on site with input ports level change.																						
	Appearance	Function																						
	Central control via tcc-link Connectable with HA terminal (4pin input/output), alarm input Interlocking Operation (below) 	Connection to Tcc-link Interlocking operation with indoors and input ports. • 2 Analog/5 Digital inputs can interlock with 64 indoors and 4 Relays. • 12 programs possible. Port specification <table><tr><th>Input/output ports</th><th>Channel number</th><th>Main spec</th><th>Connected Device/Apparatus example</th></tr><tr><td rowspan="2">Analog Input</td><td>2</td><td>Temperature measurement: -10~90°C±0.4°C</td><td>Thermistor</td></tr><tr><td>2</td><td>Analog Input: 0~10V 10bits resolution</td><td>Sensor, etc</td></tr><tr><td>Analog Output</td><td>2</td><td>Output: 0-10V 8bits resolution</td><td>Actuator, Motors, Pumps, etc</td></tr><tr><td>Digital Input</td><td>6</td><td>Photo coupler type: ON level 2mA, max 30mA</td><td>HA in (Daiseikai, IMS), Fan Sensor, etc</td></tr><tr><td>Digital Output</td><td>4</td><td>Relay contacts: Max 1A 42VAC/ 30VDC</td><td>Actuator, Motors, Pumps HA out (Daiseikai, IMS), Fan, light, etc</td></tr></table>	Input/output ports	Channel number	Main spec	Connected Device/Apparatus example	Analog Input	2	Temperature measurement: -10~90°C±0.4°C	Thermistor	2	Analog Input: 0~10V 10bits resolution	Sensor, etc	Analog Output	2	Output: 0-10V 8bits resolution	Actuator, Motors, Pumps, etc	Digital Input	6	Photo coupler type: ON level 2mA, max 30mA	HA in (Daiseikai, IMS), Fan Sensor, etc	Digital Output	4	Relay contacts: Max 1A 42VAC/ 30VDC
Input/output ports	Channel number	Main spec	Connected Device/Apparatus example																					
Analog Input	2	Temperature measurement: -10~90°C±0.4°C	Thermistor																					
	2	Analog Input: 0~10V 10bits resolution	Sensor, etc																					
Analog Output	2	Output: 0-10V 8bits resolution	Actuator, Motors, Pumps, etc																					
Digital Input	6	Photo coupler type: ON level 2mA, max 30mA	HA in (Daiseikai, IMS), Fan Sensor, etc																					
Digital Output	4	Relay contacts: Max 1A 42VAC/ 30VDC	Actuator, Motors, Pumps HA out (Daiseikai, IMS), Fan, light, etc																					

10-5-4. GSM Phone control Interface

Model name	Appearance	Function
TCB-IFGSM1E		Controlling and Monitoring Toshiba air conditioning from registered mobile phone. • Stand alone, simple, cheap system without LAN • Possible on/off control and status monitoring of the air conditioner by the SMS mail system of GSM mobile phone • Auto alarm transfer function for S-MMS,SDI,DI • Triple "Security" is assured by SMS system, secret telephone numbers and PIN on TCB-IFGSM1E • Can register 5 Phone numbers which can control an air conditioner and 5 Phone numbers which can receive response from an air conditioner • Can register the name of air conditioner (max 19 characters) • Not necessary for Power Supply in case of CN61
	Appearance 	Function Non LAN / Internet area Secured Remote control or monitoring of air-conditioner ON/OFF control/monitoring • Control : write ON or OFF, then send mail • Status : write STATUS, then send mail • "Alarm" is automatically sent from the site (CN61)

10-5-5. Network adapter

Model name	Appearance	Function
TCB-PCNT20E		• Indoor units of VRF system are controlled by AI-NETWORK central remote controller. Connectable indoor units per group.
	Install optional P.C. board in E-parts of indoor unit. Appearance 	Connection of cables 
		Wiring diagram of indoor P.C. board 

10-6. Application control for network

10-6-1. LONWORKS

System diagram	Model
Max 64 Indoors/groups/I/F Twisted pair line Free/Bus topology LONWORKS Controller LON I/F TCC-link bus 1:1model Connection I/F Max number of LON I/F is decided by network traffic or points numbers. Absolute max number is 127. Other system (security, etc)	• LON Interface TCB-IFLN642TLE • “1:1model” connection TCC-Link Interface TCB-PCNT30TLE2 • Wired Remote controller RBC-AMT32E • Wireless Remote controller RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES [Note] Xif file: • controller commissioning without LON Interface

10-6-2. BACnet

System diagram	Model
Max 128 Indoors BACnet server RS-485 Ethernet BACnet Server Software Max number of BACnet server depends on IP network and upper system. In case of 10BASE-T: Category 3 or Category 5 In case of 100BASE-TX: Category 5 (*) BACnet IP, (Annex J) Relay I/F TCC-link bus 1:1model Connection I/F Max8 Relay I/F Other system Ethernet Central management controller	• BACnet server BMS-LSV6E • BACnet Server Software BMS-STBN08E • Setting file creation software • “1:1model” connection TCC-Link Interface TCB-PCNT30TLE2 • Relay Interface BMS-LSV4E BMS-LSV3E • Wired Remote controller RBC-AMT32E • Wireless Remote controller RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES [Note] Pc BACnet explorer: • Commissioning for BACnet server (local supply)

10-6-3. Modbus

System diagram	Model
Modbus Master RS-485 Modbus I/F Max 64 Indoors/groups/IF TCC-link bus 1:1model Connection I/F Modbus I/F TCC link bus Max number of Modbus I/F is decided by network traffic. Absolute max number is 15. Other system (security, etc)	• Modbus I/F TCB-IFMB640TLE • “1:1model” connection • TCC-Link Interface TCB-PCNT30TLE2 • Wired Remote controller RBC-AMT32E • Wireless Remote controller RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES [Note] • Pc master dummy program: Commissioning for Modbus I/F

10-6-4. Smart Manager

System diagram	Model
Smart Manager Power unit AC Power supply Max 128 indoors RS-485 Digital I/O signal Max In3 / Out2 Fire alarm Key lock Ethernet Monitor/Control /Setting Monthly report creation software Max4 PC simultaneous access Energy monitoring Relay I/F Max4 Pulse signal Power Meter Max8 Digital I/O Relay I/F Max4 Digital I/O signal Max In 8 / Out 4 Fire alarm Door key Error Power meter: Pulse width:50-1000ms Pulse generator constants (kWh/pulse) 0.1-99.9	• Smart Manager BMS-SM1280HTLE • Setting file creation software • Monthly report creation software • “1:1model” connection • TCC-Link Interface TCB-PCNT30TLE2 • Energy monitoring Relay I/F BMS-IFWH5E • Digital I/O Relay I/F BMS-IFDD03E • Wired Remote controller RBC-AMT32E • Wireless Remote controller RBC-AX31U(W)-E, RBC-AX31U(WS)-E, RBC-AX22CE2 TCB-AX21E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES

10-6-5. Touch Screen Controller

System diagram	Model
Max 64/512 Indoors Touch Screen Controller RS-485 Digital Input 3ch Digital output 3ch Fire alarm Key lock Ethernet Monthly report creation software Relay I/F Max12 TCC-link bus 1:1model Connection I/F Energy monitoring Relay I/F Max8 Pulse signal Power Meter Max8 Digital I/O Relay I/F Max8 Digital I/O signal Fire alarm Door key Error Max In 8/Out 4 Power meter: Pulse width:50-1000ms Pulse generator constants (kWh/pulse) 0.1-99.9	• Touch Screen Controller BMS-TP0641ACE BMS-TP5121ACE BMS-TP0641PWE BMS-TP5121PWE • Setting file creation software • Monthly report creation software • "1:1model" connection TCC-Link Interface TCB-PCNT30TLE2 • Relay Interface BMS-LSV4E • Energy monitoring Relay I/F BMS-IFWH5E • Digital I/O Relay I/F BMS-IFDD03E • Wired Remote controller RBC-AMT32E • Wireless Remote controller RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES

10-6-6. WEB Based Controller

System diagram	Model
	BMS-WB2561PWE BMS-WB2561PWE BMS-WB01GTE - Setting file creation software - Monthly report creation software “1:1mode” connection TCC-Link Interface TCB-PCNT30TLE2 - Relay Interface BMS-IFLSV4E
System product configuration table	- Energy monitoring Relay I/F BMS-IFWH5E - Digital I/O Relay I/F BMS-IFDD03E - Wired Remote controller RBC-AMT32E - Wireless Remote controller RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2 - Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES
System product configuration table	

Product name	Web Server System		
	Model name	Max. connectable units	
Web Server	BMS-WB2561PWE	1	
Indoor Unit	(TCC-LINK integrated model)	Max. 256	
TCS-NET Relay Interface	BMS-IFLSV4E	Max. 8	
Energy Monitoring Relay Interface	BMS-IFWH5E	Max. 4	
Digital Input/Output Relay Interface	BMS-IFDD03E	Max. 4	
Central Remote Controller	TCB-SC642TLE BMS-CM1280TLE	Max. 10	

Client PC specification	OS	Windows XP,Vista
	Browser	Internet Explorer 6.0 or 7.0
	Display	1,024 X 768 more

Product name	Master Server System			
	Model name	Max. connectable units	Notes	
Master Server	BMS- WB01GTE	1		
Gateway	BMS- WB2561PWE	Max. 8		
Indoor Unit	(TCC-LINK integrated model)	Max. 2048	Max. 256 units per Gateway	
TCS-NET Relay Interface	BMS-IFLSV4E	Max. 64	Max. 8 units per Gateway	
Energy Monitoring Relay Interface	BMS-IFWH5E	Max. 32	Max. 4 units per Gateway	
Digital Input/Output Relay Interface	BMS-IFDD03E	Max. 32	Max. 4 units per Gateway	
Central Remote Controller	TCB-SC642TLE BMS-CM1280TLE	Max. 80	Max. 10 units per Gateway	

Client PC specification	OS	Windows XP,Vista
	Browser	Internet Explorer 6.0 or 7.0
	Display	1,024 X 768 more

Power meter:
Pulse width:50-1000ms
Pulse generator constants (kWh/pulse)0.1-99.9

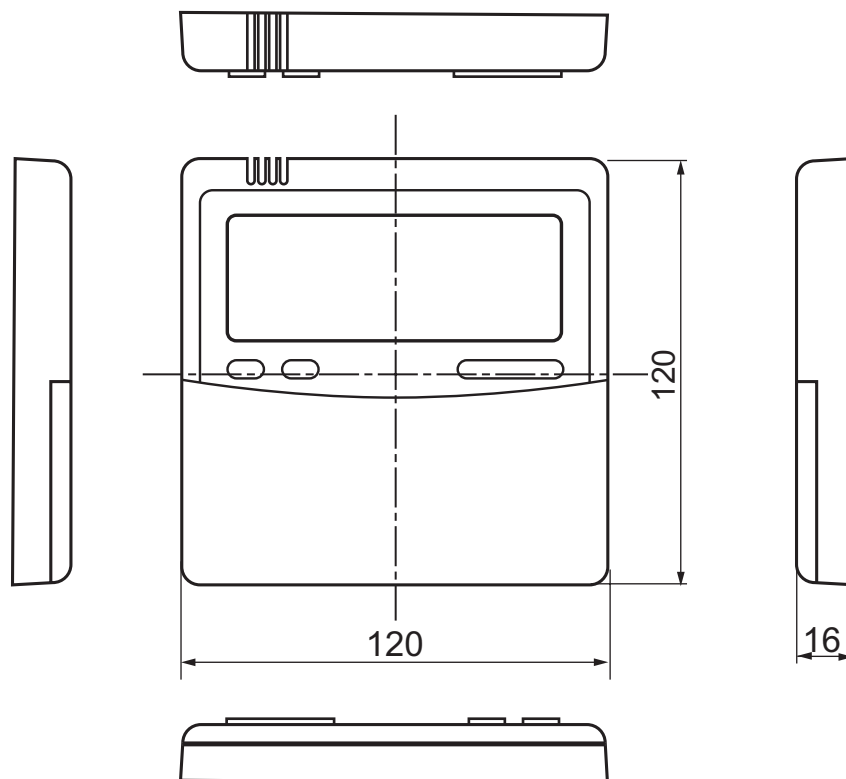
10-6-7. Analog Interface

System diagram	Model
	• Analog Interface TCB-IFCB640TLE • 1:1model connection TCC-Link Interface TCB-PCNT30TLE2 • General purpose I/F TCB-IFCG1TLE • Wired Remote controller RBC-AMT32E • Wireless Remote controller RBC-AX31U(W)-E RBC-AX31U(WS)-E RBC-AX22CE2 TCB-AX21E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES

10-7. Dimensionel drawing

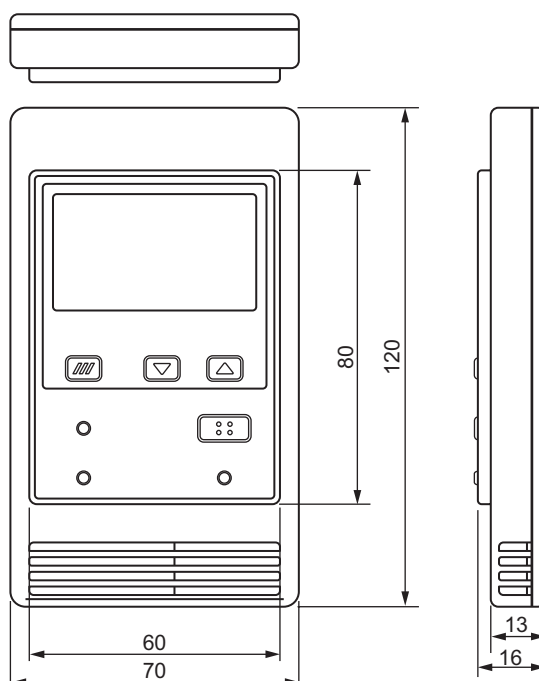
Wired remote controller

RBC-AMT32E / NRC-01HE



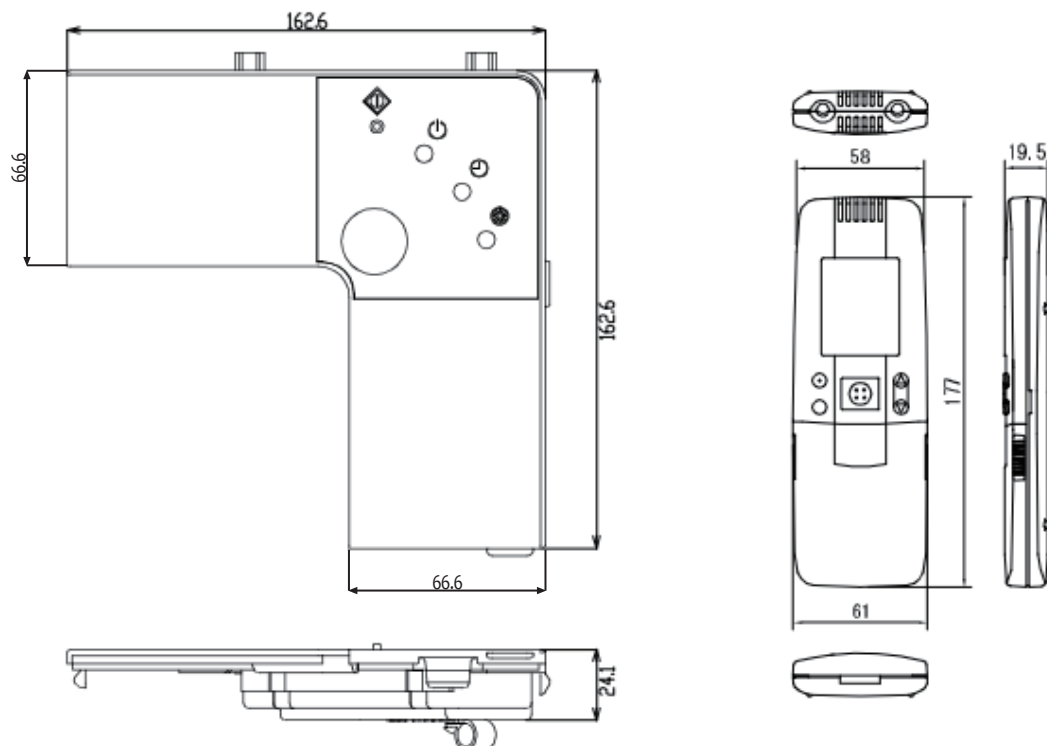
Simple wired remote controller

RBC-AS21E2



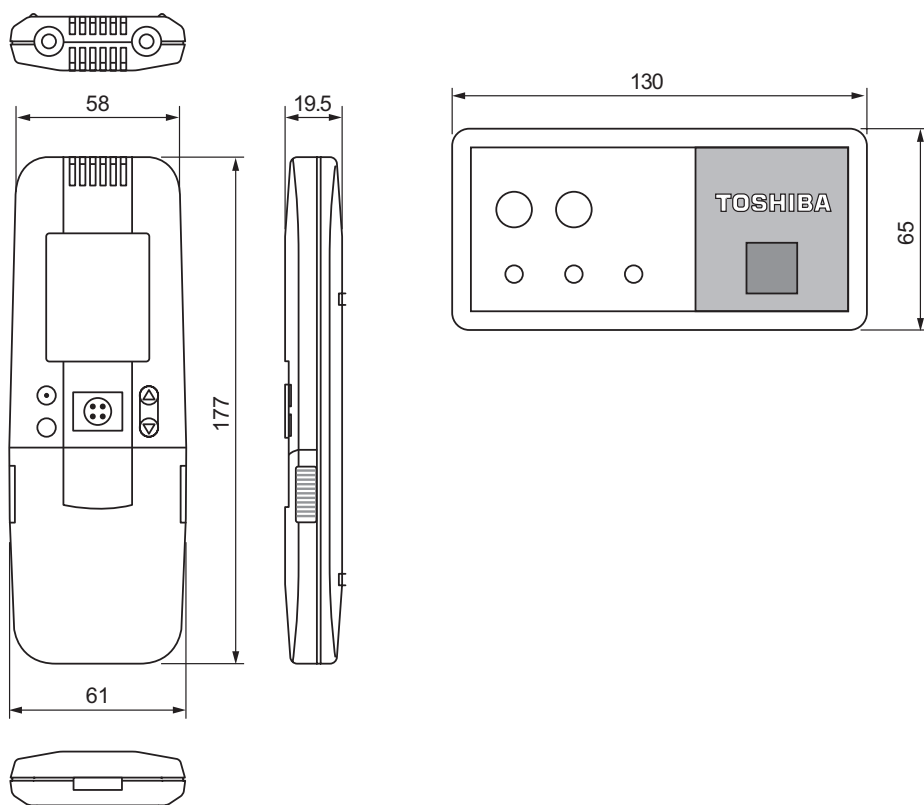
Wireless remote controller kit

RBC-AX31U(W)-E/RBC-AX31U(WS)-E



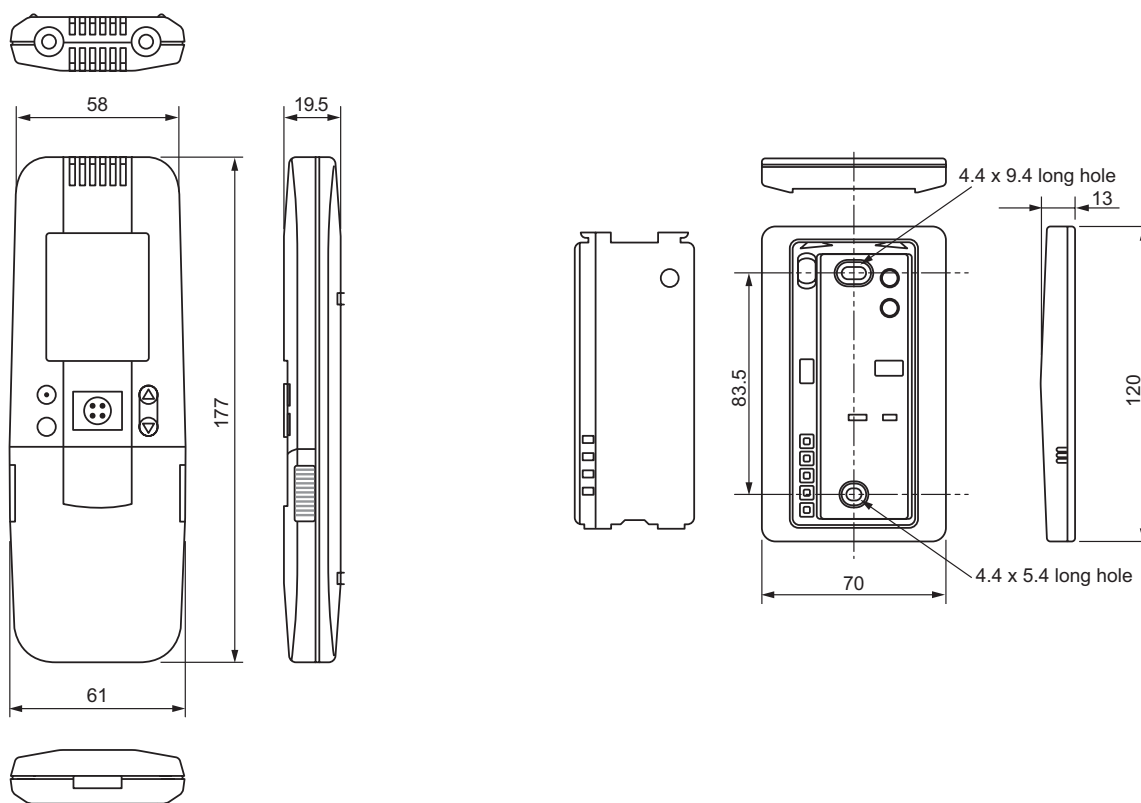
Wireless remote controller kit

RBC-AX22CE2



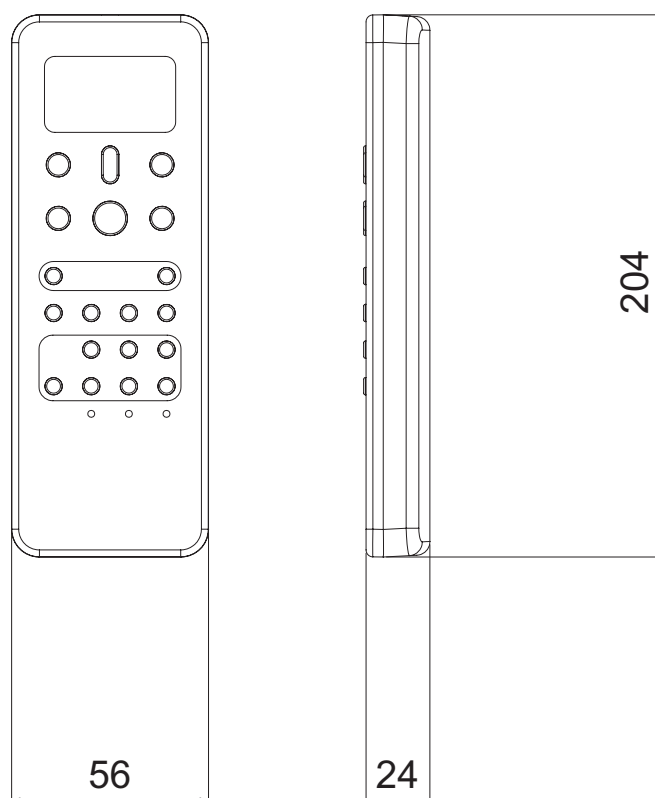
Wireless remote controller kit

TCB-AX21E2



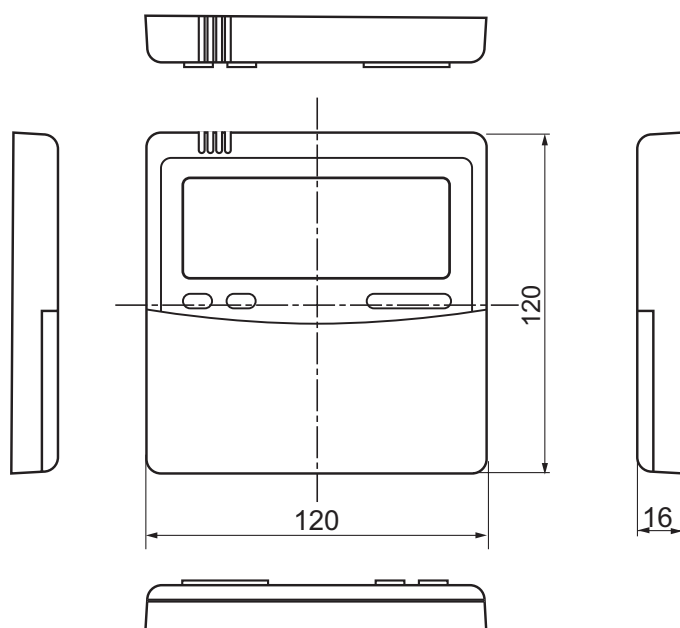
Wireless remote controller (High-wall 3 series)

WH-L11SE



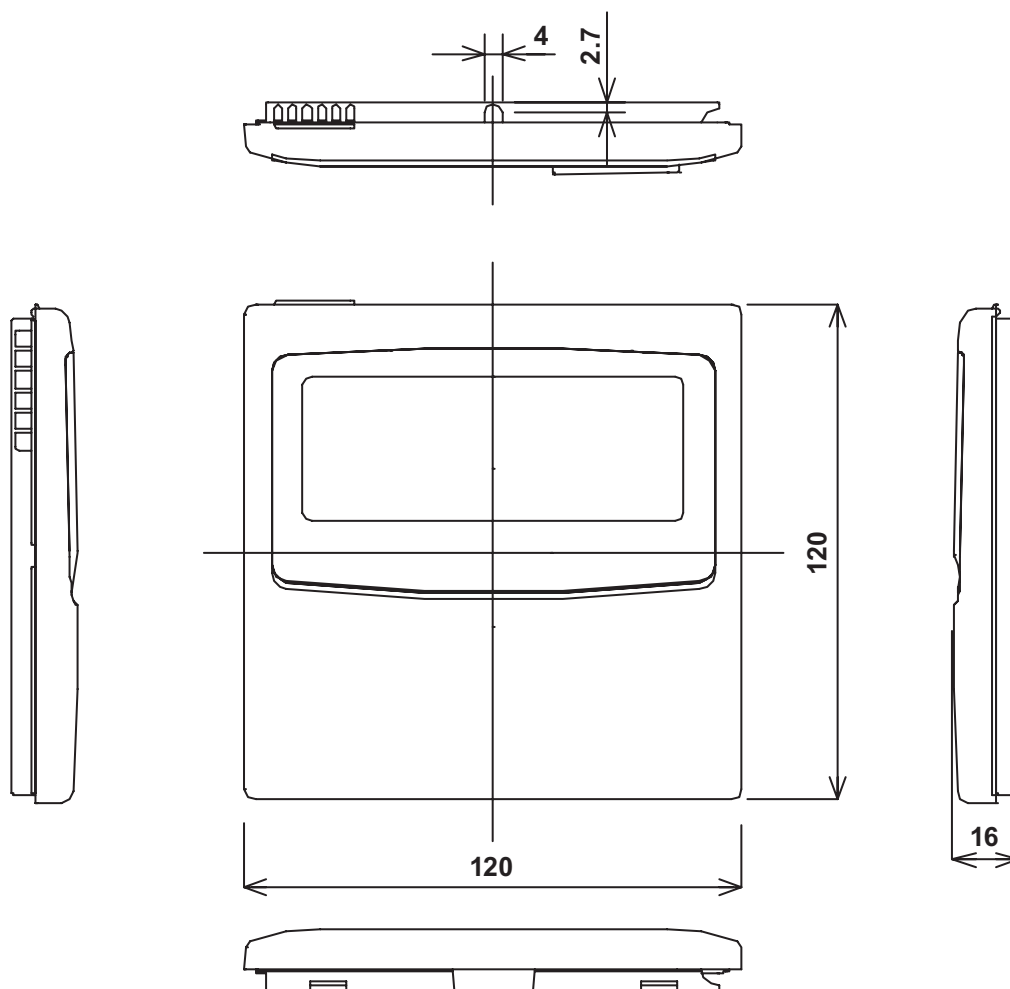
Wired remote controller with schedule timer

RBC-AMS41E



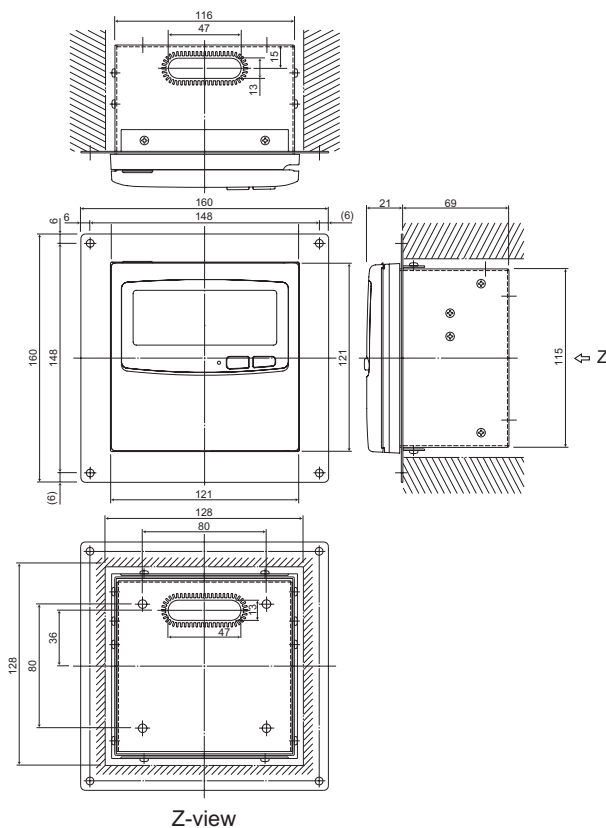
Schedule timer

TCB-EXS21TLE



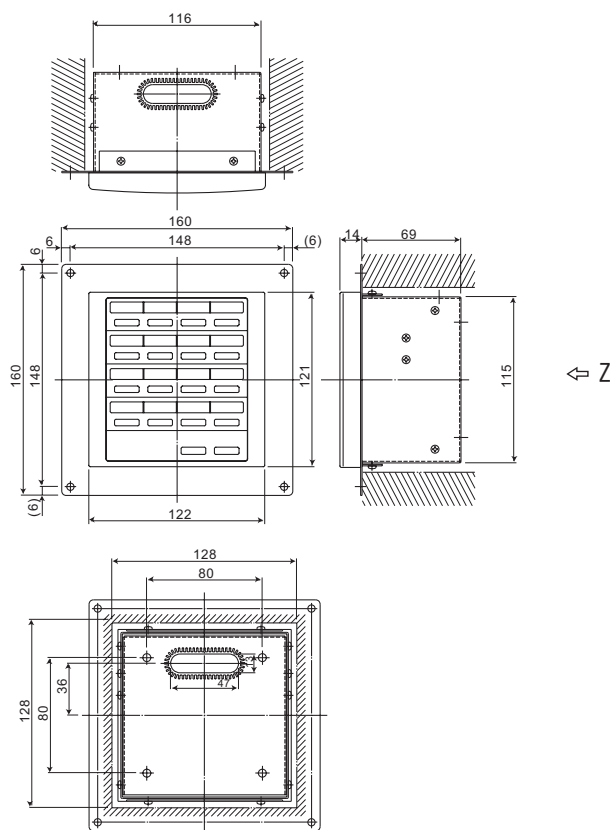
Central remote controller

TCB-SC642TLE2

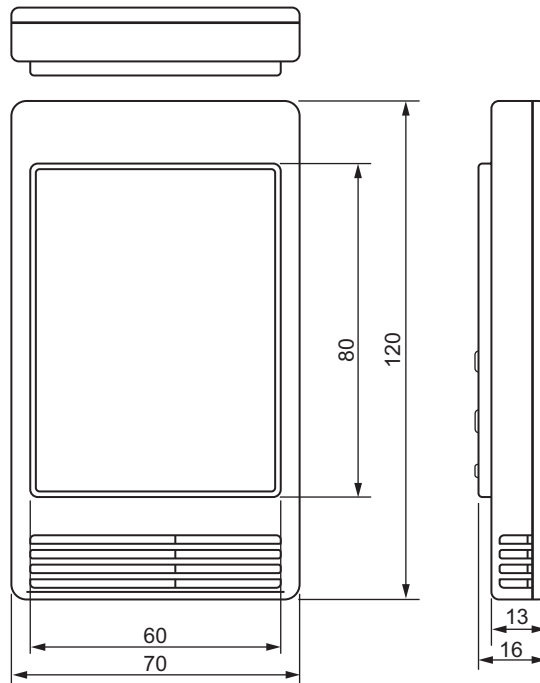


ON-OFF controller

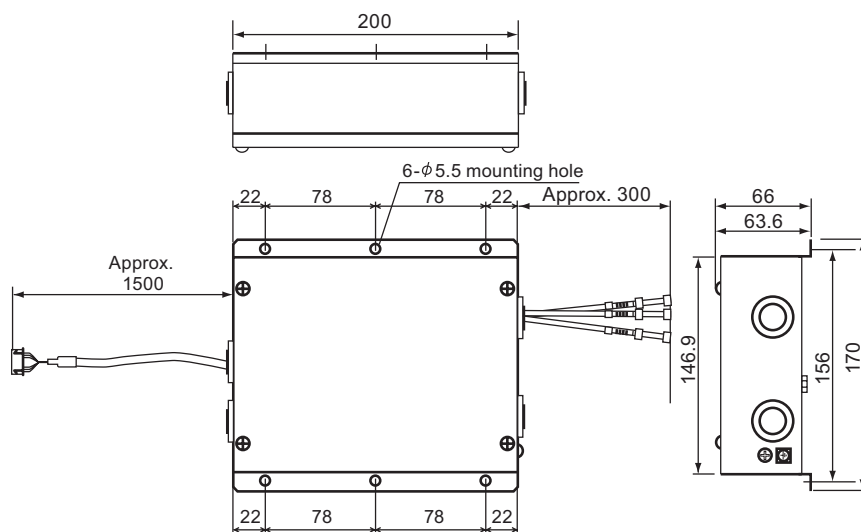
TCB-CC163TLE2



TCB-TC21LE2

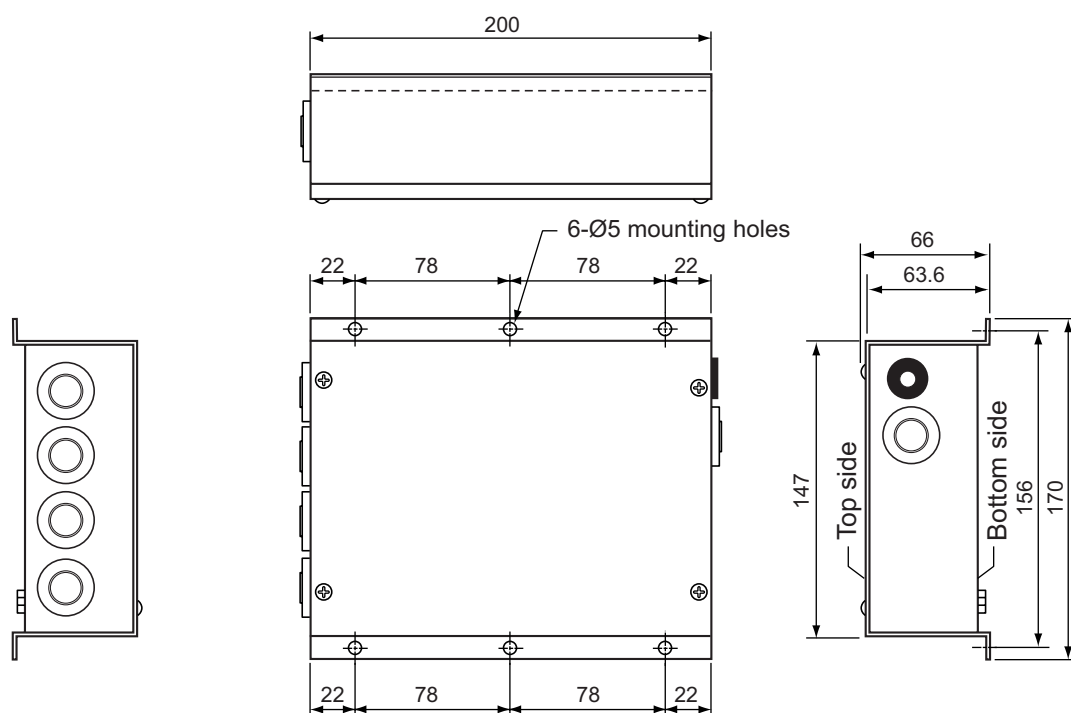


TCB-IFCB-4E2



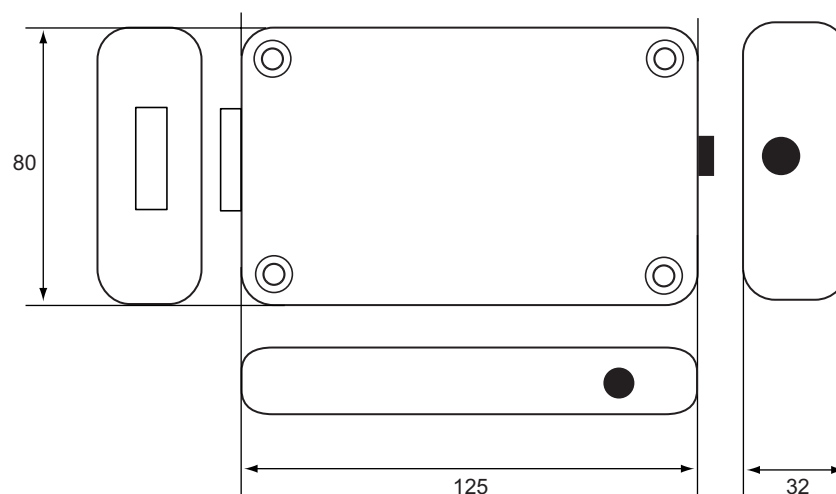
General Purpose Interface/Analog Interface

TCB-IFCG1TLE/TCB-IFCB640TLE



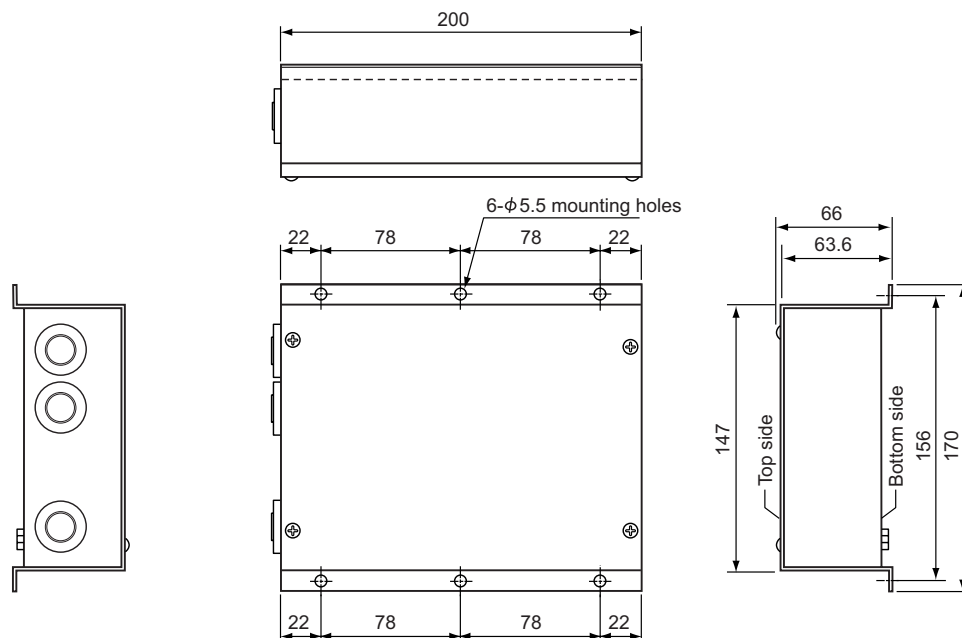
GSM Mobile Phone control interface

TCB-IFGSM1E



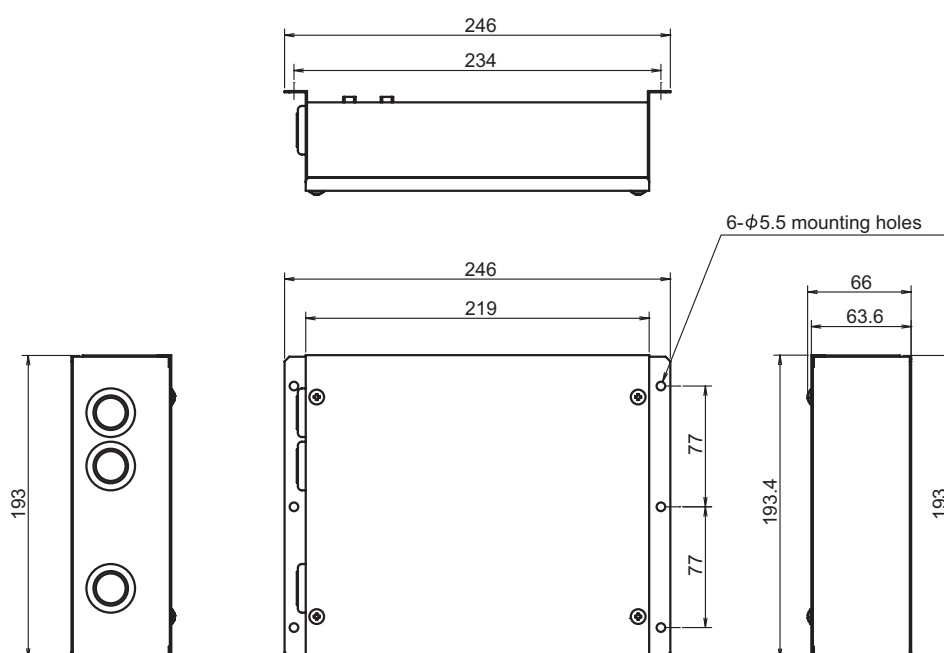
Modbus Interface

TCB-IFMB640TLE



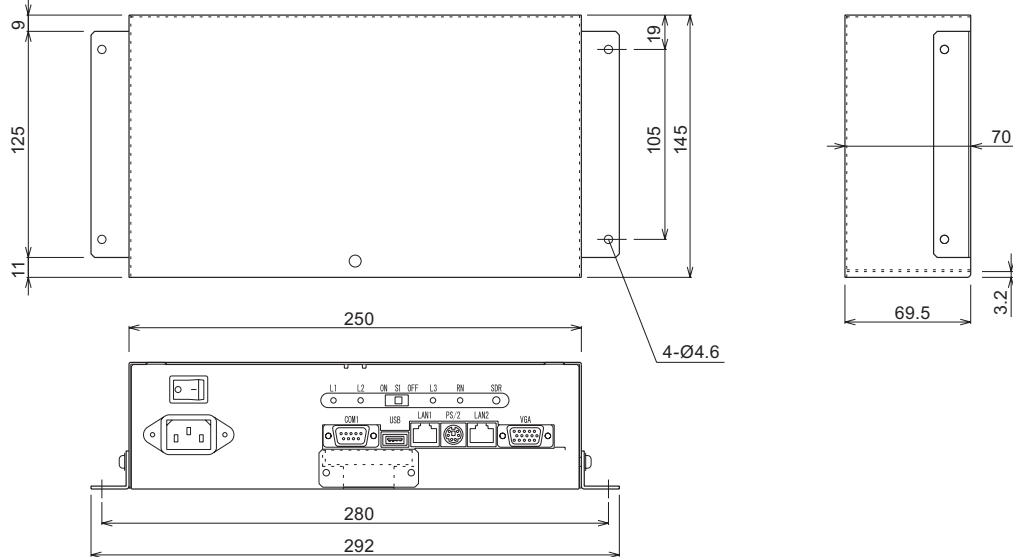
LON Gateway

TCB-IFLN642TLE



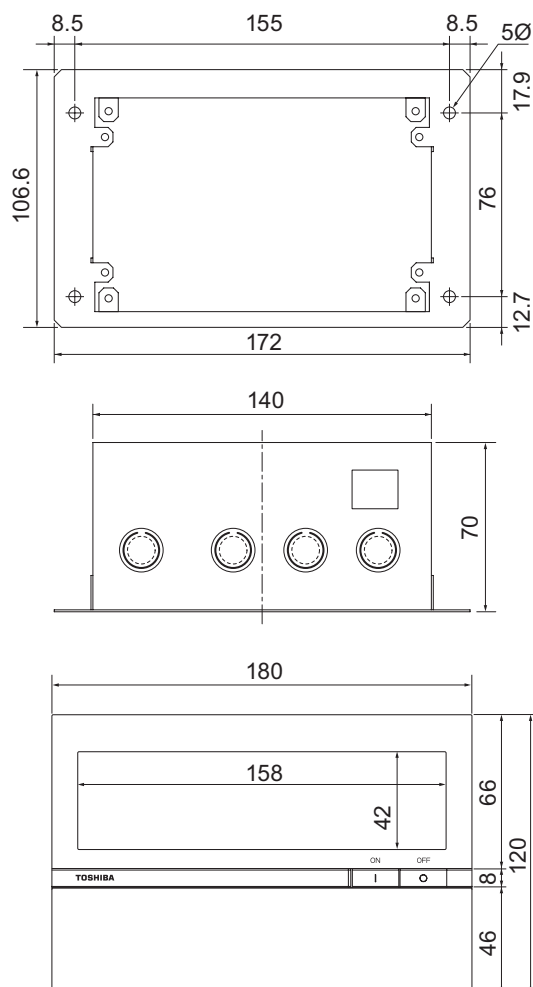
BACnet server

BMS-LSV6E

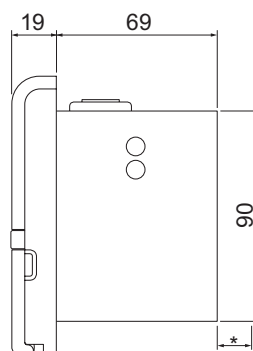
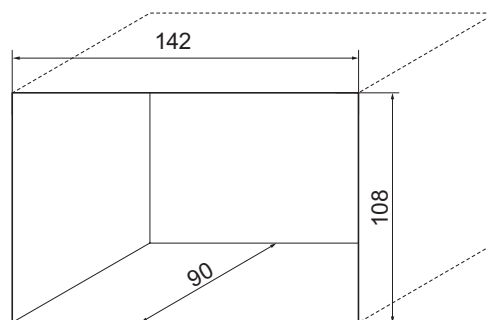


Compliant manager

BMS-CM1280TLE



Dimensions of unit fixing holes in the wall, etc.

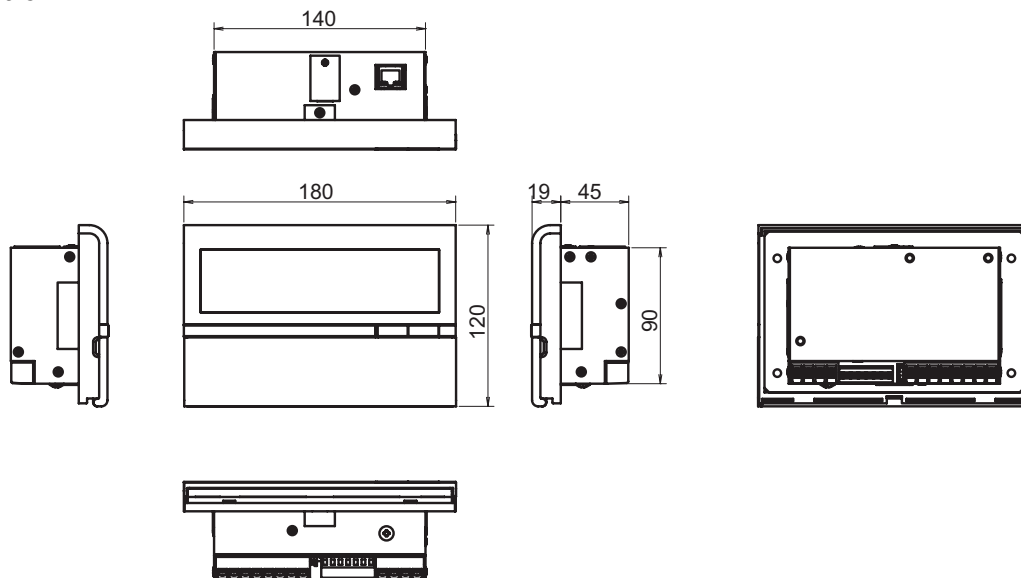


* Reserve space of 10mm or more when installing the unit.

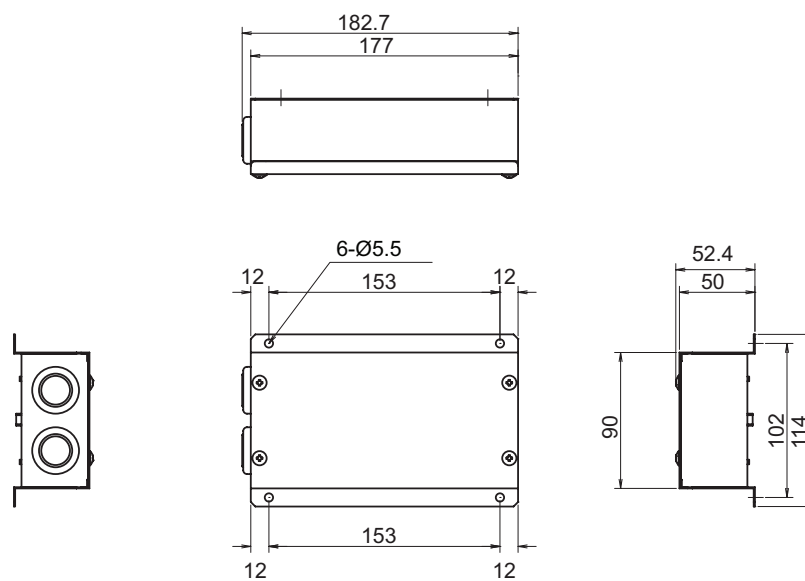
Smart Manager

BMS-SM1280HTLE

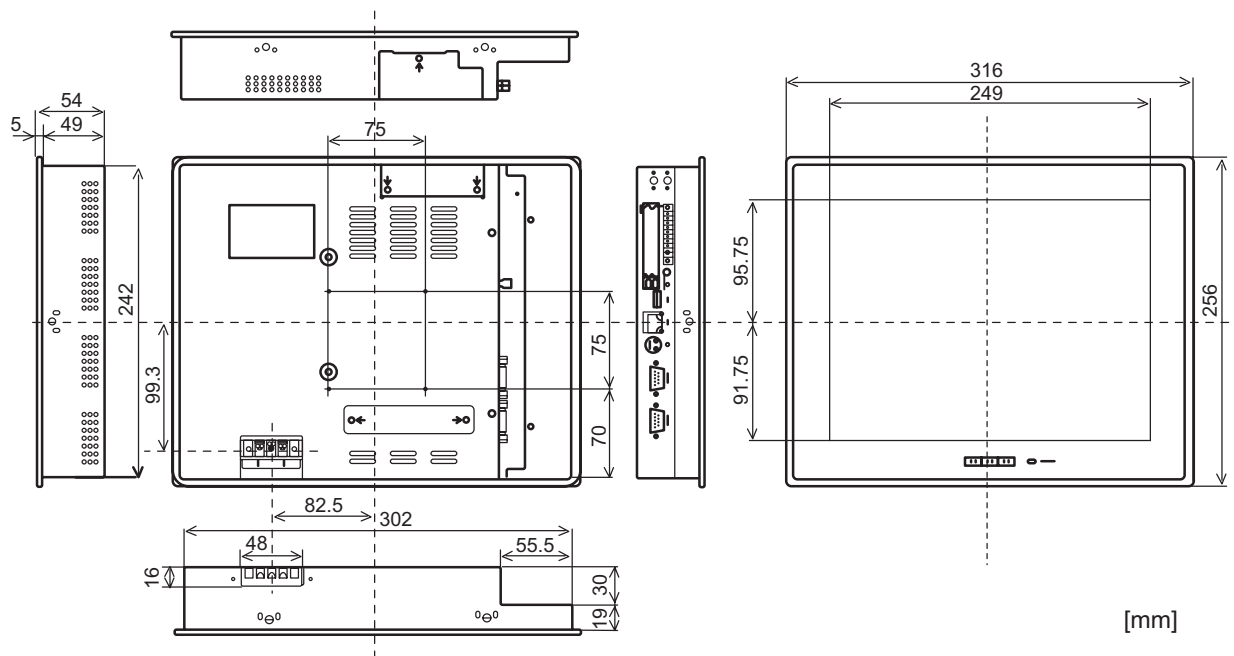
Central control



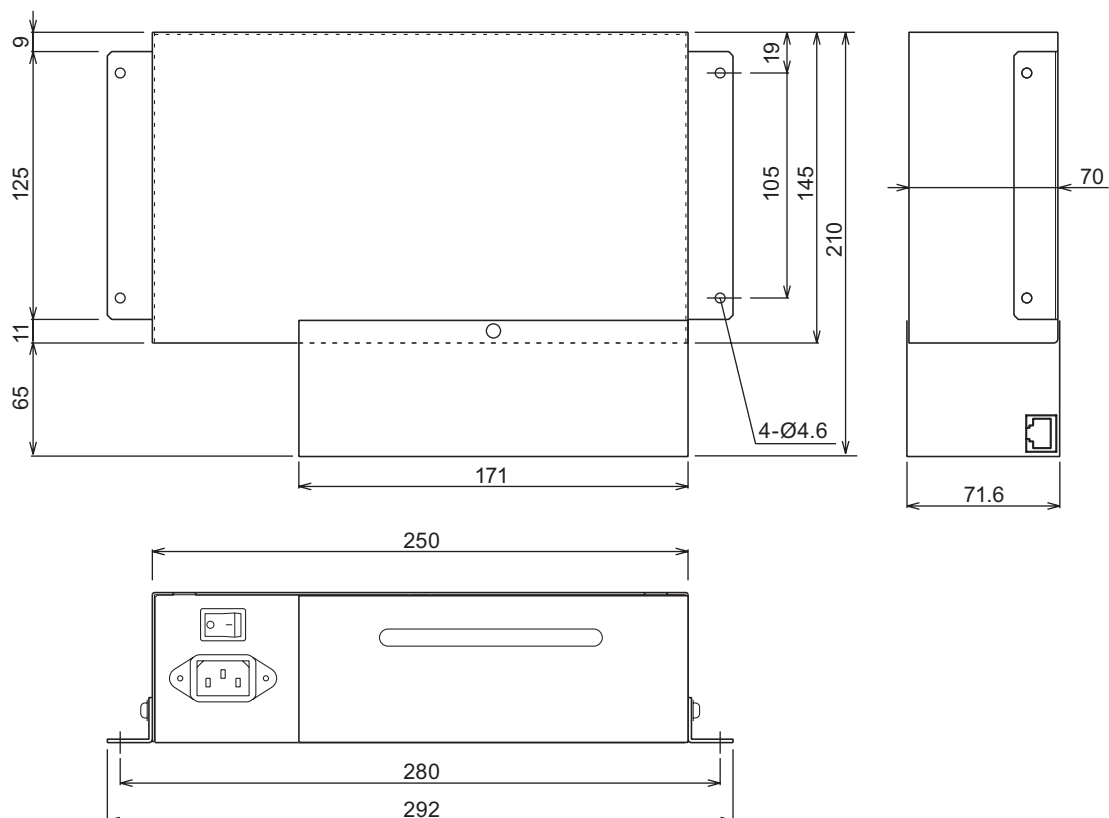
Power Unit



BMS-TP0641ACE
BMS-TP5121ACE
BMS-TP0641PWE
BMS-TP5121PWE

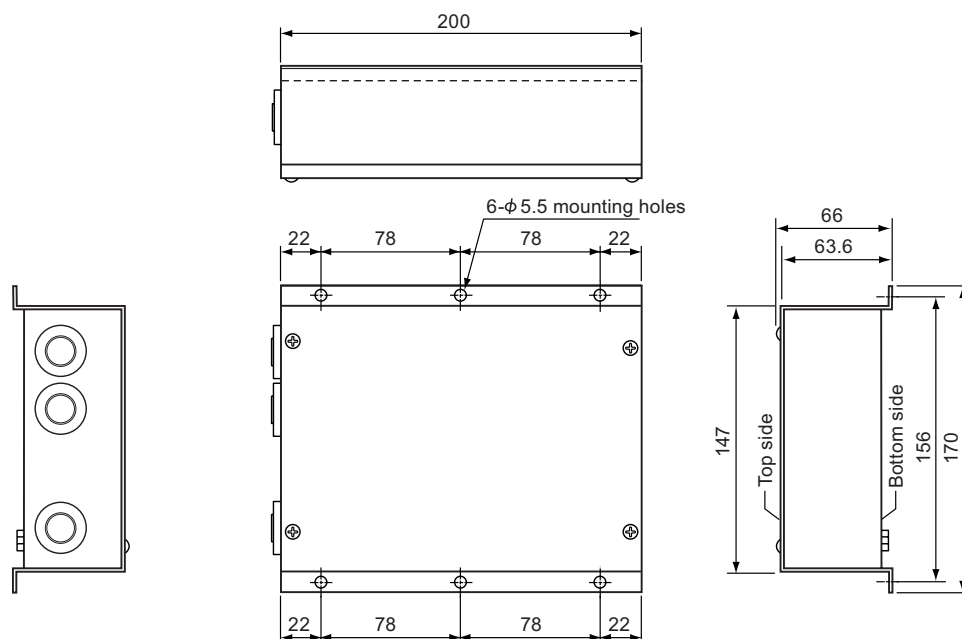


BMS-WB2561PWE/BMS-WB01GTE



TCS-Net Relay Interface

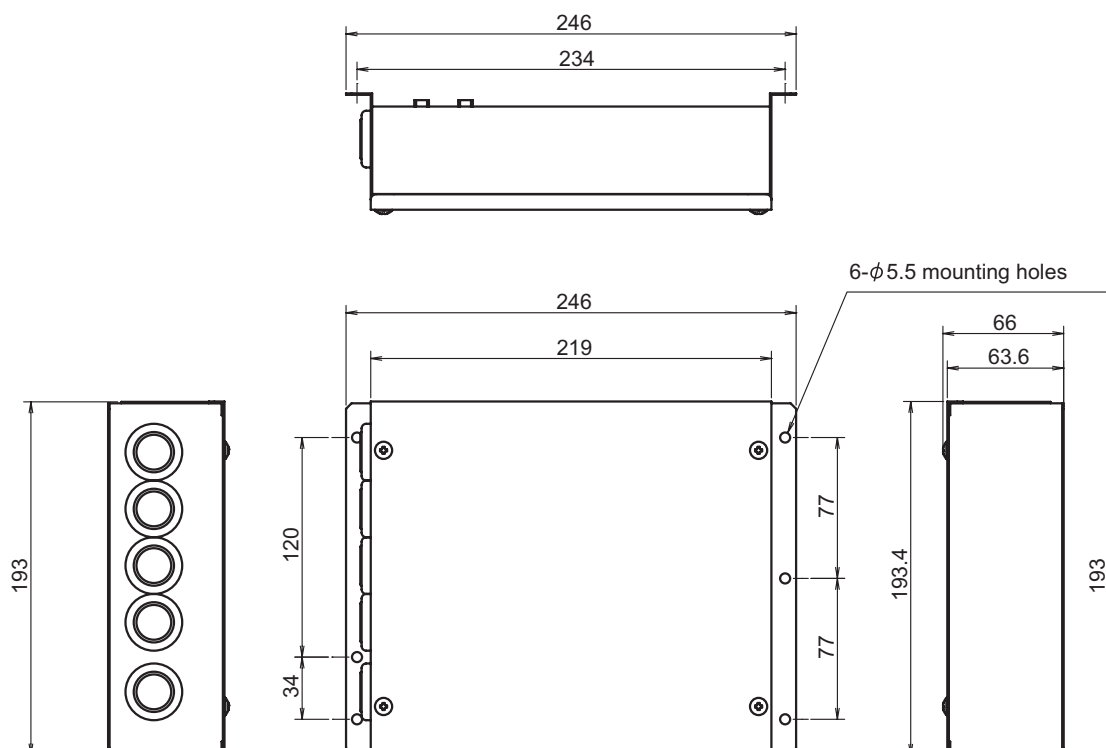
BMS-IFLSV4E



Digital I/O Relay Interface/Energy Monitoring Relay Interface

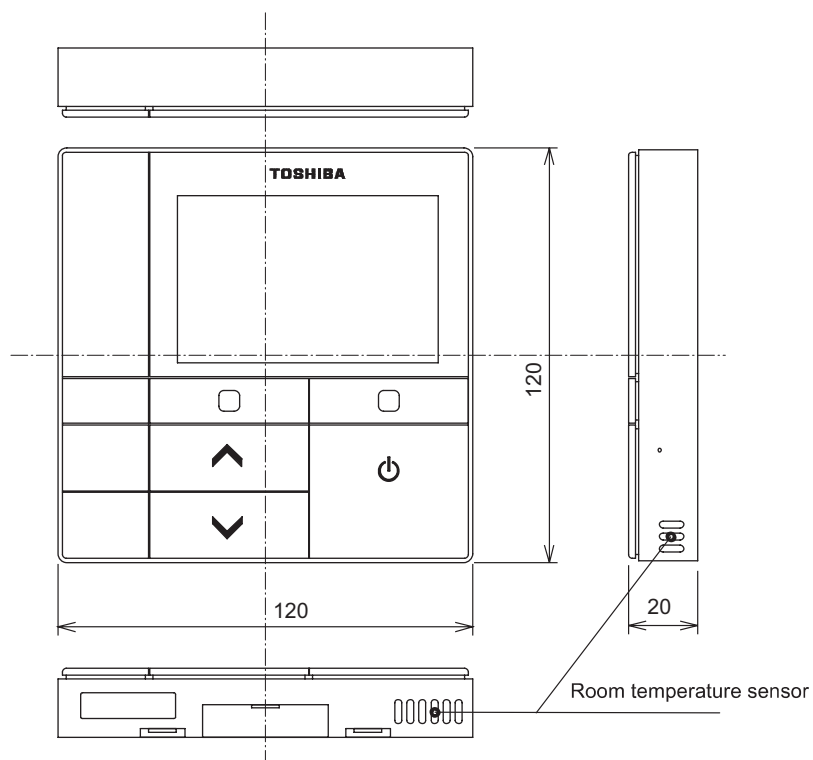
BMS-IFDD03E

BMS-IFWH5E



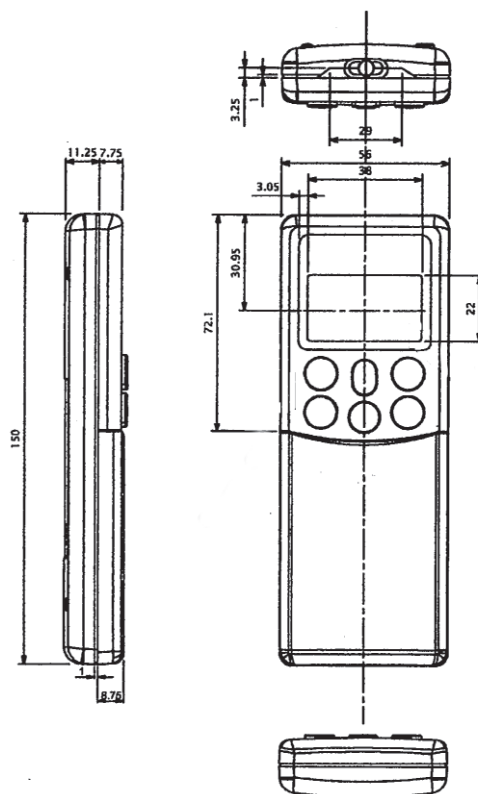
Wired remote controller with schedule timer

RBC-AMS51E-EN/ES



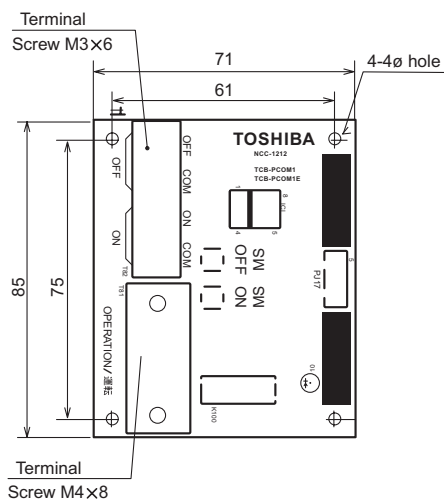
Wireless remote controller (High-wall 4seriesFlexi packed)

WH-H2UE

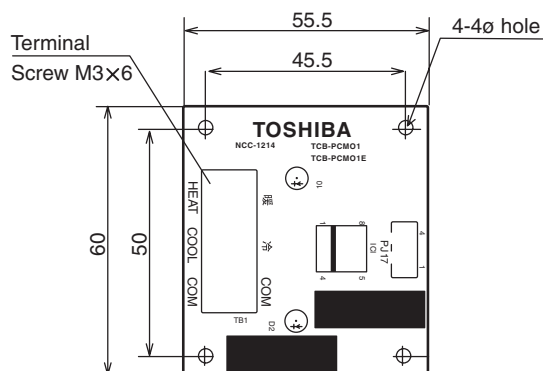


Dimensions of P.C. board

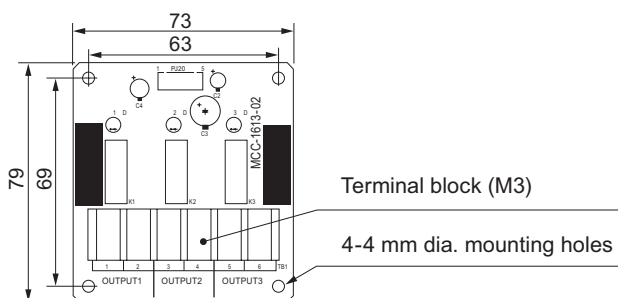
TCB-PCDM4E



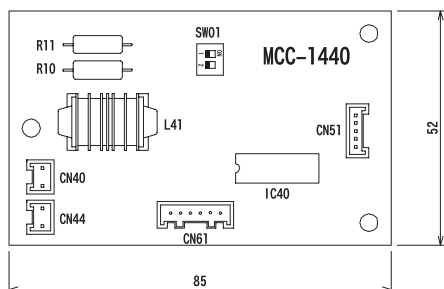
TCB-PCMO4E



TCB-PCIN4E



TCB-PCNT30TLE2





11-1. Outdoor unit

11-1-1 Specifications

Standard model (Single unit)

Equivalent HP			5HP (*)	6HP (*)	8HP	10HP	12HP	
Model name	Heat Pump	MMY-	MAP0501HT8-E	MAP0601HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1204HT8-E	
	Cooling Only	MMY-	MAP0501T8-E	MAP0601T8-E	MAP0804T8-E	MAP1004T8-E	MAP1204T8-E	
Outdoor unit type			Inverter unit					
Cooling capacity (**)			(kW)	14.0	16.0	22.4	28.0	33.5
Heating capacity (**)			(kW)	16.0	18.0	25.0	31.5	37.5
Power supply (**)			3phase 4wires 50Hz 400V (380-415V)					
Electrical characteristics (**)	Cooling	Running current	(A)	5.85	7.28	8.50	11.4	14.7
		Power consumption	(kW)	3.65	4.64	5.40	7.41	9.55
		Power factor	(%)	90	92	92	94	94
		EER (Energy Efficiency Ratio) (kW/kW))	3.84	3.45	4.15	3.78	3.51	
	Heating	Running current	(A)	6.09	7.08	8.8	11.80	16.0
		Power consumption	(kW)	3.84	4.56	5.53	7.50	10.2
		Power factor	(%)	91	93	91	92	92
		EER (Energy Efficiency Ratio) (kW/kW))	4.17	3.95	4.52	4.20	3.68	
	Starting Current		(A)	Soft Start				
Dimension	Packing	Height	(mm)	1,857	1,857	1,887	1,887	1,887
		Width	(mm)	1062	1062	1062	1062	1062
		Depth	(mm)	798	798	828	828	828
	Unit	Height	(mm)	1,800	1,800	1,830	1,830	1,830
		Width	(mm)	990	990	990	990	990
		Depth	(mm)	750	750	780	780	780
Weight	Packing	Heat Pump	(kg)	243	243	257	257	257
		Cooling only	(kg)	242	242	256	256	256
	Unit	Heat Pump	(kg)	228	228	242	242	242
		Cooling only	(kg)	227	227	241	241	241
Colour			Silky shade (Munsell 1Y8.5/0.5)					
Compressor	Type	Hermetic twin rotary compressor						
	Motor output	(kW)	1.1 x 2	1.4 x 2	2.3 x 2	3.1 x 2	4.2 x 2	
Fan unit	Fan	Propeller fan						
	Motor output	(kW)	0.60		1.0			
	Air volume	(m³/h)	9,000		9,900	10,500	11,600	
Heat exchanger			Finned tube					
Refrigerant	Charged refrigerant amount(*)	Heat Pump	(kg)	8.5		11.5		
		Cooling Only	(kg)	8.0		10.5		
	High-pressure switch		(Pa)	OFF: 2.9 ON: 3.73				
Protective devices			(**)		(*)			
Power supply wiring	Unit	MCA(*)	(A)	16.5		23.5	25.5	28.5
		MOCP(*)	(A)	20		32		40
Refrigerant piping	Connecting port diameter	Gas side	(mm)	ø 15.9	ø 19.1	ø 22.2		ø 28.6
		Liquid side	(mm)	ø 9.5		ø 12.7		
		Balance side	(mm)	ø 9.5				
	Connecting method	Gas side		Flare	Brazing			
		Liquid side		Flare				
		Balance side		Flare				
	Max. equivation length		(mm)	175		210		
	Max. real length		(mm)	150		170		
	Max. total pipe length (Real length) (*)		(mm)	300				
	Max. height difference		(mm)	Outdoor unit is higher than indoor unit : 50		Outdoor unit is higher than indoor unit : 70(*)		
Control wiring between indoor and outdoor units + Central controller wiring		(Up to 1000m)	Shield wire 1.25mm2 x 2 cores					
		(Up to 2000m)	Shield wire 2.0mm2 x 2 cores					
Max. No. of connected indoor units			8	10	13	16	20	
Sound pressure level	Cooling	(dB(A))	55.0	56.0	55.0	57.0	59.0	
	Heating	(dB(A))	55.0	56.0	56.0	58.0	62.0	
Sound power level	Cooling	(dB(A))	75	76	77	78	82	
	Heating	(dB(A))	75	76	78	79	83	
Max. external static pressure			(Pa)	35		60		50
Operation temperature range		Cooling	CDB	-5 to 43				
		Heating	CWB	-15 to 15.5		-20 to 15.5		

Note

*: SMMS model

** : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / Over-current relay

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

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

The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.

*2 : The source voltage must not fluctuate more than ±10%.

*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.

*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse

*5 : Select wire size base on the larger value of MCA.

MCA : Minimum Circuit Amps

*6 : MOCP : Maximum Overcurrent Protection(Amps)

*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

*8 : Set 50m or less if the height difference between indoor units exceeds 3m.

*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			14HP	16HP
Model name	Heat Pump	MMY-	MAP1404HT8-E	MAP1604HT8-E
	Cooling Only	MMY-	MAP1404T8-E	MAP1604T8-E
Outdoor unit type			Inverter unit	
Cooling capacity (*1)		(kW)	40.0	45.0
Heating capacity (*1)		(kW)	45.0	50.0
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)	
Electrical characteristics (*1)	Cooling	Running current (A)	17.7	20.8
		Power consumption (kW)	11.5	13.7
		Power factor (%)	94	95
		EER (Energy Efficiency Ratio) (kW/kW))	3.48	3.28
	Heating	Running current (A)	17.6	22.0
		Power consumption (kW)	11.2	14.2
		Power factor (%)	92	93
		EER (Energy Efficiency Ratio) (kW/kW))	4.02	3.52
Starting Current (A)		Soft Start		
Dimension	Packing	Height (mm)	1,887	1,887
		Width (mm)	1282	1282
		Depth (mm)	828	828
	Unit	Height (mm)	1,830	1,830
		Width (mm)	1210	1210
		Depth (mm)	780	780
Weight	Packing	Heat Pump (kg)	347	347
		Cooling only (kg)	347	347
	Unit	Heat Pump (kg)	330	330
		Cooling only (kg)	330	330
Colour			Silky shade (Munsell 1Y8.5/0.5)	
Compressor	Type	Hermetic twin rotary compressor		
	Motor output (kW)	3.0 x 3	3.6 x 3	
Fan unit	Fan	Propeller fan		
	Motor output (kW)	1.0		
	Air volume (m³/h)	12,000	13,000	
Heat exchanger			Finned tube	
Refrigerant	Charged refrigerant amount(*3)	Heat Pump (kg)	R410A	
		Cooling Only (kg)	11.5	
High-pressure switch (Pa)			OFF: 2.9 ON: 3.73	
Protective devices			(*4)	
Power supply wiring	Unit	MCA(*5) (A)	33.2	36.5
		MOCP(*6) (A)	40	50
Refrigerant piping	Connecting port diameter	Gas side (mm)	ø 28.6	
		Liquid side (mm)	ø 15.9	
		Balance side (mm)	ø 9.5	
	Connecting method	Gas side	Brazing	
		Liquid side	Flare	
		Balance side	Flare	
	Max. equivation length (mm)		210	
	Max. real length (mm)		170	
	Max. total pipe length (Real length) (*7) (mm)		300	
	Max. height difference (*8) (mm)		Outdoor unit is higher than indoor unit : 70	
Max. height difference (*9) (mm)		Outdoor unit is lower than indoor unit: 40		
Control wiring between indoor and outdoor units +		(Up to 1000m)		
Central controller wiring		(Up to 2000m)		
Max. No. of connected indoor units			23	27
Sound pressure level	Cooling (dB(A))	60.0	62.0	
	Heating (dB(A))	62.0	64.0	
Sound power level	Cooling (dB(A))	82	83	
	Heating (dB(A))	83	84	
Max. external static pressure (Pa)			40	
Operation temperature range		Cooling CDB	-5 to 43	
		Heating CWB	-20 to 15.5	

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Standard model (Combination)

Equivalent HP			Equivalent to 18HP		Equivalent to 20HP		Equivalent to 22HP				
Model name		Heat Pump	MMY-	AP1814HT8-E		AP2014HT8-E		AP2214HT8-E			
		Cooling Only	MMY-	AP1814T8-E		AP2014T8-E		AP2214T8-E			
Outdoor unit type			Inverter unit								
Outdoor unit model		Heat Pump	MMY-	MAP1004HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP1204HT8-E	MAP1004HT8-E		
		Cooling Only	MMY-	MAP1004T8-E	MAP0804T8-E	MAP1004T8-E	MAP1004T8-E	MAP1204T8-E	MAP1004T8-E		
Cooling capacity (*1)			(kW)	50.4		56.0		61.5			
Heating capacity (*1)			(kW)	56.5		63.0		69.0			
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)								
Electrical characteristics (*1)	Cooling	Running current	(A)	19.9		22.8		26.0			
		Power consumption	(kW)	12.81		14.82		16.96			
		Power factor	(%)	93		94		94			
		EER (Energy Efficiency Ratio) (kW/kW))	3.93		3.78		3.63				
	Heating	Running current	(A)	20.5		23.5		27.8			
		Power consumption	(kW)	13.03		15.00		17.70			
		Power factor	(%)	92		92		92			
		EER (Energy Efficiency Ratio) (kW/kW))	4.34		4.20		3.90				
	Starting Current		(A)	Soft Start							
Dimension	Packing	Height	(mm)	1,887	1,887	1,887	1,887	1,887	1,887		
		Width	(mm)	1,062	1,062	1,062	1,062	1,062	1,062		
		Depth	(mm)	828	828	828	828	828	828		
	Unit	Height	(mm)	1,830	1,830	1,830	1,830	1,830	1,830		
		Width	(mm)	990	990	990	990	990	990		
Depth		(mm)	780	780	780	780	780	780			
Weight	Packing	Heat Pump	(kg)	257	257	257	257	257	257		
		Cooling only	(kg)	256	256	256	256	256	256		
	Unit	Heat Pump	(kg)	242	242	242	242	242	242		
		Cooling only	(kg)	241	241	241	241	241	241		
Appearance (Colour)			Silky shade (Munsell 1Y8.5/0.5)								
Compressor		Type	Hermetic twin rotary compressor								
		Motor output	(kW)	3.1 x 2	2.3 x 2	3.1 x 2	3.1 x 2	4.2 x 2	3.1 x 2		
Fan unit		Fan	Propeller fan								
		Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0		
		Air volume	(m³/h)	10,500	9,900	10,500	10,500	11,600	10,500		
Heat exchanger			Finned tube								
Refrigerant			R410A								
			Charged refrigerant amount(*3)	Heat Pump	(kg)	11.5	11.5	11.5	11.5	11.5	11.5
				Cooling Only	(kg)	10.5	10.5	10.5	10.5	10.5	10.5
High-pressure switch			(Pa)	OFF: 2.9 ON: 3.73							
Protective devices			(*4)								
Power supply wiring		Unit	MCA(*5)	(A)	49.0		51.0		54.0		
			MOCP(*6)	(A)	63		63		63		
Refrigerant piping	Connecting port diameter	Gas side	(mm)	ø 28.6				ø 34.9			
		Liquid side	(mm)	ø 15.9				ø 19.1			
		Balance side	(mm)	ø 9.5							
	Connecting method	Gas side	Brazing								
		Liquid side	Flare								
		Balance side	Flare								
	Max. equivation length		(mm)	220							
	Max. real length		(mm)	180							
	Max. total pipe length (Real length) (*7)		(mm)	300							
	Max. height difference (*8) (mm)		(mm)	Outdoor unit is higher than indoor unit : 70							
Max. height difference (*9) (mm)		(mm)	Outdoor unit is lower than indoor unit: 40								
Control wiring between indoor and outdoor units +			(Up to 1000m)	Shield wire 1.25mm2 x 2 cores							
Central controller wiring			(Up to 2000m)	Shield wire 2.0mm2 x 2 cores							
Max. No. of connected indoor units			30		33		37				
Sound pressure level		Cooling	(dB(A))	59.5		60.0		61.5			
		Heating	(dB(A))	60.5		61.0		63.5			
Max. external static pressure			(Pa)	60	60	60	60	50	60		
Operation temperature range		Cooling	CDB	-5 to 43							
		Heating	CWB	-20 to 15.5							

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			Equivalent to 24HP		Equivalent to 26HP		Equivalent to 28HP	
Model name	Heat Pump	MMY-	AP2414HT8-E		AP2614HT8-E		AP2814HT8-E	
	Cooling Only	MMY-	AP2414T8-E		AP2614T8-E		AP2814T8-E	
Outdoor unit type			Inverter unit					
Outdoor unit model	Heat Pump	MMY-	MAP1204HT8-E	MAP1204HT8-E	MAP1604HT8-E	MAP1004HT8-E	MAP1604HT8-E	MAP1204HT8-E
	Cooling Only	MMY-	MAP1204T8-E	MAP1204T8-E	MAP1604T8-E	MAP1004T8-E	MAP1604T8-E	MAP1204T8-E
Cooling capacity (*1)		(kW)	68.0		73.0		78.5	
Heating capacity (*1)		(kW)	76.5		81.5		88.0	
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)					
Electrical characteristics (*1)	Cooling	Running current (A)	30.2		32.2		35.5	
		Power consumption (kW)	19.66		21.11		23.25	
		Power factor (%)	94		95		95	
		EER (Energy Efficiency Ratio) (kW/kW))	3.46		3.46		3.38	
	Heating	Running current (A)	33.2		33.8		38.4	
		Power consumption (kW)	21.13		21.70		24.65	
		Power factor (%)	92		93		92.6	
		EER (Energy Efficiency Ratio) (kW/kW))	3.62		3.76		3.57	
	Starting Current (A)		Soft Start					
Dimension	Packing	Height (mm)	1,887	1,887	1,887	1,887	1,887	1,887
		Width (mm)	1,062	1,062	1,282	1,062	1,282	1,062
		Depth (mm)	828	828	828	828	828	828
	Unit	Height (mm)	1,830	1,830	1,830	1,830	1,830	1,830
		Width (mm)	990	990	1,210	990	1,210	990
Depth (mm)		780	780	780	780	780	780	
Weight	Packing	Heat Pump (kg)	257	257	347	257	347	257
		Cooling only (kg)	256	256	347	256	347	256
	Unit	Heat Pump (kg)	242	242	330	242	330	242
		Cooling only (kg)	241	241	330	241	330	241
Colour			Silky shade (Munsell 1Y8.5/0.5)					
Compressor	Type	Hermetic twin rotary compressor						
	Motor output (kW)	4.2 x 2	4.2 x 2	3.6 x 3	3.1 x 2	3.6 x 3	4.2 x 2	
Fan unit	Fan	Propeller fan						
	Motor output (kW)	1.0	1.0	1.0	1.0	1.0	1.0	
	Air volume (m³/h)	11,600	11,600	13,000	10,500	13,000	11,600	
Heat exchanger			Finned tube					
Refrigerant	Charged refrigerant amount(*3)	Heat Pump (kg)	11.5	11.5	11.5	11.5	11.5	11.5
		Cooling Only (kg)	10.5	10.5	11.5	10.5	11.5	10.5
	High-pressure switch (Pa)		OFF: 2.9 ON: 3.73					
Protective devices			(*4)					
Power supply wiring	Unit	MCA(*5) (A)	57.0		62.0		65.0	
		MOCP(*6) (A)	63		80		80	
Refrigerant piping	Connecting port diameter	Gas side (mm)	ø 34.9					
		Liquid side (mm)	ø 19.1					
		Balance side (mm)	ø 9.5					
	Connecting method	Gas side	Brazing					
		Liquid side	Flare					
		Balance side	Flare					
	Max. equivation length (mm)		220					
	Max. real length (mm)		180					
	Max. total pipe length (Real length) (*7) (mm)		300					
Max. height difference (*8) (mm) (*9) (mm)		Outdoor unit is higher than indoor unit : 70						
		Outdoor unit is lower than indoor unit: 40						
Control wiring between indoor and outdoor units + Central controller wiring		(Up to 1000m) (Up to 2000m)	Shield wire 1.25mm2 x 2 cores Shield wire 2.0mm2 x 2 cores					
Max. No. of connected indoor units			40		43		47	
Sound pressure level	Cooling (dB(A))	62.0		63.5		64.0		
	Heating (dB(A))	65.0		65.0		66.5		
Max. external static pressure (Pa)			50	50	40	60	40	50
Operation temperature range		Cooling CDB	-5 to 43					
		Heating CWB	-20 to 15.5					

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			Equivalent to 30HP		Equivalent to 32HP		Equivalent to 34HP					
Model name		Heat Pump	MMY-	AP3014HT8-E		AP3214HT8-E		AP3414HT8-E				
		Cooling Only	MMY-	AP3014T8-E		AP3214T8-E		AP3414T8-E				
Outdoor unit type			Inverter unit									
Outdoor unit model		Heat Pump	MMY-	MAP1604HT8-E	MAP1404HT8-E	MAP1604HT8-E	MAP1604HT8-E	MAP1204HT8-E	MAP1204HT8-E	MAP1004HT8-E		
		Cooling Only	MMY-	MAP1604T8-E	MAP1404T8-E	MAP1604T8-E	MAP1604T8-E	MAP1204T8-E	MAP1204T8-E	MAP1004T8-E		
Cooling capacity (*1)			(kW)	85.0		90.0		96.0				
Heating capacity (*1)			(kW)	95.0		100.0		108.0				
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)									
Electrical characteristics (*1)	Cooling	Running current	(A)	38.5		41.6		41.5				
		Power consumption	(kW)	25.20		27.40		27.06				
		Power factor	(%)	95		95		94				
		EER (Energy Efficiency Ratio) (kW/kW))	3.37		3.28		3.55					
	Heating	Running current	(A)	39.6		44.1		44.9				
		Power consumption	(kW)	25.40		28.40		28.60				
		Power factor	(%)	93		93		92				
		EER (Energy Efficiency Ratio) (kW/kW))	3.74		3.52		3.78					
	Starting Current		(A)	Soft Start								
Dimension	Packing	Height	(mm)	1,887	1,887	1,887	1,887	1,887	1,887	1,887		
		Width	(mm)	1,282	1,282	1,282	1,282	1,062	1,062	1,062		
		Depth	(mm)	828	828	828	828	828	828	828		
	Unit	Height	(mm)	1,830	1,830	1,830	1,830	1,830	1,830	1,830		
		Width	(mm)	1,210	1,210	1,210	1,210	990	990	990		
		Depth	(mm)	780	780	780	780	780	780	780		
Weight	Packing	Heat Pump	(kg)	347	347	347	347	257	257	257		
		Cooling only	(kg)	347	347	347	347	256	256	256		
	Unit	Heat Pump	(kg)	330	330	330	330	242	242	242		
		Cooling only	(kg)	330	330	330	330	241	241	241		
Colour			Silky shade (Munsell 1Y8.5/0.5)									
Compressor		Type	Hermetic twin rotary compressor									
		Motor output	(kW)	3.6 x 3	3.0 x 3	3.6 x 3	3.6 x 3	4.2 x 2	4.2 x 2	3.1 x 2		
Fan unit		Fan	Propeller fan									
		Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
		Air volume	(m³/h)	13,000	12,000	13,000	13,000	11,600	11,600	10,500		
Heat exchanger			Finned tube									
Refrigerant			R410A									
			Charged refrigerant amount(*3)	Heat Pump	(kg)	11.5	11.5	11.5	11.5	11.5	11.5	11.5
				Cooling Only	(kg)	11.5	11.5	11.5	11.5	10.5	10.5	10.5
High-pressure switch			(Pa)	OFF: 2.9 ON: 3.73								
Protective devices			(*4)									
Power supply wiring		Unit	MCA(*5)	(A)	69.7		73.0		82.5			
			MOCP(*6)	(A)	80		100		100			
Refrigerant piping		Connecting port diameter	Gas side	(mm)	ø 34.9							
			Liquid side	(mm)	ø 19.1							
			Balance side	(mm)	ø 9.5							
		Connecting method	Gas side		Brazing							
			Liquid side		Flare							
			Balance side		Flare							
		Max. equivation length		(mm)	220				235			
		Max. real length		(mm)	180				190			
		Max. total pipe length (Real length) (*7)		(mm)	300				500			
		Max. height difference		(*8) (mm)	Outdoor unit is higher than indoor unit : 70							
(*9) (mm)	Outdoor unit is lower than indoor unit: 40											
Control wiring between indoor and outdoor units +			(Up to 1000m)		Shield wire 1.25mm2 x 2 cores							
Central controller wiring			(Up to 2000m)		Shield wire 2.0mm2 x 2 cores							
Max. No. of connected indoor units					48		48		48			
Sound pressure level		Cooling	(dB(A))	64.5		65.0		63.5				
		Heating	(dB(A))	66.5		67.0		66.0				
Max. external static pressure			(Pa)	40	40	40	40	50	50	60		
Operation temperature range		Cooling	CDB	-5 to 43								
		Heating	CWB	-20 to 15.5								

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			Equivalent to 36HP			Equivalent to 38HP			Equivalent to 40HP					
Model name		Heat Pump	MMY-	AP3614HT8-E			AP3814HT8-E			AP4014HT8-E				
		Cooling Only	MMY-	AP3614T8-E			AP3814T8-E			AP4014T8-E				
Outdoor unit type			Inverter unit											
Outdoor unit model		Heat Pump	MMY-	MAP1204HT8-E	MAP1204HT8-E	MAP1204HT8-E	MAP1604HT8-E	MAP1204HT8-E	MAP1004HT8-E	MAP1604HT8-E	MAP1204HT8-E	MAP1204HT8-E		
		Cooling Only	MMY-	MAP1204T8-E	MAP1204T8-E	MAP1204T8-E	MAP1604T8-E	MAP1204T8-E	MAP1004T8-E	MAP1604T8-E	MAP1204T8-E	MAP1204T8-E		
Cooling capacity (*1)			(kW)	101.0			106.0			112.0				
Heating capacity (*1)			(kW)	113.0			119.5			127.0				
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)											
Electrical characteristics (*1)	Cooling	Running current	(A)	44.4			46.9			50.1				
		Power consumption	(kW)	28.93			30.66			32.80				
		Power factor	(%)	94			94			94				
		EER (Energy Efficiency Ratio) (kW/kW))	3.49			3.47			3.41					
	Heating	Running current	(A)	48.4			50.2			55.1				
		Power consumption	(kW)	30.84			32.14			35.29				
		Power factor	(%)	92			92			92				
		EER (Energy Efficiency Ratio) (kW/kW))	3.66			3.72			3.60					
Starting Current		(A)	Soft Start											
Dimension	Packing	Height	(mm)	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887		
		Width	(mm)	1,062	1,062	1,062	1,282	1,062	1,062	1,282	1,062	1,062		
		Depth	(mm)	828	828	828	828	828	828	828	828	828		
	Unit	Height	(mm)	1,830	1,830	1,830	1,830	1,830	1,830	1,830	1,830	1,830		
		Width	(mm)	990	990	990	1,210	990	990	1,210	990	990		
		Depth	(mm)	780	780	780	780	780	780	780	780	780		
Weight	Packing	Heat Pump	(kg)	257	257	257	347	257	257	347	257	257		
		Cooling only	(kg)	256	256	256	347	256	256	347	256	256		
	Unit	Heat Pump	(kg)	242	242	242	330	242	242	330	242	242		
		Cooling only	(kg)	241	241	241	330	241	241	330	241	241		
Colour			Silky shade (Munsell 1Y8.5/0.5)											
Compressor		Type	Hermetic twin rotary compressor											
		Motor output	(kW)	4.2 x 2	4.2 x 2	4.2 x 2	3.6 x 3	4.2 x 2	3.1 x 2	3.6 x 3	4.2 x 2	4.2 x 2		
Fan unit		Fan	Propeller fan											
		Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
		Air volume	(m³/h)	11,600	11,600	11,600	13,000	11,600	10,500	13,000	11,600	11,600		
Heat exchanger			Finned tube											
Refrigerant			R410A											
			Charged refrigerant amount(*3)	Heat Pump	(kg)	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
				Cooling Only	(kg)	10.5	10.5	10.5	11.5	10.5	10.5	11.5	10.5	10.5
High-pressure switch			(Pa)	OFF: 2.9 ON: 3.73										
Protective devices			(*4)											
Power supply wiring		Unit	MCA(*5)	(A)	85.5			90.5			93.5			
			MOCP(*6)	(A)	100			100			125			
Refrigerant piping		Connecting port diameter	Gas side	(mm)	ø 41.3									
			Liquid side	(mm)	ø 22.2									
			Balance side	(mm)	ø 9.5									
		Connecting method	Gas side	Brazing										
			Liquid side	Flare										
			Balance side	Flare										
		Max. equivation length		(mm)	235									
		Max. real length		(mm)	190									
		Max. total pipe length (Real length) (*7)		(mm)	500									
Max. height difference		(*8) (mm)	Outdoor unit is higher than indoor unit : 70											
		(*9) (mm)	Outdoor unit is lower than indoor unit: 40											
Control wiring between indoor and outdoor units +			(Up to 1000m)		Shield wire 1.25mm2 x 2 cores									
Central controller wiring			(Up to 2000m)		Shield wire 2.0mm2 x 2 cores									
Max. No. of connected indoor units			48			48			48					
Sound pressure level		Cooling	(dB(A))	64.0			65.0			65.0				
		Heating	(dB(A))	67.0			67.0			67.5				
Max. external static pressure			(Pa)	50	50	50	40	50	60	40	50	50		
Operation temperature range		Cooling	CDB	-5 to 43										
		Heating	CWB	-20 to 15.5										

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
- *2 : The source voltage must not fluctuate more than ±10%.
- *3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
- *4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
- *5 : Select wire size base on the larger value of MCA.
- MCA : Minimum Circuit Amps
- *6 : MOCP : Maximum Overcurrent Protection(Amps)
- *7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
- *8 : Set 50m or less if the height difference between indoor units exceeds 3m.
- *9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			Equivalent to 42HP			Equivalent to 44HP			
Model name	Heat Pump	MMY-	AP4214HT8-E			AP4414HT8-E			
	Cooling Only	MMY-	AP4214T8-E			AP4414T8-E			
Outdoor unit type			Inverter unit						
Outdoor unit model	Heat Pump	MMY-	MAP1604HT8-E	MAP1404HT8-E	MAP1204HT8-E	MAP1604HT8-E	MAP1604HT8-E	MAP1204HT8-E	
	Cooling Only	MMY-	MAP1604T8-E	MAP1404T8-E	MAP1204T8-E	MAP1604T8-E	MAP1604T8-E	MAP1204T8-E	
Cooling capacity (*1)		(kW)	118.0			123.5			
Heating capacity (*1)		(kW)	132.0			138.0			
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)						
Electrical characteristics (*1)	Cooling	Running current	(A)	53.1			56.3		
		Power consumption	(kW)	34.47			36.95		
		Power factor	(%)	94			95		
		EER (Energy Efficiency Ratio) (kW/kW))	3.42			3.34			
	Heating	Running current	(A)	55.4			60.5		
		Power consumption	(kW)	35.46			38.85		
		Power factor	(%)	92			93		
		EER (Energy Efficiency Ratio) (kW/kW))	3.72			3.55			
	Starting Current		(A)	Soft Start					
Dimension	Packing	Height	(mm)	1,887	1,887	1,887	1,887	1,887	1,887
		Width	(mm)	1,282	1,282	1,062	1,282	1,282	1,062
		Depth	(mm)	828	828	828	828	828	828
	Unit	Height	(mm)	1,830	1,830	1,830	1,830	1,830	1,830
		Width	(mm)	1,210	1,210	990	1,210	1,210	990
		Depth	(mm)	780	780	780	780	780	780
Weight	Packing	Heat Pump	(kg)	347	347	257	347	347	257
		Cooling only	(kg)	347	347	256	347	347	256
	Unit	Heat Pump	(kg)	330	330	242	330	330	242
		Cooling only	(kg)	330	330	241	330	330	241
Colour			Silky shade (Munsell 1Y8.5/0.5)						
Compressor	Type	Hermetic twin rotary compressor							
	Motor output	(kW)	3.6 x 3	3.0 x 3	4.2 x 2	3.6 x 3	3.6 x 3	4.2 x 2	
Fan unit	Fan	Propeller fan							
	Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	
	Air volume	(m³/h)	13,000	12,000	11,600	13,000	13,000	11,600	
Heat exchanger			Finned tube						
Refrigerant	Charged refrigerant amount(*3)	Heat Pump	(kg)	11.5	11.5	11.5	11.5	11.5	11.5
		Cooling Only	(kg)	11.5	11.5	10.5	11.5	11.5	10.5
	High-pressure switch		(Pa)	OFF: 2.9 ON: 3.73					
Protective devices			(*4)						
Power supply wiring	Unit	MCA(*5)	(A)	98.2			101.5		
		MOCP(*6)	(A)	125			125		
Refrigerant piping	Connecting port diameter	Gas side	(mm)	ø 41.3					
		Liquid side	(mm)	ø 22.2					
		Balance side	(mm)	ø 9.5					
	Connecting method	Gas side	Brazing						
		Liquid side	Flare						
		Balance side	Flare						
	Max. equivation length		(mm)	235					
	Max. real length		(mm)	190					
	Max. total pipe length (Real length) (*7) (mm)		500						
	Max. height difference (*8) (mm)		Outdoor unit is higher than indoor unit : 70						
(*9) (mm)		Outdoor unit is lower than indoor unit: 40							
Control wiring between indoor and outdoor units +		(Up to 1000m)	Shield wire 1.25mm2 x 2 cores						
Central controller wiring		(Up to 2000m)	Shield wire 2.0mm2 x 2 cores						
Max. No. of connected indoor units			48			48			
Sound pressure level	Cooling	(dB(A))	65.5			66.0			
	Heating	(dB(A))	67.5			68.5			
Max. external static pressure			(Pa)	40	40	50	40	40	50
Operation temperature range		Cooling	CDB	-5 to 43					
		Heating	CWB	-20 to 15.5					

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			Equivalent to 46HP			Equivalent to 48HP				
Model name		Heat Pump	MMY-	AP4614HT8-E			AP4814HT8-E			
		Cooling Only	MMY-	AP4614T8-E			AP4814T8-E			
Outdoor unit type			Inverter unit							
Outdoor unit model		Heat Pump	MMY-	MAP1604HT8-E	MAP1604HT8-E	MAP1404HT8-E	MAP1604HT8-E	MAP1604HT8-E	MAP1604HT8-E	
		Cooling Only	MMY-	MAP1604T8-E	MAP1604T8-E	MAP1404T8-E	MAP1604T8-E	MAP1604T8-E	MAP1604T8-E	
Cooling capacity (*1)			(kW)	130.0			135.0			
Heating capacity (*1)			(kW)	145.0			150.0			
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)							
Electrical characteristics (*1)	Cooling	Running current	(A)	59.3			62.4			
		Power consumption	(kW)	38.90			41.10			
		Power factor	(%)	95			95			
		EER (Energy Efficiency Ratio) (kW/kW))	3.34			3.28				
	Heating	Running current	(A)	61.7			66.1			
		Power consumption	(kW)	39.60			42.60			
		Power factor	(%)	93			93			
		EER (Energy Efficiency Ratio) (kW/kW))	3.66			3.52				
	Starting Current		(A)	Soft Start						
Dimension	Packing	Height (mm)	1,887	1,887	1,887	1,887	1,887	1,887		
		Width (mm)	1,282	1,282	1,282	1,282	1,282	1,282		
		Depth (mm)	828	828	828	828	828	828		
	Unit	Height (mm)	1,830	1,830	1,830	1,830	1,830	1,830		
		Width (mm)	1,210	1,210	1,210	1,210	1,210	1,210		
Depth (mm)		780	780	780	780	780	780			
Weight	Packing	Heat Pump (kg)	347	347	347	347	347	347		
		Cooling only (kg)	347	347	347	347	347	347		
	Unit	Heat Pump (kg)	330	330	330	330	330	330		
		Cooling only (kg)	330	330	330	330	330	330		
Colour			Silky shade (Munsell 1Y8.5/0.5)							
Compressor		Type	Hermetic twin rotary compressor							
		Motor output (kW)	3.6 x 3	3.6 x 3	3.0 x 3	3.6 x 3	3.6 x 3	3.6 x 3		
Fan unit		Fan	Propeller fan							
		Motor output (kW)	1.0	1.0	1.0	1.0	1.0	1.0		
		Air volume (m³/h)	13,000	13,000	12,000	13,000	13,000	13,000		
Heat exchanger			Finned tube							
Refrigerant			R410A							
			Charged refrigerant amount(*3)	Heat Pump (kg)	11.5	11.5	11.5	11.5	11.5	11.5
				Cooling Only (kg)	11.5	11.5	11.5	11.5	11.5	11.5
High-pressure switch (Pa)			OFF: 2.9 ON: 3.73							
Protective devices			(*4)							
Power supply wiring		Unit	MCA(*5) (A)	106.2			109.5			
			MOCP(*6) (A)	125			125			
Refrigerant piping	Connecting port diameter	Gas side (mm)	ø 41.3							
		Liquid side (mm)	ø 22.2							
		Balance side (mm)	ø 9.5							
	Connecting method	Gas side	Brazing							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivation length (mm)		185							
	Max. real length (mm)		155							
	Max. total pipe length (Real length) (*7) (mm)		500							
Max. height difference (*8) (mm) (*9) (mm)		Outdoor unit is higher than indoor unit : 70								
		Outdoor unit is lower than indoor unit: 40								
Control wiring between indoor and outdoor units + Central controller wiring		(Up to 1000m)	Shield wire 1.25mm2 x 2 cores							
		(Up to 2000m)	Shield wire 2.0mm2 x 2 cores							
Max. No. of connected indoor units			48			48				
Sound pressure level		Cooling (dB(A))	66.5			67.0				
		Heating (dB(A))	68.5			69.0				
Max. external static pressure (Pa)			40	40	40	40	40	40		
Operation temperature range		Cooling CDB	-5 to 43							
		Heating CWB	-20 to 15.5							

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

High efficiency model (Combination)

Equivalent HP			Equivalent to 16HP		Equivalent to 24HP					
Model name		Heat Pump	MMY-	AP1624HT8-E		AP2424HT8-E				
		Cooling Only	MMY-	AP1624T8-E		AP2424T8-E				
Outdoor unit type			Inverter unit							
Outdoor unit model		Heat Pump	MMY-	MAP0804HT8-E	MAP0804HT8-E	MAP0804HT8-E	MAP0804HT8-E	MAP0804HT8-E		
		Cooling Only	MMY-	MAP0804T8-E	MAP0804T8-E	MAP0804T8-E	MAP0804T8-E	MAP0804T8-E		
Cooling capacity (*1)			(kW)	45.0		68.0				
Heating capacity (*1)			(kW)	50.0		76.5				
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)							
Electrical characteristics (*1)	Cooling	Running current	(A)	17.1		26.0				
		Power consumption	(kW)	10.89		16.58				
		Power factor	(%)	92		92				
		EER (Energy Efficiency Ratio) (kW/kW))	4.13		4.10					
	Heating	Running current	(A)	17.5		27.3				
		Power consumption	(kW)	11.06		17.18				
		Power factor	(%)	91		91				
		EER (Energy Efficiency Ratio) (kW/kW))	4.52		4.45					
	Starting Current		(A)	Soft Start						
Dimension	Packing	Height	(mm)	1,887	1,887	1,887	1,887	1,887		
		Width	(mm)	1,062	1,062	1,062	1,062	1,062		
		Depth	(mm)	828	828	828	828	828		
	Unit	Height	(mm)	1,830	1,830	1,830	1,830	1,830		
		Width	(mm)	990	990	990	990	990		
Depth		(mm)	780	780	780	780	780			
Weight	Packing	Heat Pump	(kg)	257	257	257	257	257		
		Cooling only	(kg)	256	256	256	256	256		
	Unit	Heat Pump	(kg)	242	242	242	242	242		
		Cooling only	(kg)	241	241	241	241	241		
Colour			Silky shade (Munsell 1Y8.5/0.5)							
Compressor		Type	Hermetic twin rotary compressor							
		Motor output	(kW)	2.3 x 2	2.3 x 2	2.3 x 2	2.3 x 2	2.3 x 2		
Fan unit		Fan	Propeller fan							
		Motor output	(kW)	1.0	1.0	1.0	1.0	1.0		
		Air volume	(m³/h)	9,900	9,900	9,900	9,900	9,900		
Heat exchanger			Finned tube							
Refrigerant			R410A							
			Charged refrigerant amount(*3)	Heat Pump	(kg)	11.5	11.5	11.5	11.5	11.5
				Cooling Only	(kg)	10.5	10.5	10.5	10.5	10.5
High-pressure switch			(Pa)	OFF: 2.9 ON: 3.73						
Protective devices			(*4)							
Power supply wiring		Unit	MCA(*5)	(A)	46.9		70.4			
			MOCP(*6)	(A)	63		80			
Refrigerant piping		Connecting port diameter	Gas side	(mm)	ø 28.6		ø 34.9			
			Liquid side	(mm)	ø 15.9		ø 19.1			
			Balance side	(mm)	ø 9.5					
		Connecting method	Gas side	Brazing						
			Liquid side	Flare						
			Balance side	Flare						
		Max. equivation length		(mm)	220		235			
		Max. real length		(mm)	180		190			
		Max. total pipe length (Real length) (*7)		(mm)	300					
Max. height difference (*8) (*9)		(mm) (mm)	Outdoor unit is higher than indoor unit : 70 Outdoor unit is lower than indoor unit: 40							
Control wiring between indoor and outdoor units + Central controller wiring			(Up to 1000m) (Up to 2000m)	Shield wire 1.25mm2 x 2 cores Shield wire 2.0mm2 x 2 cores						
Max. No. of connected indoor units			27			40				
Sound pressure level		Cooling	(dB(A))	58.0		60.0				
		Heating	(dB(A))	59.0		61.0				
Max. external static pressure			(Pa)	60	60	60	60	60		
Operation temperature range		Cooling	CDB	-5 to 43						
		Heating	CWB	-20 to 15.5						

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			Equivalent to 26HP			Equivalent to 28HP			
Model name	Heat Pump	MMY-	AP2624HT8-E			AP2824HT8-E			
	Cooling Only	MMY-	AP2624T8-E			AP2824T8-E			
Outdoor unit type			Inverter unit						
Outdoor unit model	Heat Pump	MMY-	MAP1004HT8-E	MAP0804HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP0804HT8-E	
	Cooling Only	MMY-	MAP1004T8-E	MAP0804T8-E	MAP0804T8-E	MAP1004T8-E	MAP1004T8-E	MAP0804T8-E	
Cooling capacity (*1)		(kW)	73.0			78.5			
Heating capacity (*1)		(kW)	81.5			88.0			
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)						
Electrical characteristics (*1)	Cooling	Running current	(A)	28.5			31.3		
		Power consumption	(kW)	18.31			20.27		
		Power factor	(%)	93			94		
		EER (Energy Efficiency Ratio) (kW/kW))	3.99			3.87			
	Heating	Running current	(A)	29.3			32.3		
		Power consumption	(kW)	18.56			20.53		
		Power factor	(%)	91			92		
		EER (Energy Efficiency Ratio) (kW/kW))	4.39			4.29			
	Starting Current		(A)	Soft Start					
Dimension	Packing	Height	(mm)	1,887	1,887	1,887	1,887	1,887	1,887
		Width	(mm)	1,062	1,062	1,062	1,062	1,062	1,062
		Depth	(mm)	828	828	828	828	828	828
	Unit	Height	(mm)	1,830	1,830	1,830	1,830	1,830	1,830
		Width	(mm)	990	990	990	990	990	990
		Depth	(mm)	780	780	780	780	780	780
Weight	Packing	Heat Pump	(kg)	257	257	257	257	257	257
		Cooling only	(kg)	256	256	256	256	256	256
	Unit	Heat Pump	(kg)	242	242	242	242	242	242
		Cooling only	(kg)	241	241	241	241	241	241
Colour			Silky shade (Munsell 1Y8.5/0.5)						
Compressor	Type	Hermetic twin rotary compressor							
	Motor output	(kW)	3.1 x 2	2.3 x 2	2.3 x 2	3.1 x 2	3.1 x 2	2.3 x 2	
Fan unit	Fan	Propeller fan							
	Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	
	Air volume	(m³/h)	10,500	9,900	9,900	10,500	10,500	9,900	
Heat exchanger			Finned tube						
Refrigerant	Charged refrigerant amount(*3)	Heat Pump	(kg)	11.5	11.5	11.5	11.5	11.5	11.5
		Cooling Only	(kg)	10.5	10.5	10.5	10.5	10.5	10.5
	High-pressure switch		(Pa)	OFF: 2.9 ON: 3.73					
Protective devices			(**4)						
Power supply wiring	Unit	MCA(*5)	(A)	72.4			74.5		
		MOCP(*6)	(A)	80			100		
Refrigerant piping	Connecting port diameter	Gas side	(mm)	ø 34.9					
		Liquid side	(mm)	ø 19.1					
		Balance side	(mm)	ø 9.5					
	Connecting method	Gas side	Brazing						
		Liquid side	Flare						
		Balance side	Flare						
	Max. equivation length		(mm)	235					
	Max. real length		(mm)	190					
	Max. total pipe length (Real length) (*7)		(mm)	300					
Max. height difference		(*8) (mm)	Outdoor unit is higher than indoor unit : 70						
		(*9) (mm)	Outdoor unit is lower than indoor unit: 40						
Control wiring between indoor and outdoor units + Central controller wiring		(Up to 1000m)	Shield wire 1.25mm2 x 2 cores						
		(Up to 2000m)	Shield wire 2.0mm2 x 2 cores						
Max. No. of connected indoor units			43			47			
Sound pressure level	Cooling	(dB(A))	60.5			61.5			
	Heating	(dB(A))	61.5			62.5			
Max. external static pressure			(Pa)	60	60	60	60	60	60
Operation temperature range		Cooling	CDB	-5 to 43					
		Heating	CWB	-20 to 15.5					

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.



Equivalent HP			Equivalent to 30HP			Equivalent to 32HP				
Model name	Heat Pump	MMY-	AP3024HT8-E			AP3224HT8-E				
	Cooling Only	MMY-	AP3024T8-E			AP3224T8-E				
Outdoor unit type			Inverter unit							
Outdoor unit model	Heat Pump	MMY-	MAP1004HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP0804HT8-E	MAP0804HT8-E	MAP0804HT8-E	MAP0804HT8-E	
	Cooling Only	MMY-	MAP1004T8-E	MAP1004T8-E	MAP1004T8-E	MAP0804T8-E	MAP0804T8-E	MAP0804T8-E	MAP0804T8-E	
Cooling capacity (*1)		(kW)	85.0			90.0				
Heating capacity (*1)		(kW)	95.0			100.0				
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)							
Electrical characteristics (*1)	Cooling	Running current	(A)	34.9			34.2			
		Power consumption	(kW)	22.75			21.79			
		Power factor	(%)	94			92			
		EER (Energy Efficiency Ratio) (kW/kW))	3.74			4.13				
	Heating	Running current	(A)	35.6			35.1			
		Power consumption	(kW)	22.71			22.12			
		Power factor	(%)	92			91			
		EER (Energy Efficiency Ratio) (kW/kW))	4.18			4.52				
Starting Current		(A)	Soft Start							
Dimension	Packing	Height	(mm)	1,887	1,887	1,887	1,887	1,887	1,887	1,887
		Width	(mm)	1,062	1,062	1,062	1,062	1,062	1,062	1,062
		Depth	(mm)	828	828	828	828	828	828	828
	Unit	Height	(mm)	1,830	1,830	1,830	1,830	1,830	1,830	1,830
		Width	(mm)	990	990	990	990	990	990	990
		Depth	(mm)	780	780	780	780	780	780	780
Weight	Packing	Heat Pump	(kg)	257	257	257	257	257	257	257
		Cooling only	(kg)	256	256	256	256	256	256	256
	Unit	Heat Pump	(kg)	242	242	242	242	242	242	242
		Cooling only	(kg)	241	241	241	241	241	241	241
Colour			Silky shade (Munsell 1Y8.5/0.5)							
Compressor	Type		Hermetic twin rotary compressor							
	Motor output		(kW)	3.1 x 2	3.1 x 2	3.1 x 2	2.3 x 2	2.3 x 2	2.3 x 2	2.3 x 2
Fan unit	Fan		Propeller fan							
	Motor output		(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume		(m³/h)	10,500	10,500	10,500	9,900	9,900	9,900	9,900
Heat exchanger			Finned tube							
Refrigerant	Charged refrigerant amount(*3)	Heat Pump	(kg)	11.5	11.5	11.5	11.5	11.5	11.5	11.5
		Cooling Only	(kg)	10.5	10.5	10.5	10.5	10.5	10.5	10.5
	High-pressure switch		(Pa)	OFF: 2.9 ON: 3.73						
Protective devices			(*4)							
Power supply wiring	Unit	MCA(*5)	(A)	76.5			93.8			
		MOCP(*6)	(A)	100			125			
Refrigerant piping	Connecting port diameter	Gas side	(mm)	ø 34.9						
		Liquid side	(mm)	ø 19.1						
		Balance side	(mm)	ø 9.5						
	Connecting method	Gas side	Brazing							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivation length		(mm)	235						
	Max. real length		(mm)	190						
	Max. total pipe length (Real length) (*7) (mm)		300							
Max. height difference (*8) (mm)		Outdoor unit is higher than indoor unit : 70								
(*9) (mm)		Outdoor unit is lower than indoor unit: 40								
Control wiring between indoor and outdoor units +		(Up to 1000m)	Shield wire 1.25mm2 x 2 cores							
Central controller wiring		(Up to 2000m)	Shield wire 2.0mm2 x 2 cores							
Max. No. of connected indoor units			48			48				
Sound pressure level	Cooling	(dB(A))	62.0			61.0				
	Heating	(dB(A))	63.0			62.0				
Max. external static pressure			(Pa)	60	60	60	60	60	60	60
Operation temperature range		Cooling	CDB	-5 to 43						
		Heating	CWB	-20 to 15.5						

Note

- *1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.



Equivalent HP			Equivalent to 34HP				Equivalent to 36HP					
Model name	Heat Pump	MMY-	AP3424HT8-E				AP3624HT8-E					
	Cooling Only	MMY-	AP3424T8-E				AP3624T8-E					
Outdoor unit type			Inverter unit									
Outdoor unit model	Heat Pump	MMY-	MAP1004HT8-E	MAP0804HT8-E	MAP0804HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP0804HT8-E	MAP0804HT8-E		
	Cooling Only	MMY-	MAP1004T8-E	MAP0804T8-E	MAP0804T8-E	MAP0804T8-E	MAP1004T8-E	MAP1004T8-E	MAP0804T8-E	MAP0804T8-E		
Cooling capacity (*1)			(kW)				96.0				101.0	
Heating capacity (*1)			(kW)				108.0				113.0	
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)									
Electrical characteristics (*1)	Cooling	Running current (A)	37.4				39.9					
		Power consumption (kW)	24.00				25.72					
		Power factor (%)	93				93					
		EER (Energy Efficiency Ratio) (kW/kW))	4.00				3.93					
	Heating	Running current (A)	39.0				41.1					
		Power consumption (kW)	24.70				26.06					
		Power factor (%)	91				92					
		EER (Energy Efficiency Ratio) (kW/kW))	4.37				4.34					
	Starting Current (A)		Soft Start									
Dimension	Packing	Height (mm)	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887		
		Width (mm)	1,062	1,062	1,062	1,062	1,062	1,062	1,062	1,062		
		Depth (mm)	828	828	828	828	828	828	828	828		
	Unit	Height (mm)	1,830	1,830	1,830	1,830	1,830	1,830	1,830	1,830		
		Width (mm)	990	990	990	990	990	990	990	990		
Depth (mm)		780	780	780	780	780	780	780	780			
Weight	Packing	Heat Pump (kg)	257	257	257	257	257	257	257	257		
		Cooling only (kg)	256	256	256	256	256	256	256	256		
	Unit	Heat Pump (kg)	242	242	242	242	242	242	242	242		
		Cooling only (kg)	241	241	241	241	241	241	241	241		
Colour			Silky shade (Munsell 1Y8.5/0.5)									
Compressor	Type	Hermetic twin rotary compressor										
	Motor output (kW)	3.1 x 2	2.3 x 2	2.3 x 2	2.3 x 2	3.1 x 2	3.1 x 2	2.3 x 2	2.3 x 2			
Fan unit	Fan	Propeller fan										
	Motor output (kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
	Air volume (m³/h)	10,500	9,900	9,900	9,900	10,500	10,500	9,900	9,900			
Heat exchanger			Finned tube									
Refrigerant	Charged refrigerant amount(*3)	Heat Pump (kg)	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5		
		Cooling Only (kg)	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5		
	High-pressure switch (Pa)		OFF: 2.9 ON: 3.73									
Protective devices			(*4)									
Power supply wiring	Unit	MCA(*5) (A)	95.9				97.9					
		MOCP(*6) (A)	125				125					
Refrigerant piping	Connecting port diameter	Gas side (mm)	ø 34.9				ø 41.3					
		Liquid side (mm)	ø 19.1				ø 22.2					
		Balance side (mm)	ø 9.5									
	Connecting method	Gas side	Brazing									
		Liquid side	Flare									
		Balance side	Flare									
	Max. equivation length (mm)		235									
	Max. real length (mm)		190									
	Max. total pipe length (Real length) (*7) (mm)		500									
Max. height difference (*8) (mm)		Outdoor unit is higher than indoor unit : 70										
Max. height difference (*9) (mm)		Outdoor unit is lower than indoor unit: 40										
Control wiring between indoor and outdoor units + Central controller wiring		(Up to 1000m)	Shield wire 1.25mm2 x 2 cores									
		(Up to 2000m)	Shield wire 2.0mm2 x 2 cores									
Max. No. of connected indoor units			48				48					
Sound pressure level	Cooling (dB(A))	62.0				62.5						
	Heating (dB(A))	63.0				63.5						
Max. external static pressure (Pa)			60	60	60	60	60	60	60	60		
Operation temperature range		Cooling CDB	-5 to 43									
		Heating CWB	-20 to 15.5									

Note
*1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			Equivalent to 38HP				Equivalent to 40HP					
Model name	Heat Pump	MMY-	AP3824HT8-E				AP4024HT8-E					
	Cooling Only	MMY-	AP3824T8-E				AP4024T8-E					
Outdoor unit type			Inverter unit									
Outdoor unit model	Heat Pump	MMY-	MAP1004HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP1004HT8-E		
	Cooling Only	MMY-	MAP1004T8-E	MAP1004T8-E	MAP1004T8-E	MAP0804T8-E	MAP1004T8-E	MAP1004T8-E	MAP1004T8-E	MAP1004T8-E		
Cooling capacity (*1)			(kW)				106.5				112.0	
Heating capacity (*1)			(kW)				119.5				127.0	
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)									
Electrical characteristics (*1)	Cooling	Running current	(A)				42.7				45.5	
		Power consumption	(kW)				27.68				29.64	
		Power factor	(%)				94				94	
		EER (Energy Efficiency Ratio) (kW/kW))					3.85				3.78	
	Heating	Running current	(A)				44.1				47.7	
		Power consumption	(kW)				28.03				30.42	
		Power factor	(%)				92				92	
		EER (Energy Efficiency Ratio) (kW/kW))					4.26				4.17	
	Starting Current		(A)				Soft Start					
Dimension	Packing	Height	(mm)		1,887	1,887	1,887	1,887	1,887	1,887	1,887	
		Width	(mm)		1,062	1,062	1,062	1,062	1,062	1,062	1,062	
		Depth	(mm)		828	828	828	828	828	828	828	
	Unit	Height	(mm)		1,830	1,830	1,830	1,830	1,830	1,830	1,830	
		Width	(mm)		990	990	990	990	990	990	990	
Depth		(mm)		780	780	780	780	780	780	780		
Weight	Packing	Heat Pump	(kg)		257	257	257	257	257	257	257	
		Cooling only	(kg)		256	256	256	256	256	256	256	
	Unit	Heat Pump	(kg)		242	242	242	242	242	242	242	
		Cooling only	(kg)		241	241	241	241	241	241	241	
Colour			Silky shade (Munsell 1Y8.5/0.5)									
Compressor	Type	Hermetic twin rotary compressor										
	Motor output	(kW)		3.1 x 2	3.1 x 2	3.1 x 2	2.3 x 2	3.1 x 2	3.1 x 2	3.1 x 2	3.1 x 2	
Fan unit	Fan	Propeller fan										
	Motor output	(kW)		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
	Air volume	(m³/h)		10,500	10,500	10,500	9,900	10,500	10,500	10,500	10,500	
Heat exchanger			Finned tube									
Refrigerant	Charged refrigerant amount(*3)	Heat Pump	(kg)		11.5	11.5	11.5	11.5	11.5	11.5	11.5	
		Cooling Only	(kg)		10.5	10.5	10.5	10.5	10.5	10.5	10.5	
	High-pressure switch		(Pa)		OFF: 2.9 ON: 3.73							
Protective devices			(*4)									
Power supply wiring	Unit	MCA(*5)	(A)		100.0				102.0			
		MOCP(*6)	(A)		125				125			
Refrigerant piping	Connecting port diameter	Gas side	(mm)		ø 41.3							
		Liquid side	(mm)		ø 22.2							
		Balance side	(mm)		ø 9.5							
	Connecting method	Gas side	Brazing									
		Liquid side	Flare									
		Balance side	Flare									
	Max. equivation length		(mm)		235							
	Max. real length		(mm)		190							
	Max. total pipe length (Real length) (*7)		(mm)		500							
Max. height difference (*8) (*9)		(mm)		Outdoor unit is higher than indoor unit : 70								
Control wiring between indoor and outdoor units + Central controller wiring			(Up to 1000m) (Up to 2000m)		Shield wire 1.25mm2 x 2 cores							
Max. No. of connected indoor units			48				48					
Sound pressure level	Cooling	(dB(A))		63.0				63.0				
	Heating	(dB(A))		64.0				64.0				
Max. external static pressure			(Pa)		60	60	60	60	60	60	60	
Operation temperature range		Cooling	CDB		-5 to 43							
		Heating	CWB		-20 to 15.5							

Note
*1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

Equivalent HP			Equivalent to 42HP				Equivalent to 44HP				
Model name		Heat Pump	MMY-	AP4224HT8-E				AP4424HT8-E			
		Cooling Only	MMY-	AP4224T8-E				AP4424T8-E			
Outdoor unit type			Inverter unit								
Outdoor unit model		Heat Pump	MMY-	MAP1204HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP1004HT8-E	MAP1204HT8-E	MAP1204HT8-E	MAP1004HT8-E	MAP1004HT8-E
		Cooling Only	MMY-	MAP1204T8-E	MAP1004T8-E	MAP1004T8-E	MAP1004T8-E	MAP1204T8-E	MAP1204T8-E	MAP1004T8-E	MAP1004T8-E
Cooling capacity (*1)			(kW)	118.0				123.5			
Heating capacity (*1)			(kW)	132.0				138.0			
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)								
Electrical characteristics (*1)	Cooling	Running current	(A)	49.2				52.5			
		Power consumption	(kW)	32.04				34.19			
		Power factor	(%)	94				94			
		EER (Energy Efficiency Ratio) (kW/kW))	3.68				3.61				
	Heating	Running current	(A)	51.3				55.5			
		Power consumption	(kW)	32.70				35.40			
		Power factor	(%)	92				92			
		EER (Energy Efficiency Ratio) (kW/kW))	4.04				3.90				
	Starting Current		(A)	Soft Start							
Dimension	Packing	Height	(mm)	1,887	1,887	1,887	1,887	1,887	1,887	1,887	1,887
		Width	(mm)	1,062	1,062	1,062	1,062	1,062	1,062	1,062	1,062
		Depth	(mm)	828	828	828	828	828	828	828	828
	Unit	Height	(mm)	1,830	1,830	1,830	1,830	1,830	1,830	1,830	1,830
		Width	(mm)	990	990	990	990	990	990	990	990
Depth		(mm)	780	780	780	780	780	780	780	780	
Weight	Packing	Heat Pump	(kg)	257	257	257	257	257	257	257	257
		Cooling only	(kg)	256	256	256	256	256	256	256	256
	Unit	Heat Pump	(kg)	242	242	242	242	242	242	242	242
		Cooling only	(kg)	241	241	241	241	241	241	241	241
Colour			Silky shade (Munsell 1Y8.5/0.5)								
Compressor		Type	Hermetic twin rotary compressor								
		Motor output	(kW)	4.2 x 2	3.1 x 2	3.1 x 2	3.1 x 2	4.2 x 2	4.2 x 2	3.1 x 2	3.1 x 2
Fan unit		Fan	Propeller fan								
		Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
		Air volume	(m³/h)	11,600	10,500	10,500	10,500	11,600	11,600	10,500	10,500
Heat exchanger			Finned tube								
Refrigerant			R410A								
		Charged refrigerant amount(*3)	Heat Pump	(kg)	11.5	11.5	11.5	11.5	11.5	11.5	11.5
			Cooling Only	(kg)	10.5	10.5	10.5	10.5	10.5	10.5	10.5
High-pressure switch			(Pa)	OFF: 2.9 ON: 3.73							
Protective devices			(*4)								
Power supply wiring		Unit	MCA(*5)	(A)	105.0				108.0		
			MOCP(*6)	(A)	125				125		
Refrigerant piping	Connecting port diameter	Gas side	(mm)	ø 41.3							
		Liquid side	(mm)	ø 22.2							
		Balance side	(mm)	ø 9.5							
	Connecting method	Gas side	Brazing								
		Liquid side	Flare								
		Balance side	Flare								
	Max. equivation length		(mm)	235							
	Max. real length		(mm)	190							
	Max. total pipe length (Real length) (*7)		(mm)	500							
	Max. height difference (*8)		(mm)	Outdoor unit is higher than indoor unit : 70							
		(*9)	(mm)	Outdoor unit is lower than indoor unit: 40							
Control wiring between indoor and outdoor units + Central controller wiring			(Up to 1000m)	Shield wire 1.25mm2 x 2 cores							
			(Up to 2000m)	Shield wire 2.0mm2 x 2 cores							
Max. No. of connected indoor units			48				48				
Sound pressure level		Cooling	(dB(A))	64.0				64.5			
		Heating	(dB(A))	65.5				66.5			
Max. external static pressure			(Pa)	50	60	60	60	50	50	60	60
Operation temperature range		Cooling	CDB	-5 to 43							
		Heating	CWB	-20 to 15.5							

Note

- *1: Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2: The source voltage must not fluctuate more than ±10%.
*3: The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4: Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5: Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6: MOCP : Maximum Overcurrent Protection(Amps)
*7: The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8: Set 50m or less if the height difference between indoor units exceeds 3m.
*9: Set 30m or less if the height difference between indoor units exceeds 3m.

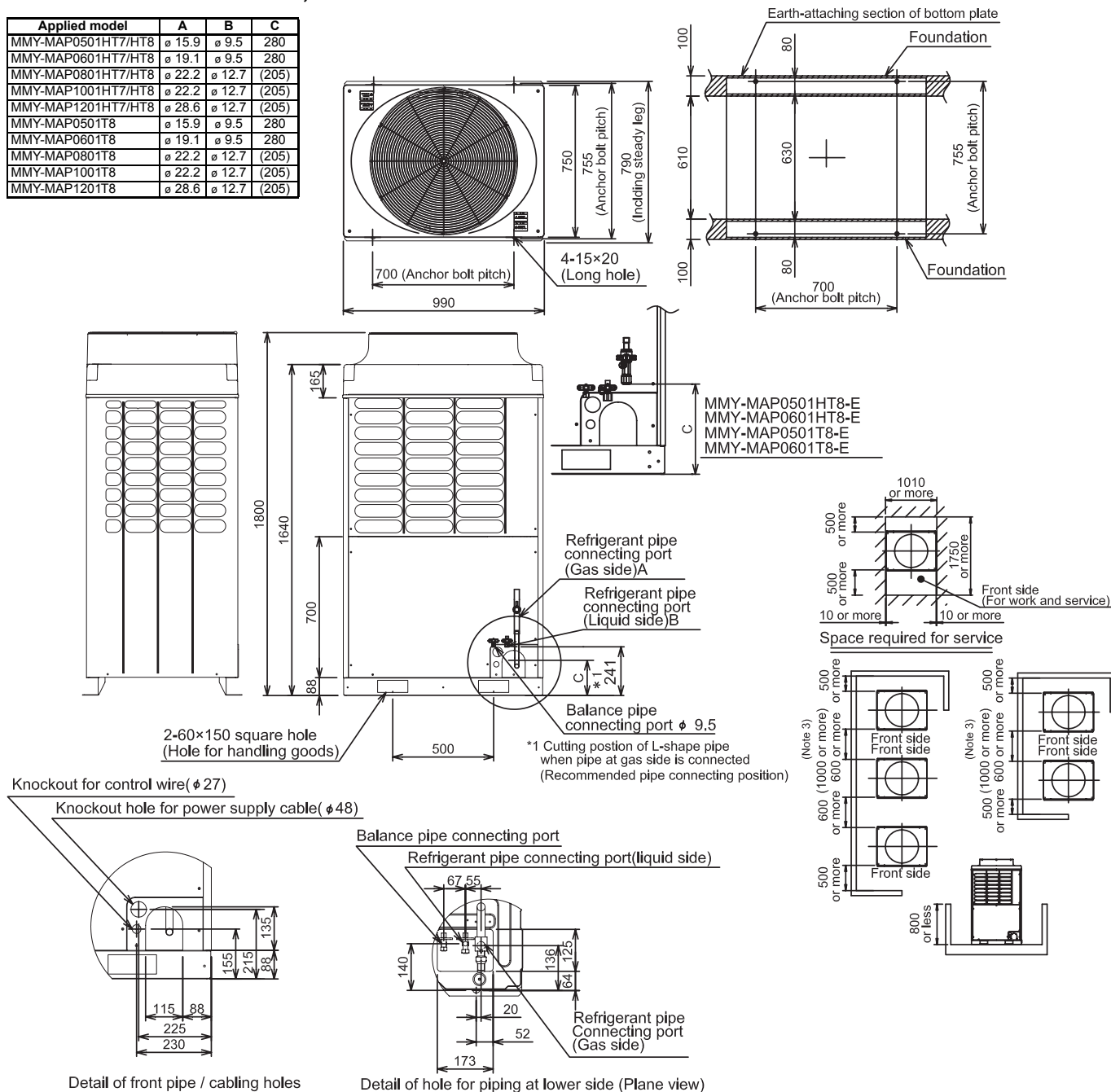
Equivalent HP			Equivalent to 46HP				Equivalent to 48HP					
Model name	Heat Pump	MMY-	AP4624HT8-E				AP4824HT8-E					
	Cooling Only	MMY-	AP4624T8-E				AP4824T8-E					
Outdoor unit type			Inverter unit									
Outdoor unit model	Heat Pump	MMY-	MAP1204HT8-E	MAP1204HT8-E	MAP1204HT8-E	MAP1004HT8-E	MAP1204HT8-E	MAP1204HT8-E	MAP1204HT8-E	MAP1204HT8-E		
	Cooling Only	MMY-	MAP1204T8-E	MAP1204T8-E	MAP1204T8-E	MAP1004T8-E	MAP1204T8-E	MAP1204T8-E	MAP1204T8-E	MAP1204T8-E		
Cooling capacity (*1)			(kW)				130.0				135.0	
Heating capacity (*1)			(kW)				145.0				150.0	
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)									
Electrical characteristics (*1)	Cooling	Running current	(A)				56.6				59.5	
		Power consumption	(kW)				36.88				38.76	
		Power factor	(%)				94				94	
		EER (Energy Efficiency Ratio) (kW/kW))					3.52				3.48	
	Heating	Running current	(A)				60.5				64.0	
		Power consumption	(kW)				38.57				40.80	
		Power factor	(%)				92				92	
		EER (Energy Efficiency Ratio) (kW/kW))					3.76				3.68	
	Starting Current		(A)				Soft Start					
Dimension	Packing	Height	(mm)		1,887	1,887	1,887	1,887	1,887	1,887	1,887	
		Width	(mm)		1,062	1,062	1,062	1,062	1,062	1,062	1,062	
		Depth	(mm)		828	828	828	828	828	828	828	
	Unit	Height	(mm)		1,830	1,830	1,830	1,830	1,830	1,830	1,830	
		Width	(mm)		990	990	990	990	990	990	990	
Depth		(mm)		780	780	780	780	780	780	780		
Weight	Packing	Heat Pump	(kg)		257	257	257	257	257	257	257	
		Cooling only	(kg)		256	256	256	256	256	256	256	
	Unit	Heat Pump	(kg)		242	242	242	242	242	242	242	
		Cooling only	(kg)		241	241	241	241	241	241	241	
Colour			Silky shade (Munsell 1Y8.5/0.5)									
Compressor	Type	Hermetic twin rotary compressor										
	Motor output	(kW)		4.2 x 2	4.2 x 2	4.2 x 2	3.1 x 2	4.2 x 2	4.2 x 2	4.2 x 2	4.2 x 2	
Fan unit	Fan	Propeller fan										
	Motor output	(kW)		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
	Air volume	(m³/h)		11,600	11,600	11,600	10,500	11,600	11,600	11,600	11,600	
Heat exchanger			Finned tube									
Refrigerant	Charged refrigerant amount(*3)	Heat Pump	(kg)		11.5	11.5	11.5	11.5	11.5	11.5	11.5	
		Cooling Only	(kg)		10.5	10.5	10.5	10.5	10.5	10.5	10.5	
	High-pressure switch		(Pa)		OFF: 2.9 ON: 3.73							
Protective devices			(*4)									
Power supply wiring	Unit	MCA(*5)	(A)		111.0				114.0			
		MOCP(*6)	(A)		125				125			
Refrigerant piping	Connecting port diameter	Gas side	(mm)		ø 41.3							
		Liquid side	(mm)		ø 22.2							
		Balance side	(mm)		ø 9.5							
	Connecting method	Gas side	Brazing									
		Liquid side	Flare									
		Balance side	Flare									
	Max. equivation length		(mm)		185							
	Max. real length		(mm)		155							
	Max. total pipe length (Real length) (*7)		(mm)		500							
Max. height difference (*8) (*9)		(mm)		Outdoor unit is higher than indoor unit : 70								
Control wiring between indoor and outdoor units + Central controller wiring			(Up to 1000m) (Up to 2000m)		Shield wire 1.25mm2 x 2 cores							
Max. No. of connected indoor units			48				48					
Sound pressure level	Cooling	(dB(A))		65.0				65.0				
	Heating	(dB(A))		67.5				68.0				
Max. external static pressure			(Pa)		50	50	50	60	50	50	50	
Operation temperature range		Cooling	CDB		-5 to 43							
		Heating	CWB		-20 to 15.5							

Note
*1 : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.
*2 : The source voltage must not fluctuate more than ±10%.
*3 : The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
*4 : Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / PC board fuse
*5 : Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*6 : MOCP : Maximum Overcurrent Protection(Amps)
*7 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.
*8 : Set 50m or less if the height difference between indoor units exceeds 3m.
*9 : Set 30m or less if the height difference between indoor units exceeds 3m.

11-1-2. Dimensional drawing Single unit

Model : MMY-MAP0501HT8-E, MAP0501T8-E (SMMS)
 MMY-MAP0601HT8-E, MAP0601T8-E
 MMY-MAP0801HT8-E, MAP0801T8-E
 MMY-MAP1001HT8-E, MAP1001T8-E
 MMY-MAP1201HT8-E, MAP1201T8-E

Applied model	A	B	C
MMY-MAP0501HT7/HT8	ø 15.9	ø 9.5	280
MMY-MAP0601HT7/HT8	ø 19.1	ø 9.5	280
MMY-MAP0801HT7/HT8	ø 22.2	ø 12.7	(205)
MMY-MAP1001HT7/HT8	ø 22.2	ø 12.7	(205)
MMY-MAP1201HT7/HT8	ø 28.6	ø 12.7	(205)
MMY-MAP0501T8	ø 15.9	ø 9.5	280
MMY-MAP0601T8	ø 19.1	ø 9.5	280
MMY-MAP0801T8	ø 22.2	ø 12.7	(205)
MMY-MAP1001T8	ø 22.2	ø 12.7	(205)
MMY-MAP1201T8	ø 28.6	ø 12.7	(205)



(Note)

- 1.If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
- 2.Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
- 3.Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.

Applied model	A
MMY-MAP0804 type	ø 22.2
MMY-MAP1004 type	ø 22.2
MMY-MAP1204 type	ø 28.6

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

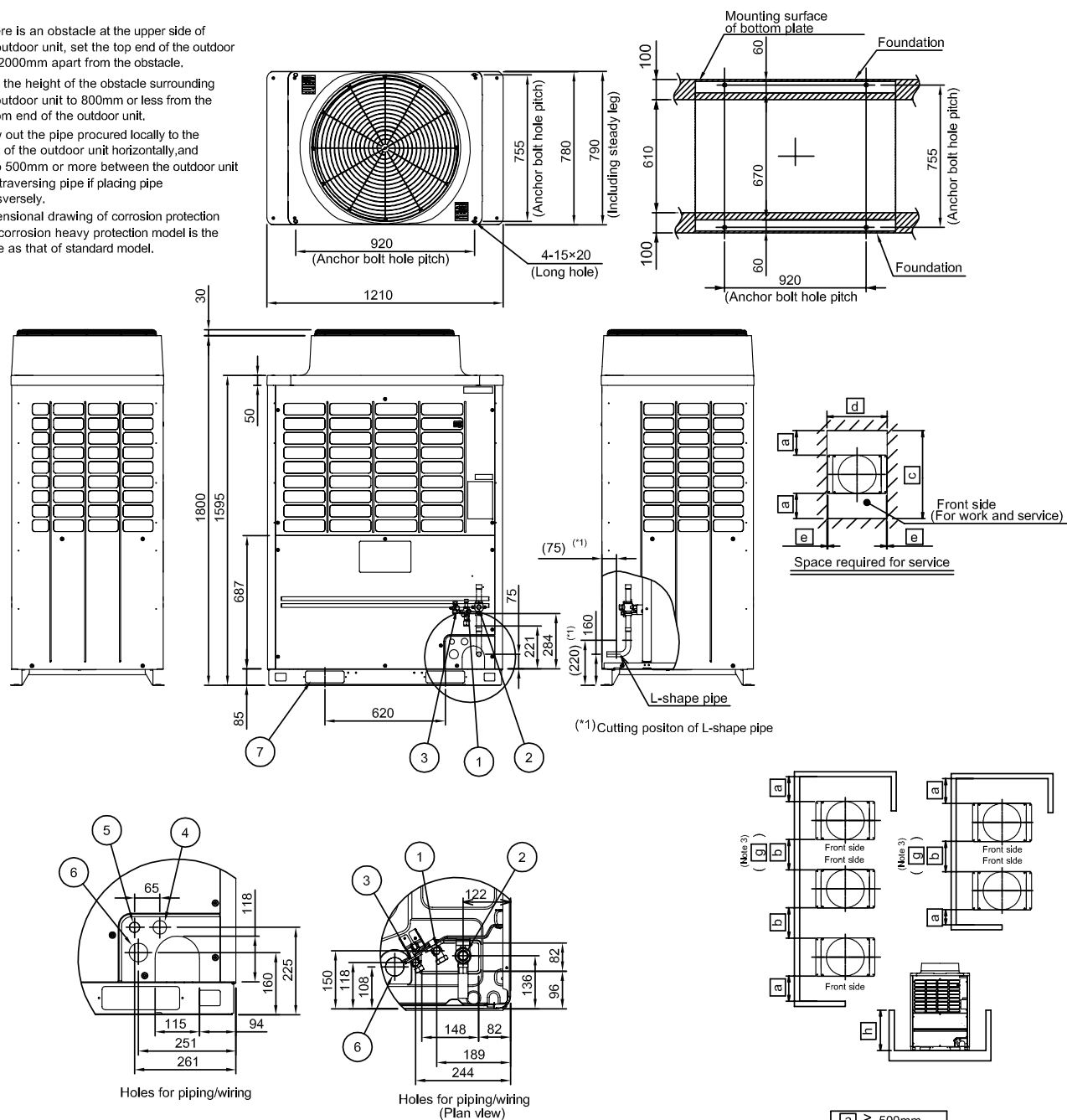


No	Parts name	Remarks
①	Liquid pipe connection port	φ12.7
②	Gas pipe connection port	φA
③	Balance pipe connection port	φ9.5
④	Knockout hole for power wiring 1	φ35
⑤	Knockout hole for control wiring	φ27
⑥	Knockout hole for power wiring 2	φ48
⑦	Square hole (for freight handling)	2-60X200

Model : MMY-MAP1404HT8-E, MAP1404T8-E MMY-MAP1604HT8-E, MAP1604T8-E

(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.



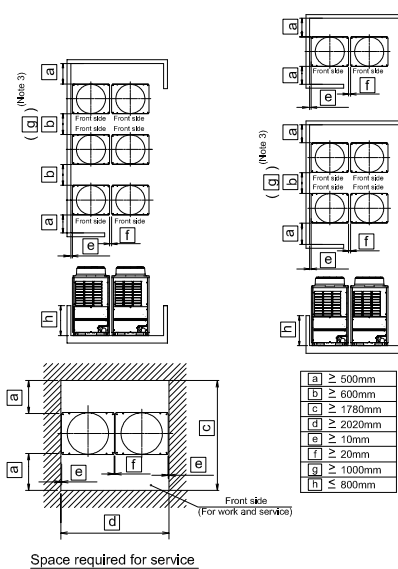
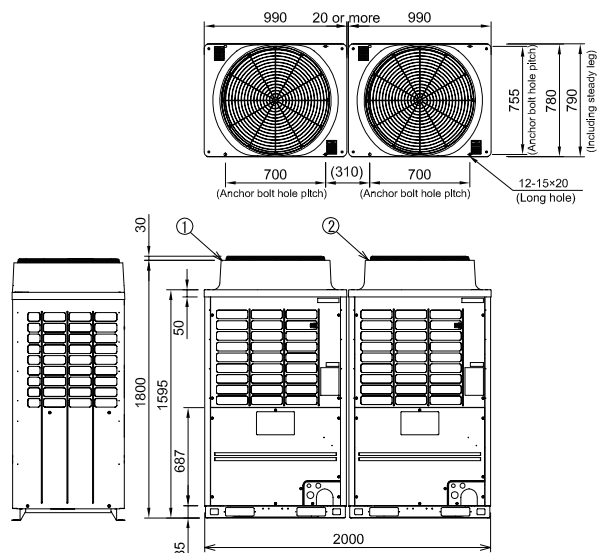
No	Parts name	Remarks
①	Liquid pipe connection port	Φ15.9
②	Gas pipe connection port	Φ28.6
③	Balance pipe connection port	Φ9.5
④	Knockout hole for power wiring 1	Φ35
⑤	Knockout hole for control wiring	Φ27
⑥	Knockout hole for power wiring 2	Φ48
⑦	Square hole (for freight handling)	2-60X200

a	≥ 500mm
b	≥ 600mm
c	≥ 1780mm
d	≥ 1230mm
e	≥ 10mm
g	≥ 1000mm
h	≤ 800mm

Combination

Model	Outdoor unit	
	(1) Header unit	(2) Follower unit
MMY-AP1814HT8-E	MMY-MAP1004HT8-E	MMY-MAP0804HT8-E
MMY-AP2014HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E
MMY-AP2214HT8-E	MMY-MAP1204HT8-E	MMY-MAP1004HT8-E
MMY-AP2414HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E
MMY-AP1624HT8-E	MMY-MAP0804HT8-E	MMY-MAP0801HT8-E

Two units connected

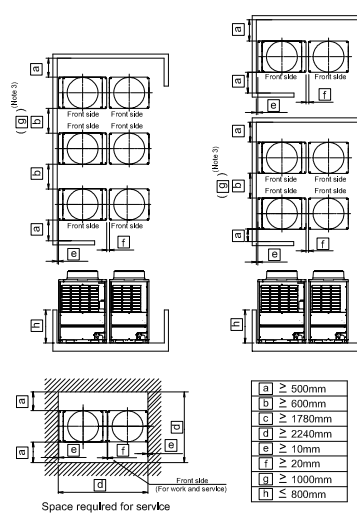
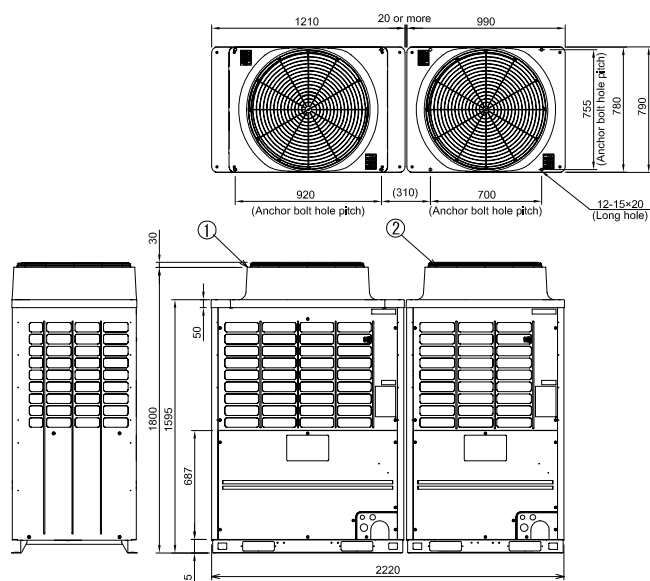


(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ②)
5. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

Model	Outdoor unit	
	(1) Header unit	(2) Follower unit
MMY-AP2614HT8-E	MMY-MAP1604HT8-E	MMY-MAP1004HT8-E
MMY-AP2814HT8-E	MMY-MAP1604HT8-E	MMY-MAP1204HT8-E

Two units connected

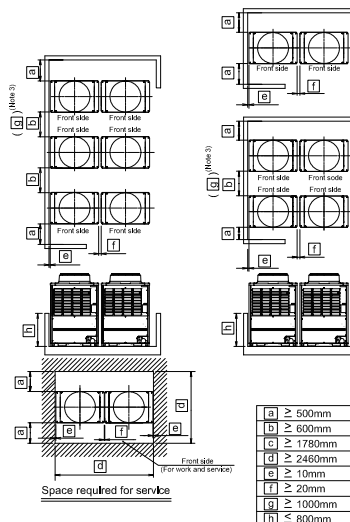
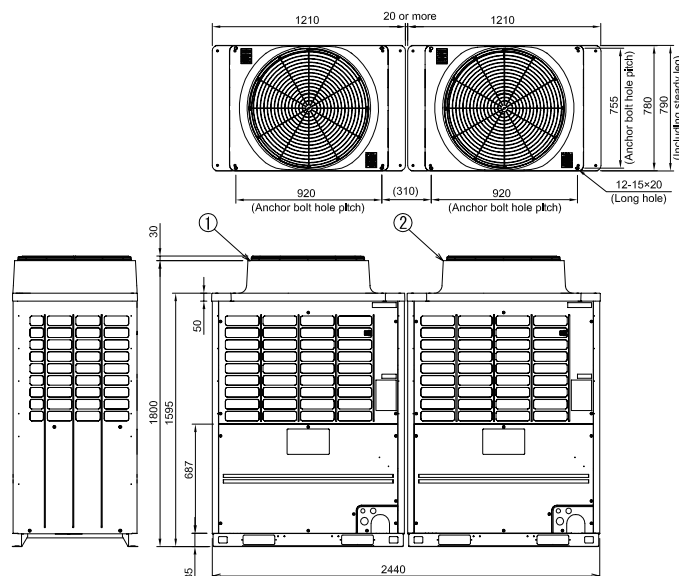


(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ②)
5. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

Model	Outdoor unit	
	(1) Header unit	(2) Follower unit
MMY-AP3014HT8-E	MMY-MAP1604HT8-E	MMY-MAP1404HT8-E
MMY-AP3214HT8-E	MMY-MAP1604HT8-E	MMY-MAP1604HT8-E

Two units connected



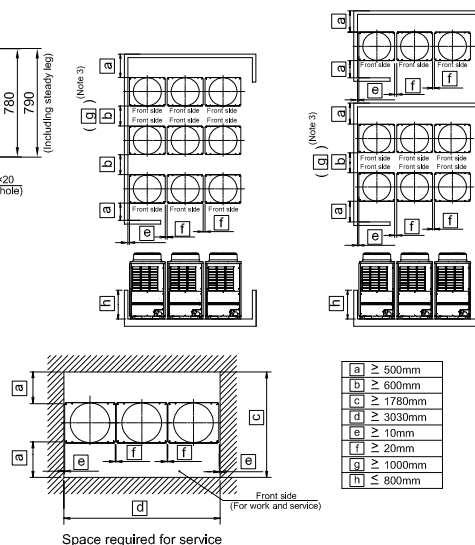
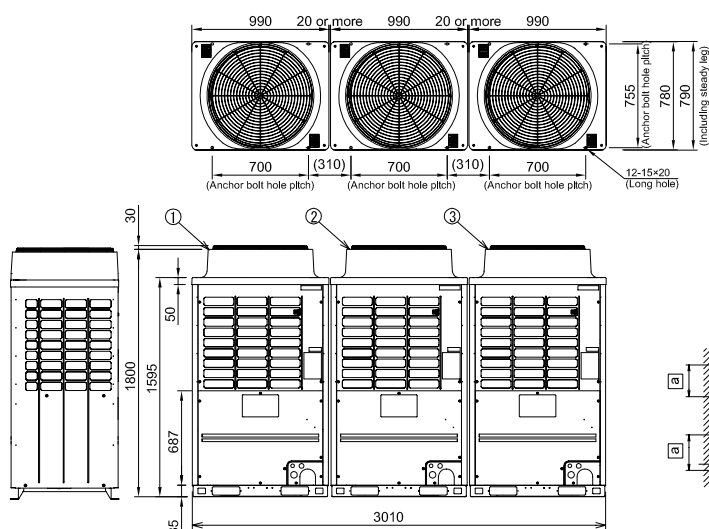
(Unit:mm)

(Note)

- If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
- Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
- Draw out the pipe procured locally to the front of the outdoor unit horizontally and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
- Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ②)
- Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

Model	Outdoor unit		
	(1) Header unit	(2) Follower unit	(3) Header unit
MMY-AP3414HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E	MMY-MAP1004HT8-E
MMY-AP3614HT8-E	MMY-MAP1204HT8-E	MMY-MAP1004HT8-E	MMY-MAP1204HT8-E
MMY-AP2424HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E
MMY-AP2624HT8-E	MMY-MAP1004HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E
MMY-AP2824HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E	MMY-MAP0804HT8-E
MMY-AP3024HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E

Three units connected



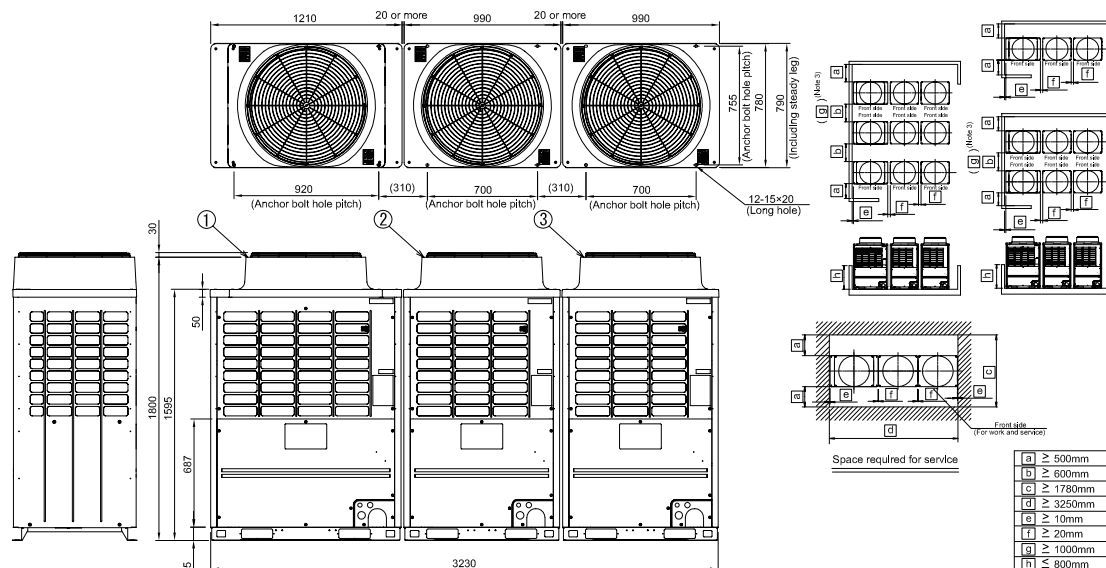
(Unit:mm)

(Note)

- If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
- Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
- Draw out the pipe procured locally to the front of the outdoor unit horizontally and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
- Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ② ≥ Follower unit ③)
- Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

Model	Outdoor unit		
	(1) Header unit	(2) Follower unit	(3) Follower unit
MMY-AP3814HT8-E	MMY-MAP1604HT8-E	MMY-MAP1204HT8-E	MMY-MAP1004HT8-E
MMY-AP4014HT8-E	MMY-MAP1604HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E

Three units connected



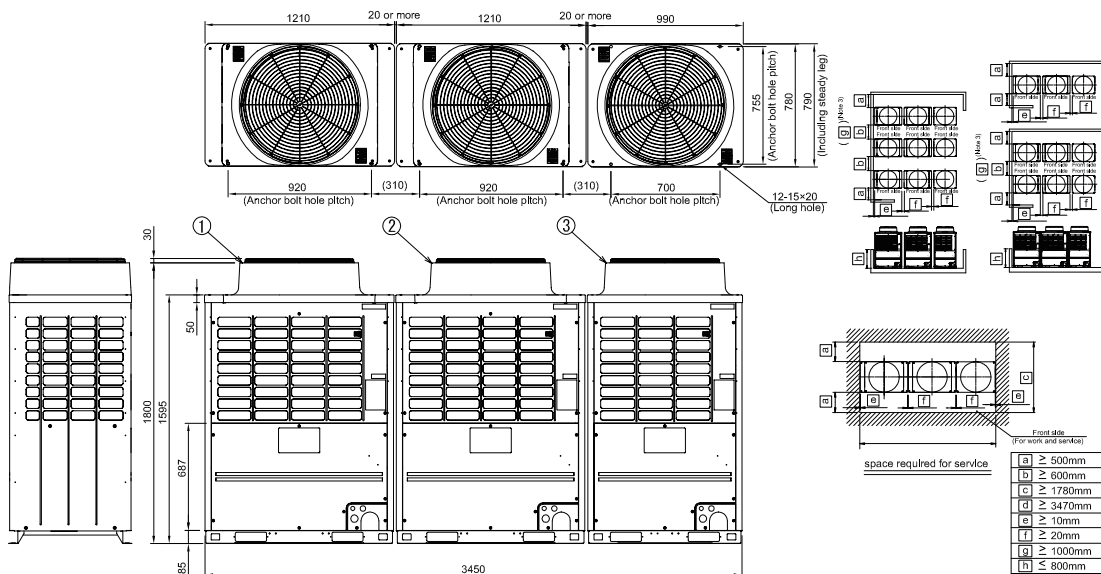
(Note)

- If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
- Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
- Draw out the pipe procured locally to the front of the outdoor unit horizontally and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
- Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ② ≥ Follower unit ③)
- Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

(Unit:mm)

Model	Outdoor unit		
	(1) Header unit	(2) Follower unit	(3) Follower unit
MMY-AP4214HT8-E	MMY-MAP1604HT8-E	MMY-MAP1404HT8-E	MMY-MAP1204HT8-E
MMY-AP4414HT8-E	MMY-MAP1604HT8-E	MMY-MAP1604HT8-E	MMY-MAP1204HT8-E

Three units connected



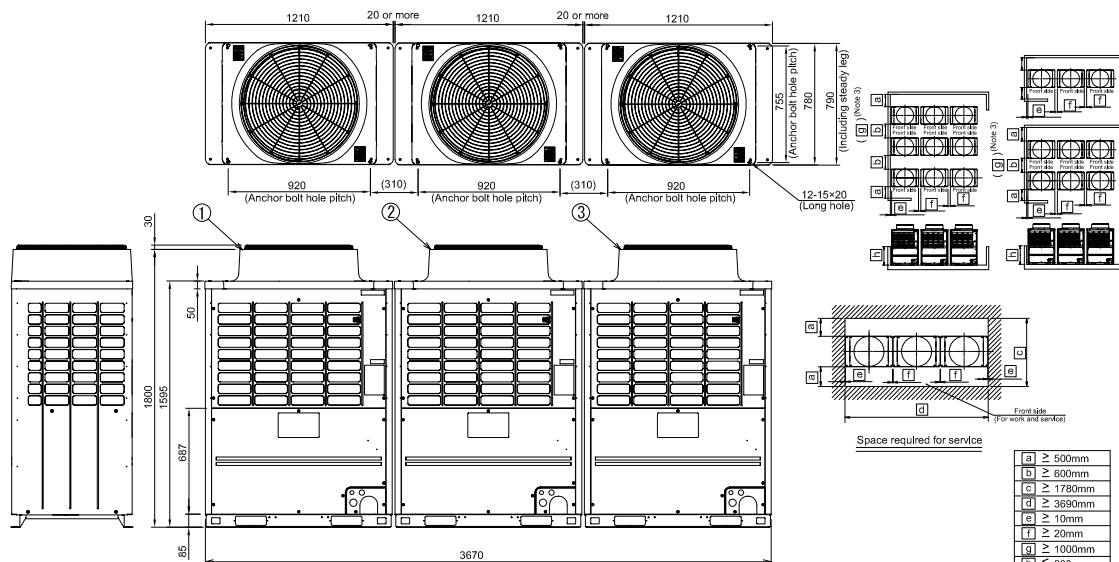
(Note)

- If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
- Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
- Draw out the pipe procured locally to the front of the outdoor unit horizontally and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
- Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ② ≥ Follower unit ③)
- Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

(Unit:mm)

Model	Outdoor unit		
	(1) Header unit	(2) Follower unit	(3) Follower unit
MMY-AP4614HT8-E	MMY-MAP1604HT8-E	MMY-MAP1604HT8-E	MMY-MAP1404HT8-E
MMY-AP4814HT8-E	MMY-MAP1604HT8-E	MMY-MAP1604HT8-E	MMY-MAP1604HT8-E

Three units connected



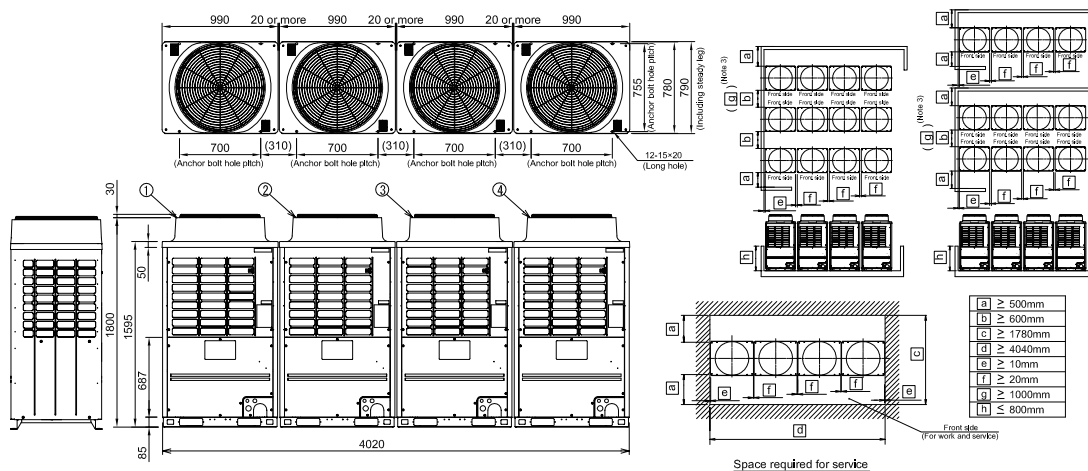
(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe. If placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ② ≥ Follower unit ③)
5. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

(Unit:mm)

Model	Outdoor unit			
	(1) Header unit	(2) Follower unit	(3) Follower unit	(4) Header unit
MMY-AP3224HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E
MMY-AP3424HT8-E	MMY-MAP1004HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E
MMY-AP3624HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E	MMY-MAP0804HT8-E	MMY-MAP0804HT8-E
MMY-AP3824HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E	MMY-MAP0804HT8-E
MMY-AP4024HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E
MMY-AP4224HT8-E	MMY-MAP1204HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E
MMY-AP4424HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E	MMY-MAP1004HT8-E	MMY-MAP1004HT8-E
MMY-AP4624HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E	MMY-MAP1004HT8-E
MMY-AP4824HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E	MMY-MAP1204HT8-E

Three units connected



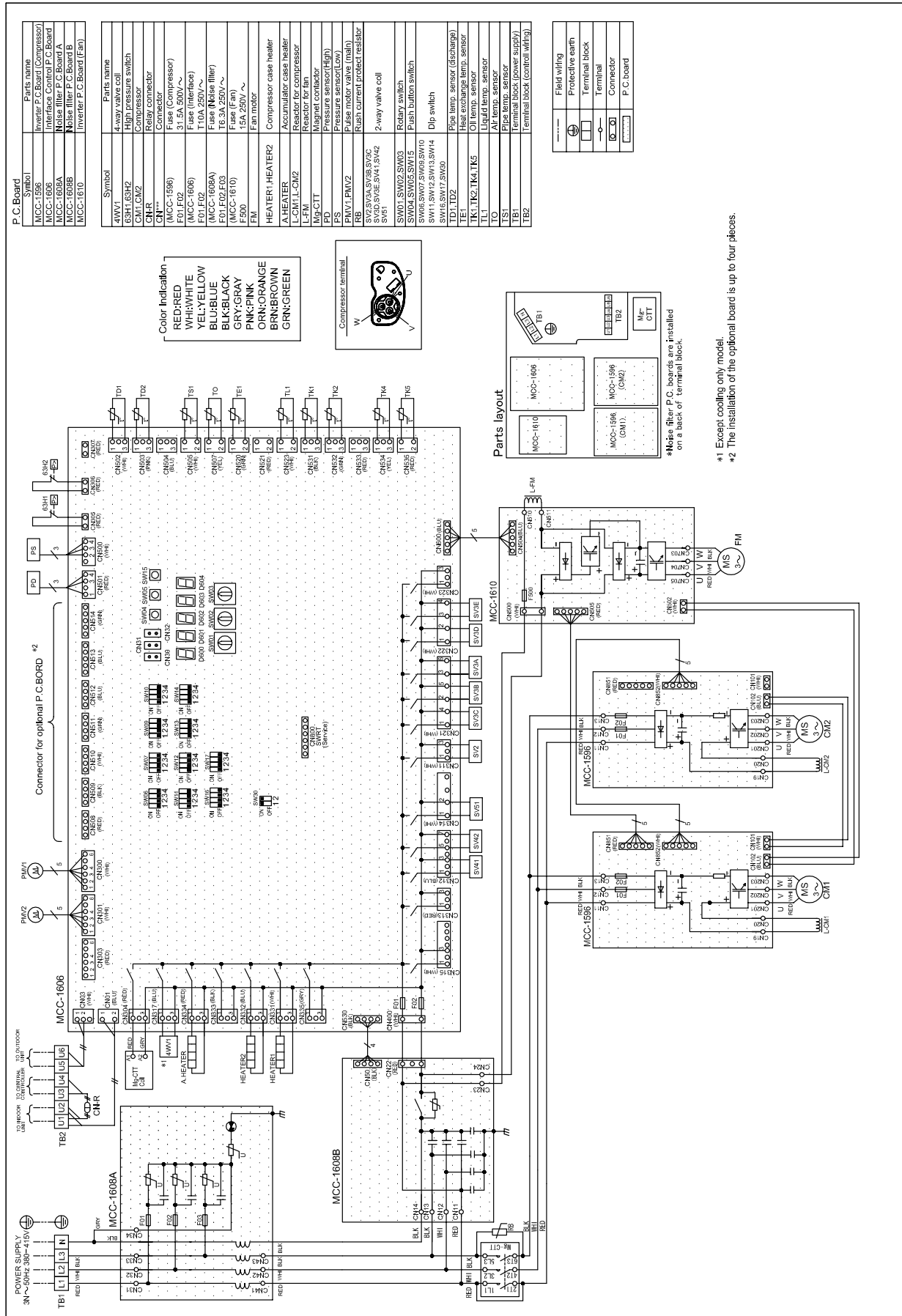
(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe. If placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ② ≥ Follower unit ③)
5. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

(Unit:mm)

Model : MMY-MAP0501*, MAP0601* (SMMS)

Model : MMY-MAP0804*, MAP1004*, MAP1204*



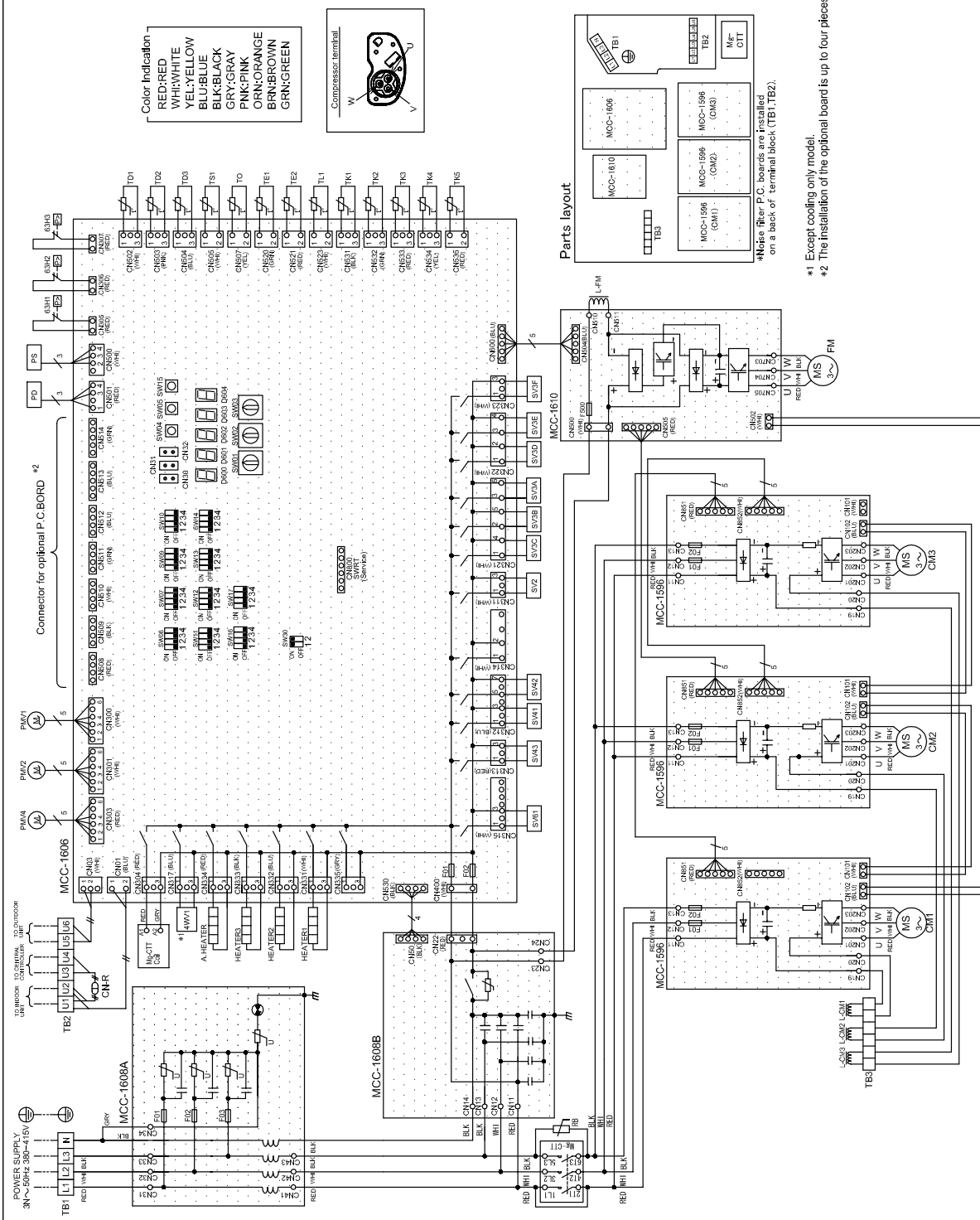
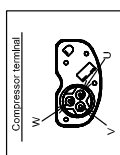
P.C. Board	Symbol	Parts name
	MCC-1596	Inverter P.C. Board (Compressor)
	MCC-1606	Interface Control P.C. Board
	MCC-1608A	Noise filter P.C. Board A
	MCC-1608B	Noise filter P.C. Board B
	MCC-1610	Inverter P.C. Board (Fan)

Symbol	Parts name
4WV1	4-way valve coil
63M1, 63H2, 63H3	High pressure switch
CM1, CM2, CM3	Compressor
CH	Relay connector
CN1	Connector
(MCC-1396)	Fuse (Compressor)
(MCC-1606)	Fuse (Fan)
(MCC-1608)	Fuse (Noise filter)
F01, F02, F03	Fuse (Noise filter)
F04, F05	Fuse (Fan)
(MCC-1610)	Fuse (Fan)
F06	Fuse (Fan)
F07	Fan motor
HEATER1, HEATER2	Compressor case heater
HEATER3	Accumulator case heater
LCM1, LCM2, LCM3	Reactor for compressor
MCCT	Reactor for fan
MCCT	Magnet contactor
PF0	Pressure sensor (High)
PF5	Pressure sensor (Low)
PF6, PF7	Pressure motor valve (main)
PF8, PF9	Pressure motor valve (sub)
PF10	Pressure current protect resistor
RB	2-way valve coil
SV4A, SV4B, SV4C, SV4D, SV4E, SV4F	Relay switch
SW01, SW02, SW03	Rotary button switch
SW04, SW05, SW15	Relay switch
SW06, SW07, SW08, SW10	Relay switch
SW11, SW12, SW13	Relay switch
SW16, SW17, SW08B	Relay switch
TD1, TD2	High temp. sensor (discharge)
TD3	High temp. sensor (suction)
TK1, TK2, TK3, TK4, TK5	High exchange temp. sensor
TL1	Oil temp. sensor
TL2	High temp. sensor
TS1	Air temp. sensor
TS2	Water temp. sensor
TS3	Water supply
TS4	Water supply
TS5	Terminal block (control wire)
TS6	Terminal block (control wire)
TS7	Terminal block (control wire)
TS8	Terminal block (control wire)
TS9	Terminal block (control wire)
TS10	Terminal block (control wire)
TS11	Terminal block (control wire)
TS12	Terminal block (control wire)
TS13	Terminal block (control wire)
TS14	Terminal block (control wire)
TS15	Terminal block (control wire)
TS16	Terminal block (control wire)
TS17	Terminal block (control wire)
TS18	Terminal block (control wire)
TS19	Terminal block (control wire)
TS20	Terminal block (control wire)
TS21	Terminal block (control wire)
TS22	Terminal block (control wire)
TS23	Terminal block (control wire)
TS24	Terminal block (control wire)
TS25	Terminal block (control wire)
TS26	Terminal block (control wire)
TS27	Terminal block (control wire)
TS28	Terminal block (control wire)
TS29	Terminal block (control wire)
TS30	Terminal block (control wire)
TS31	Terminal block (control wire)
TS32	Terminal block (control wire)
TS33	Terminal block (control wire)
TS34	Terminal block (control wire)
TS35	Terminal block (control wire)
TS36	Terminal block (control wire)
TS37	Terminal block (control wire)
TS38	Terminal block (control wire)
TS39	Terminal block (control wire)
TS40	Terminal block (control wire)
TS41	Terminal block (control wire)
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TS44	Terminal block (control wire)
TS45	Terminal block (control wire)
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TS93	Terminal block (control wire)
TS94	Terminal block (control wire)
TS95	Terminal block (control wire)
TS96	Terminal block (control wire)
TS97	Terminal block (control wire)
TS98	Terminal block (control wire)
TS99	Terminal block (control wire)
TS100	Terminal block (control wire)

-----	Field wiring
	Protective earth
	Terminal block
	Terminal
	Connector
	D.C. board

Color Indication -

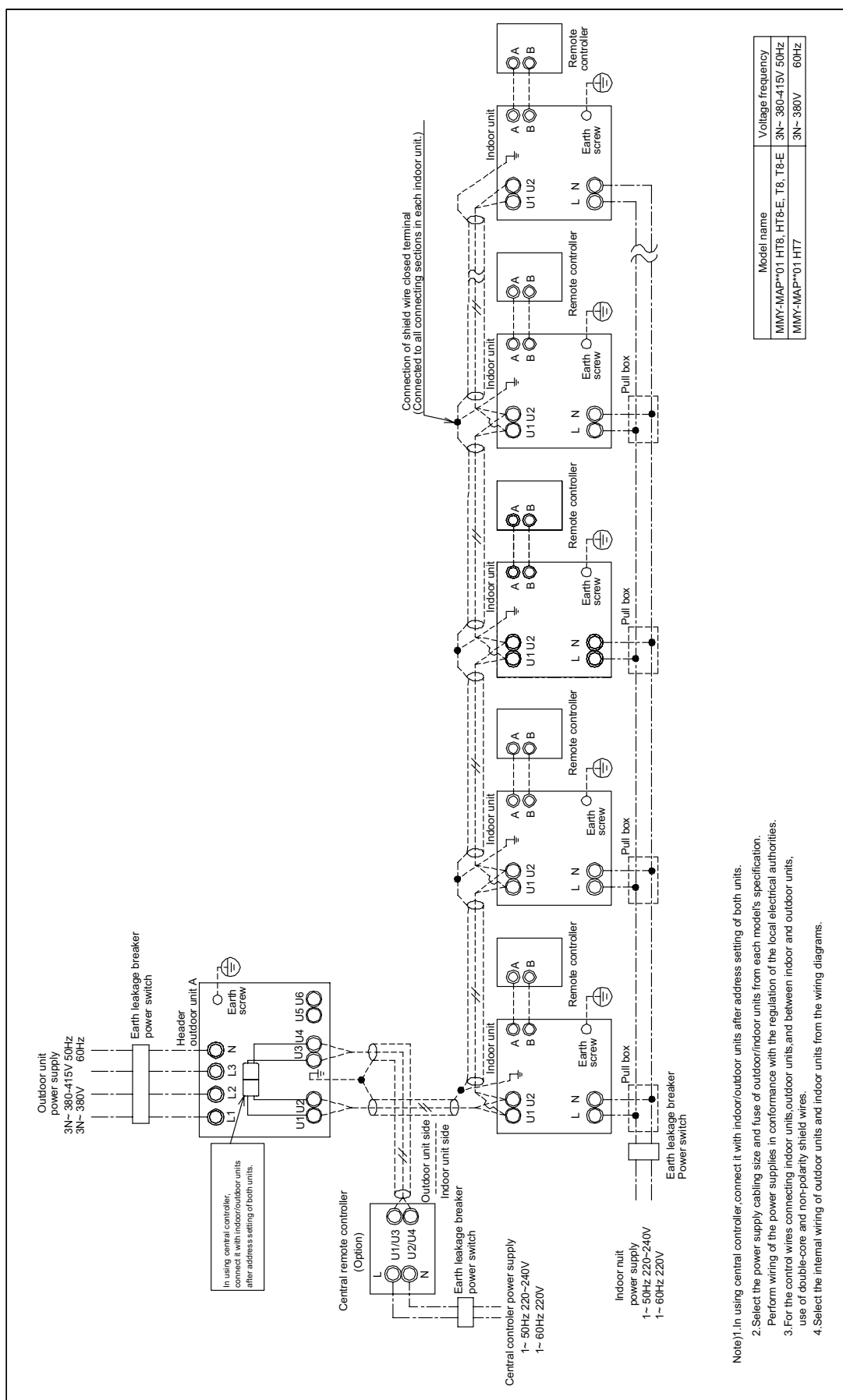
RED:RED
WHI:WHITE
YEL:YELLOW
BLU:BLUE
BLK:BLACK
GRY:GRAY
PNK:PINK
ORN:ORANGE
BRN:BROWN
GRN:GREEN



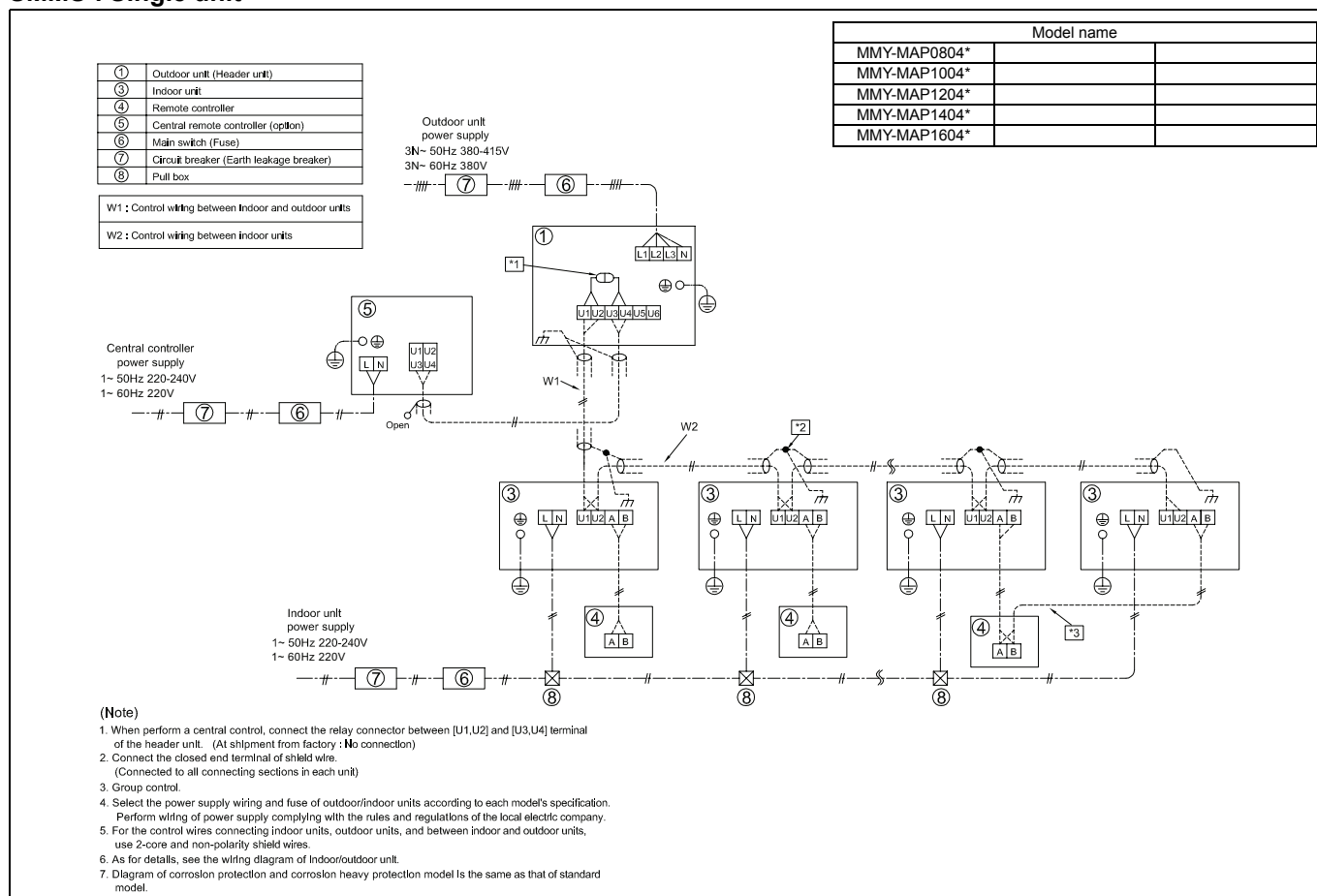
*#1 Except cooling only model.
*#2 The installation of the optional board is up to four pieces.

11-1-4. Connecting diagram

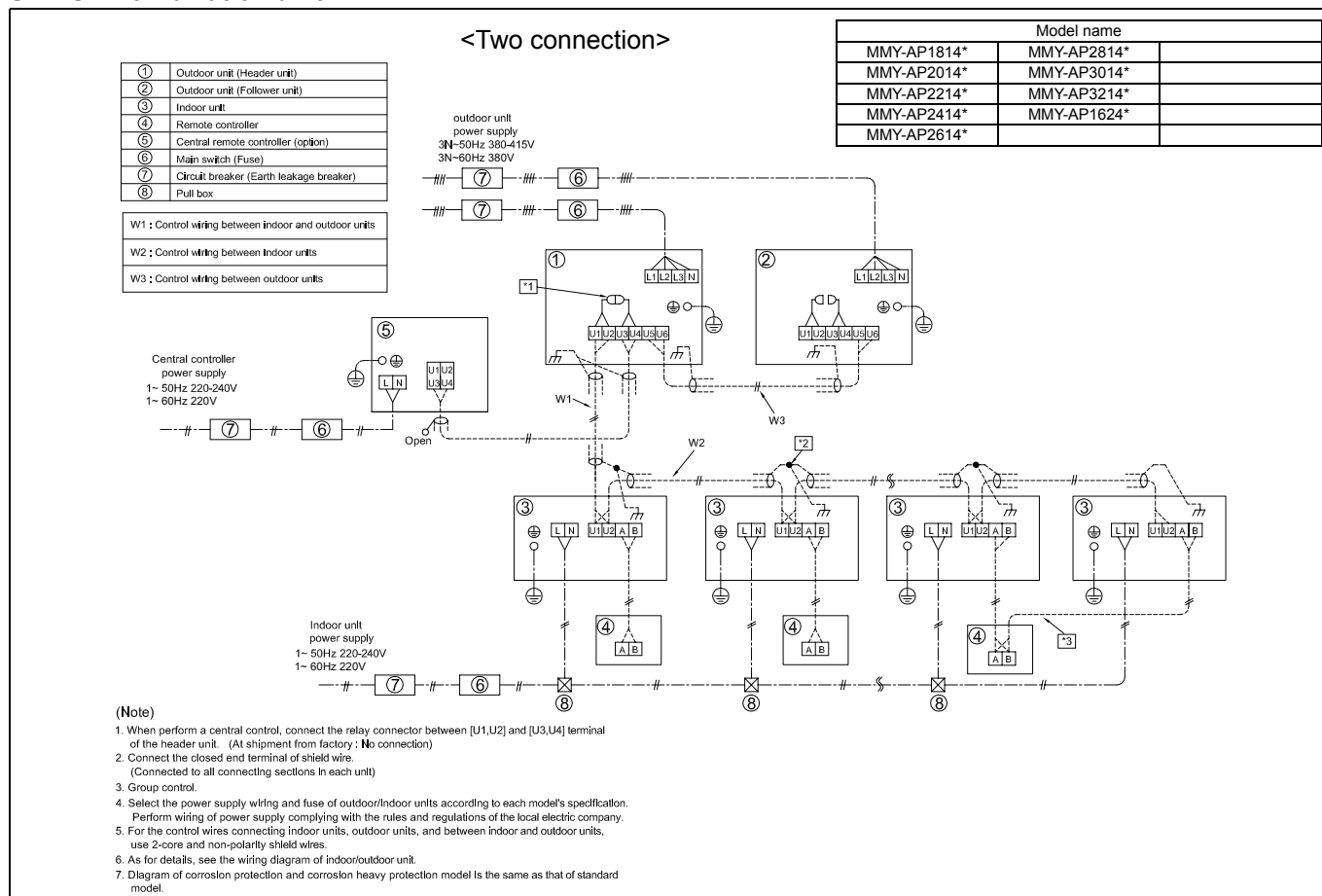
Model : MMY-MAP0501*, 0601* (SMMS)



SMMS-i Single unit



SMMS-i Combination unit



<Three connection>

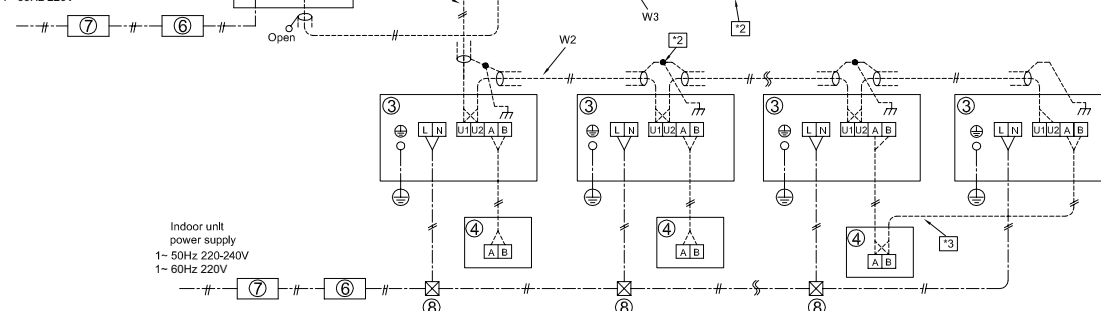
①	Outdoor unit (Header unit)
②	Outdoor unit (Follower unit)
③	Indoor unit
④	Remote controller
⑤	Central remote controller (option)
⑥	Main switch (Fuse)
⑦	Circuit breaker (Earth leakage breaker)
⑧	Pull box

W1 : Control wiring between indoor and outdoor units

W2 : Control wiring between indoor units

W3 : Control wiring between outdoor units

Central controller
power supply
1~ 50Hz 220-240V
1~ 60Hz 220V



(Note)

- When perform a central control, connect the relay connector between [U1,U2] and [U3,U4] terminal of the header unit. (At shipment from factory : No connection)
- Connect the closed end terminal of shield wire (Connected to all connecting sections in each unit)
- Group control.
- Select the power supply wiring and fuse of outdoor/indoor units according to each model's specification. Perform wiring of power supply complying with the rules and regulations of the local electric company.
- For the control wires connecting indoor units, outdoor units, and between indoor and outdoor units, use 2-core and non-polarity shield wires.
- As for details, see the wiring diagram of indoor/outdoor unit.
- Diagram of corrosion protection and corrosion heavy protection model is the same as that of standard model.

<Four connection>

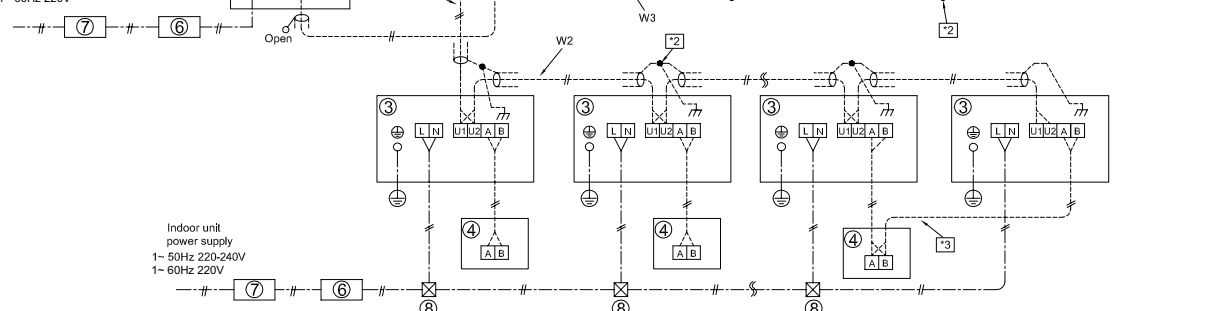
①	Outdoor unit (Header unit)
②	Outdoor unit (Follower unit)
③	Indoor unit
④	Remote controller
⑤	Central remote controller (option)
⑥	Main switch (Fuse)
⑦	Circuit breaker (Earth leakage breaker)
⑧	Pull box

W1 : Control wiring between indoor and outdoor units

W2 : Control wiring between indoor units

W3 : Control wiring between outdoor units

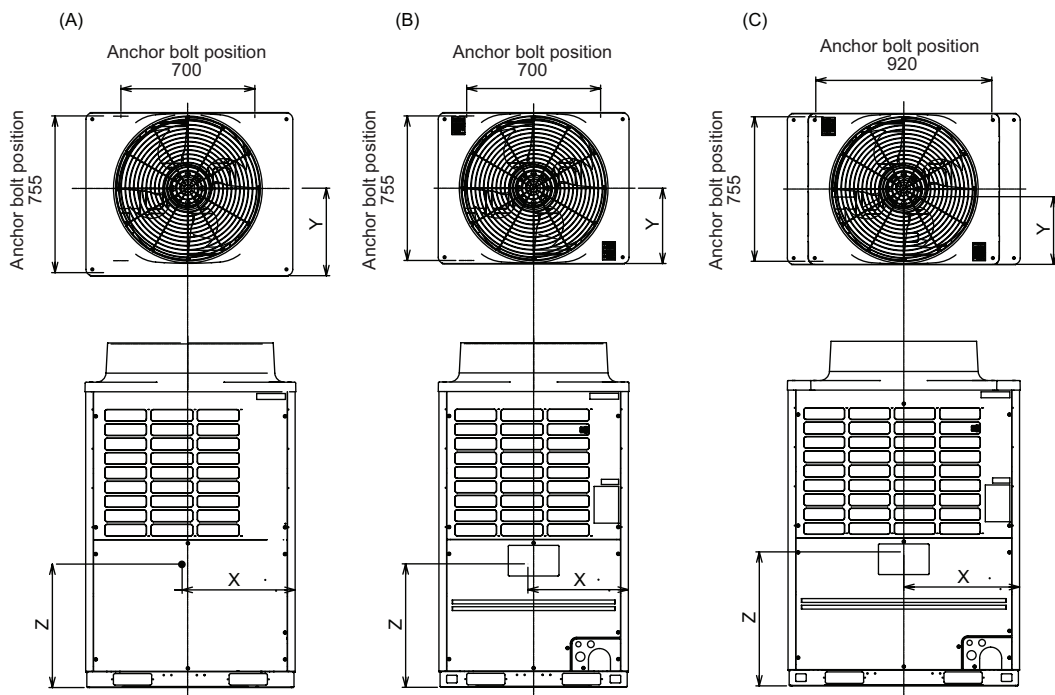
Central controller
power supply
1~ 50Hz 220-240V
1~ 60Hz 220V



(Note)

- When perform a central control, connect the relay connector between [U1,U2] and [U3,U4] terminal of the header unit. (At shipment from factory : No connection)
- Connect the closed end terminal of shield wire (Connected to all connecting sections in each unit)
- Group control.
- Select the power supply wiring and fuse of outdoor/indoor units according to each model's specification. Perform wiring of power supply complying with the rules and regulations of the local electric company.
- For the control wires connecting indoor units, outdoor units, and between indoor and outdoor units, use 2-core and non-polarity shield wires.
- As for details, see the wiring diagram of indoor/outdoor unit.
- Diagram of corrosion protection and corrosion heavy protection model is the same as that of standard model.

11-1-5. Center of gravity



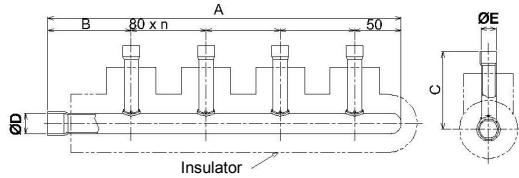
No.	Model type	X (mm)	Y (mm)	Z (mm)	Mass (kg)
(A)	MMY-MAP0501 *	515	383	365	228
	MMY-MAP0601 *				(cooling only : 227)
	MMY-MAP0804 *				
(B)	MMY-MAP1004 *	500	390	645	242
	MMY-MAP1204 *				(cooling only : 241)
	MMY-MAP1404 *				
(C)	MMY-MAP1604 *	605	350	700	330
	MMY-MAP1604 *				

11-1-6. Branch header / branch joint

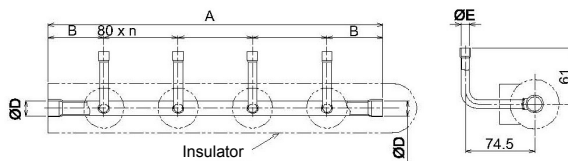
• Branch header

RBM-HY1043E, HY1083E, HY2043E, HY2083E

Gas side



Liquid side

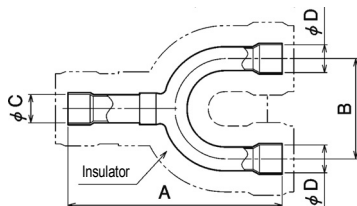


Model		A	B	C	øD	øE	n	Accessory socket Q'ty
RBM-HY1043E	Gas side	380	90	83.6	22.2	15.9	3	⑥ x 4, ⑨ x 4, ⑭ x 1, ⑱ x 1, ⑳ x 1
	Liquid side	360	60	-	15.9	9.5	3	① x 4, ⑥ x 1, ⑨ x 1
RBM-HY1083E	Gas side	700	90	83.6	22.2	15.9	7	⑥ x 8, ⑨ x 8, ⑭ x 1, ⑱ x 1, ⑳ x 1
	Liquid side	680	60	-	15.9	9.5	7	① x 8, ⑥ x 1, ⑨ x 1
RBM-HY2043E	Gas side	385.5	95.5	89.3	31.8	15.9	3	⑥ x 2, ⑨ x 2, ⑳ x 1, ㉑ x 1
	Liquid side	360	60	-	15.9	9.5	3	① x 2
RBM-HY2083E	Gas side	705.5	95.5	89.3	31.8	15.9	7	⑥ x 7, ⑨ x 7, ⑳ x 1, ㉑ x 1
	Liquid side	680	60	-	15.9	9.5	7	① x 7

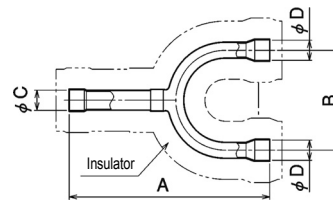
• Y-shape branch joint

RBM-BY55E, BY105E, BY205E, BY305E

Gas side



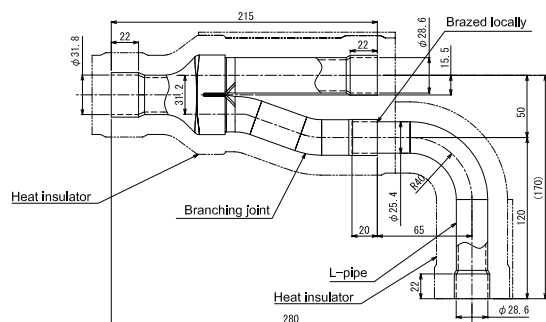
Liquid side



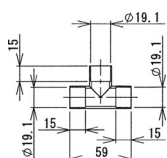
RBM-		A	B	øC	øD	Accessory socket Q'ty
BY55E	Gas side	160	80	15.9	15.9	⑨ x 1, ⑤① x 2, ⑨① x 2
	Liquid side	130	70	9.5	9.5	① x 2te
BY105E	Gas side	170	80	22.2	22.2	⑭ x 2, ⑳ x 2, ⑨① x 1
	Liquid side	160	80	15.9	15.9	⑨ x 1, ⑨① x 1, ⑨② x 1
BY205E	Gas side	200	80	31.8	28.6	⑩ x 1, ㉑ x 1, ④③ x 2, ⑤⑧ x 1, ⑤⑨ x 1, ⑨① x 1
	Liquid side	160	80	15.9	15.9	⑨ x 1, ⑤① x 2, ⑨② x 1
BY305E	Gas side	220	80	38.1	38.1	④③ x 1, ⑥① x 3, ⑥② x 2, ⑦① x 2, ⑦⑤ x 1, ⑨① x 1
	Liquid side	170	80	22.2	22.2	⑨② x 1, ⑨③ x 3

• Branching joint for connection of outdoor units(Set of three kinds of joint) RBM-BT14E

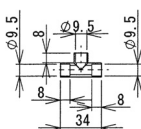
Gas side



Liquid side



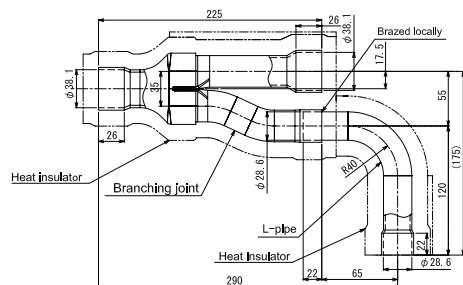
Balance pipe



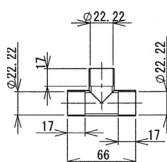
RBM-BT14E	
	Accessory socket Q'ty
Gas side	②7x 1, ④3x 2, ⑤9x 1
Liquid side	⑩x 2, ⑬x 1

RBM-BT24E

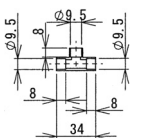
Gas side



Liquid side

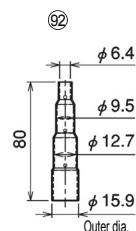
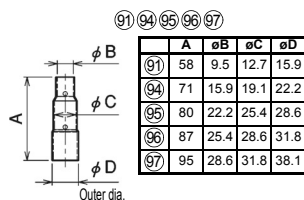
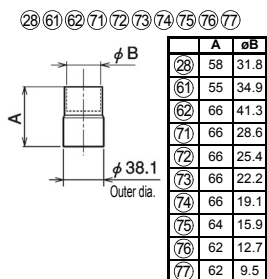
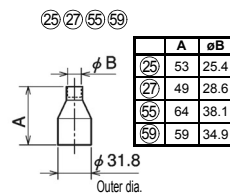
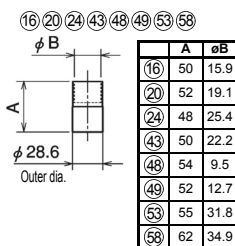
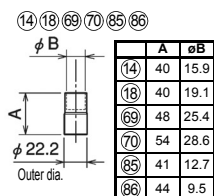
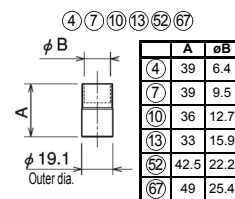
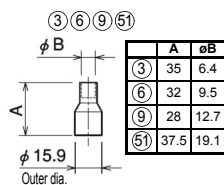
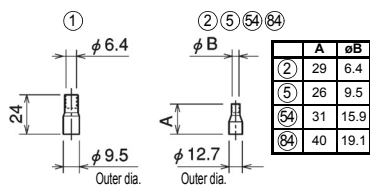


Balance pipe



RBM-BT24E	
	Accessory socket Q'ty
Gas side	④3x1, ⑥1x2, ⑥2x2, ⑦1x1, ⑦3x1
Liquid side	⑭x2, ⑱x2, ⑸5x1

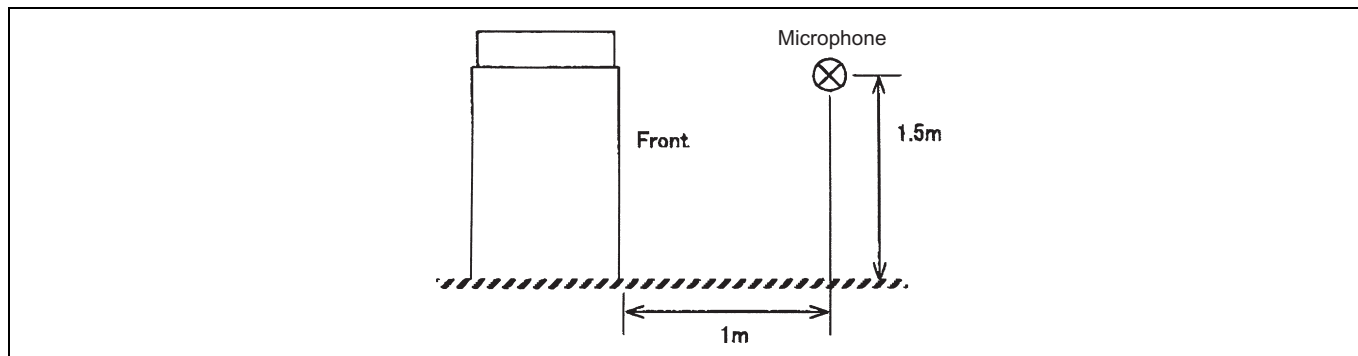
• Accessory socket



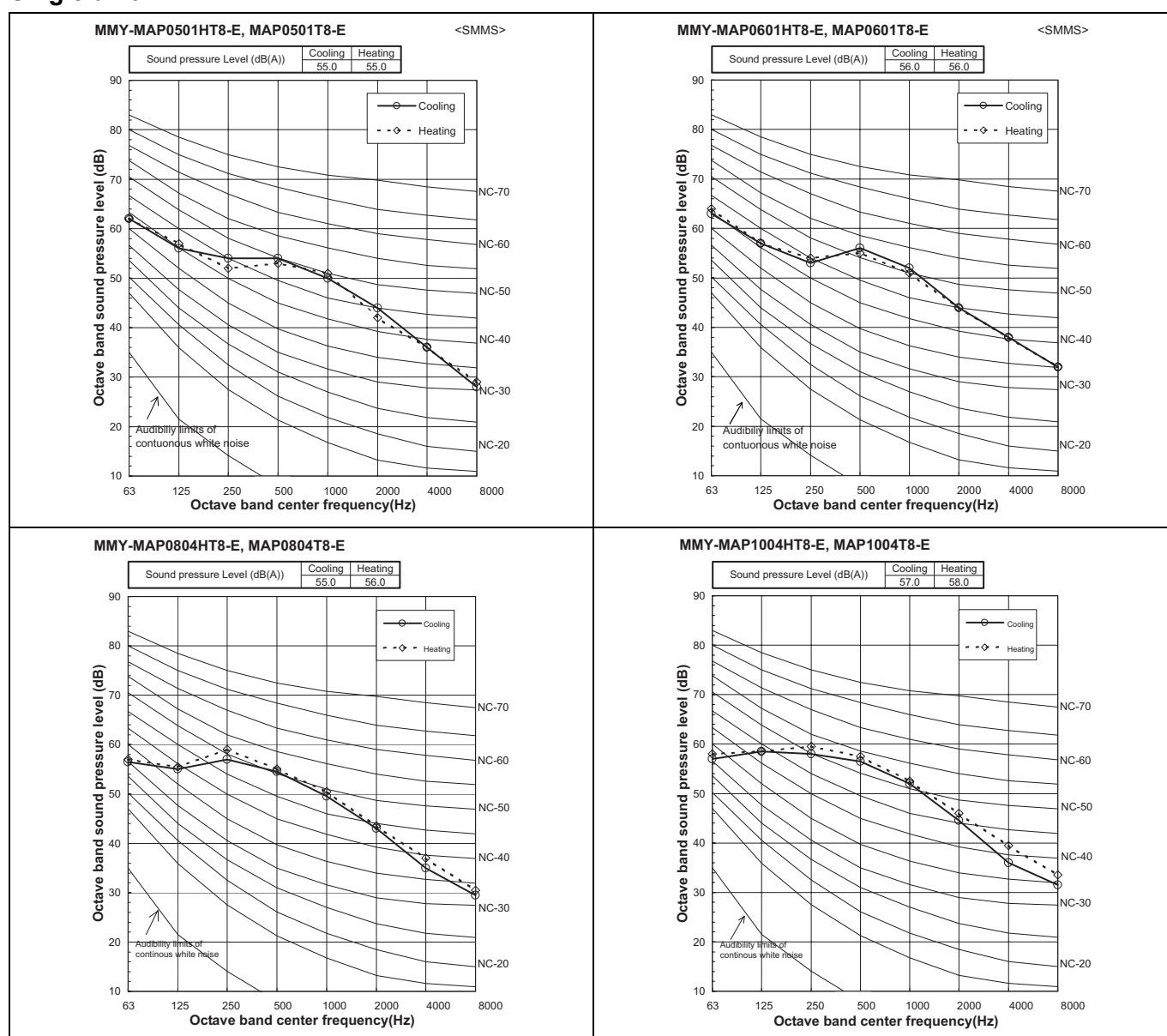
Closure tube



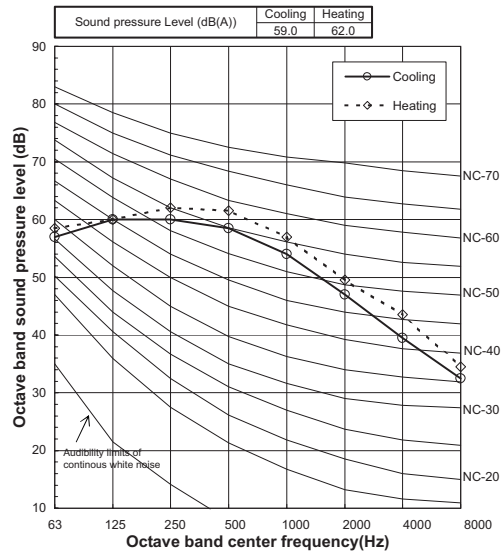
11-1-8. Sound Pressure level data (NC CURVE) Outdoor unit



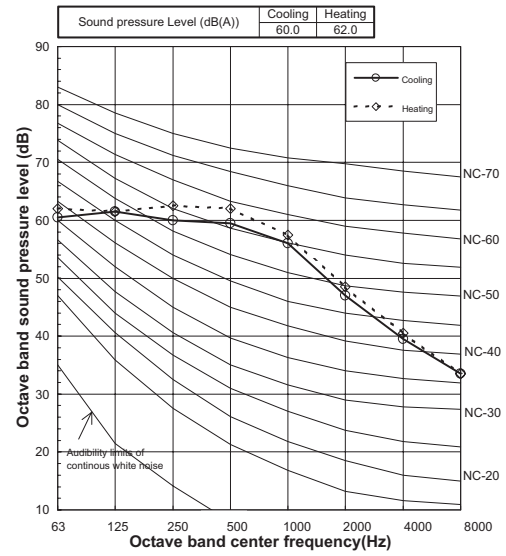
Single unit



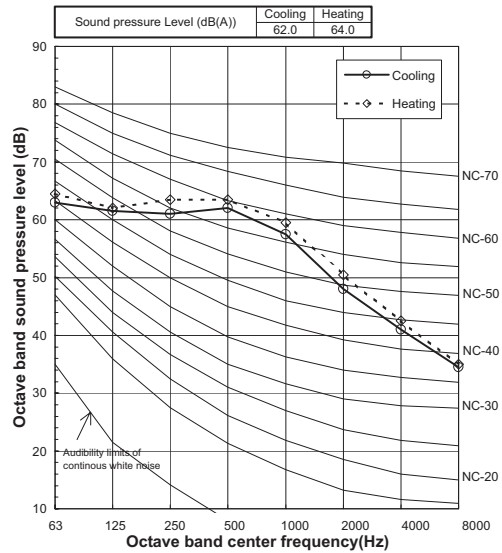
MMY-MAP1204HT8-E, MAP1204T8-E



MMY-MAP1404HT8-E, MAP1404T8-E



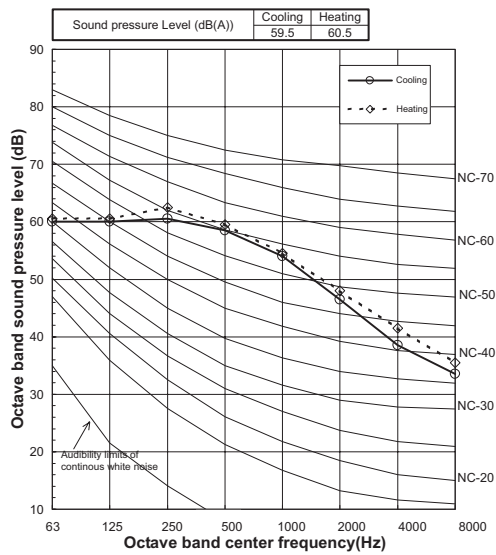
MMY-MAP1604HT8-E, MAP1604T8-E



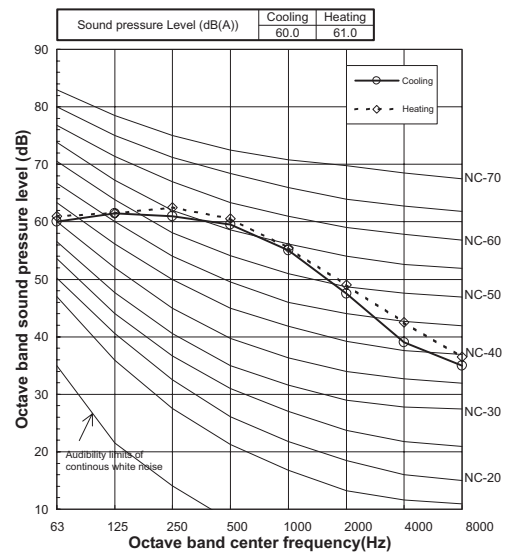
Combination

• Standard model

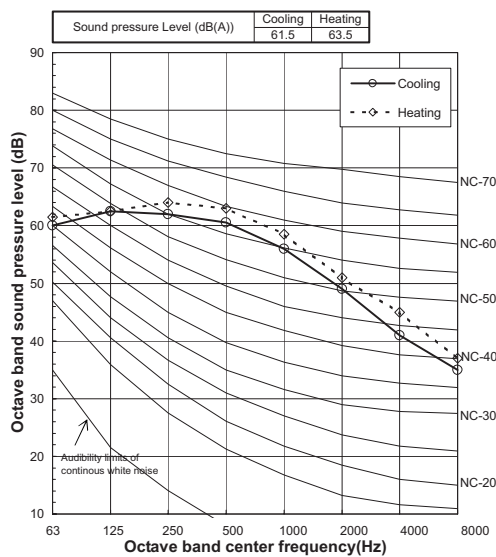
MMY-AP1814HT8-E, AP1814T8-E



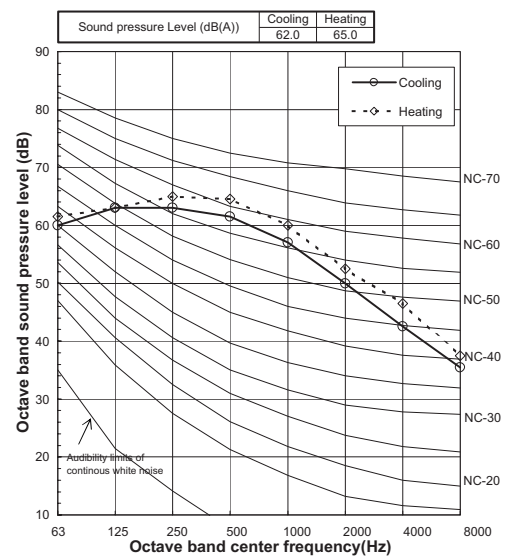
MMY-AP2014HT8-E, AP2014T8-E



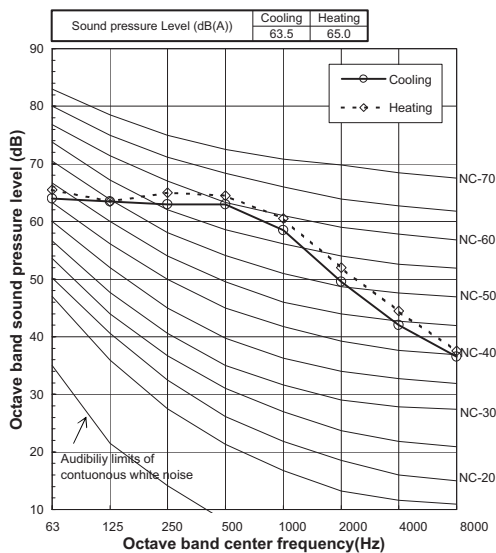
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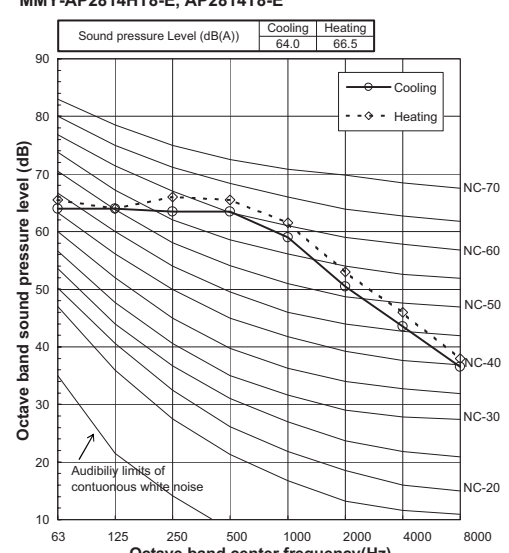
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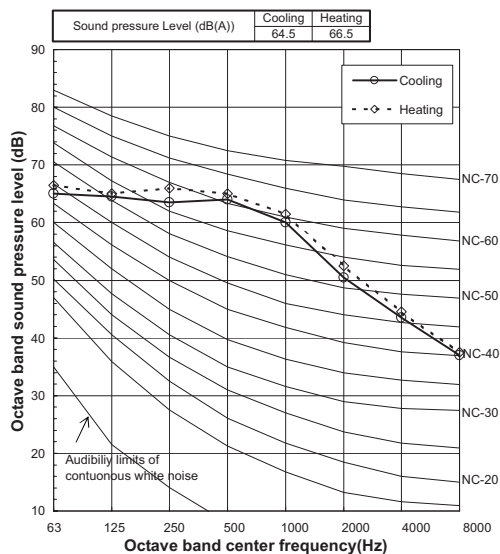
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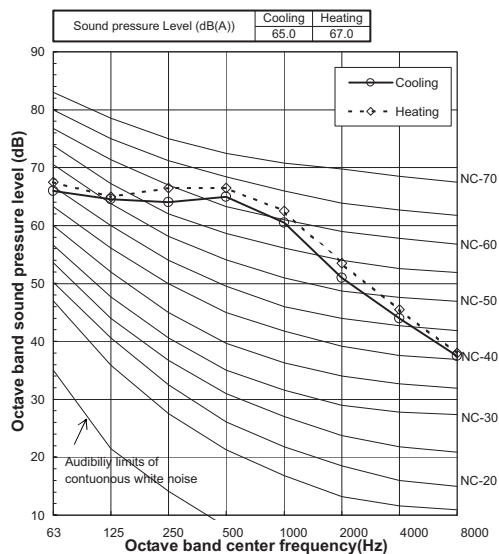
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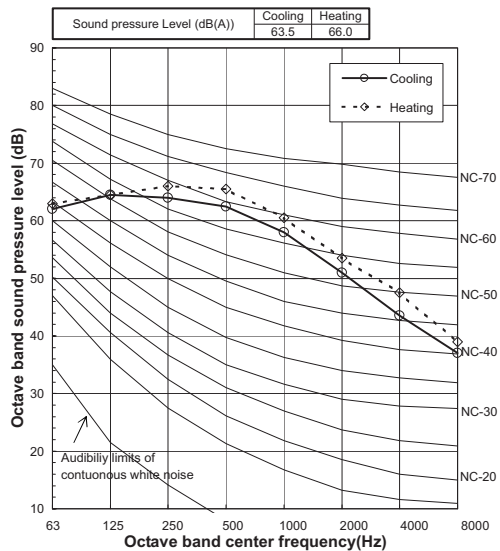
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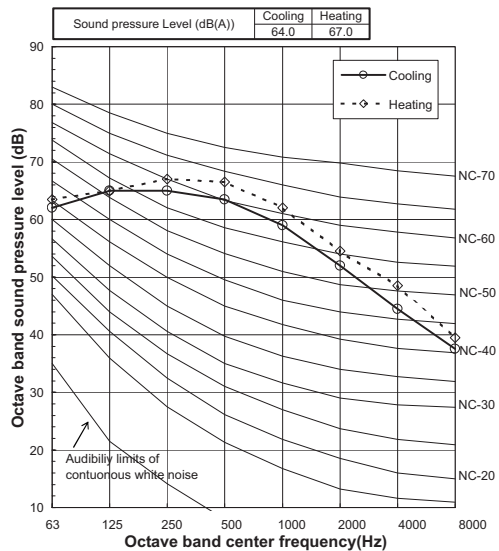
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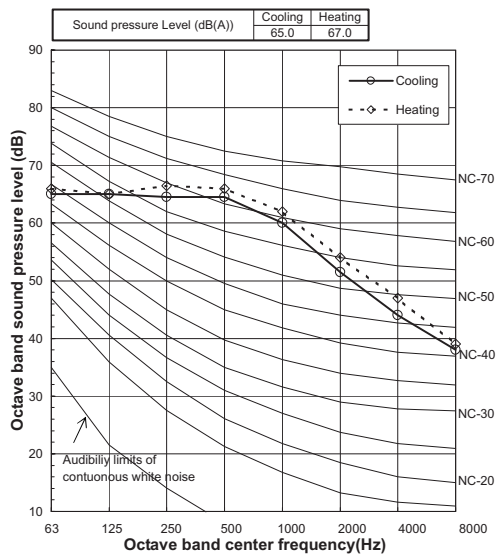
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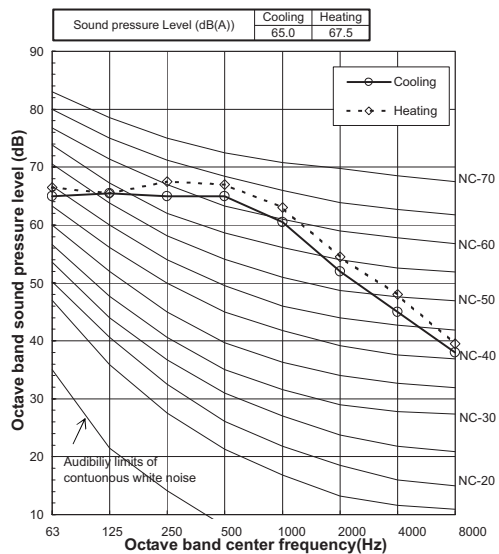
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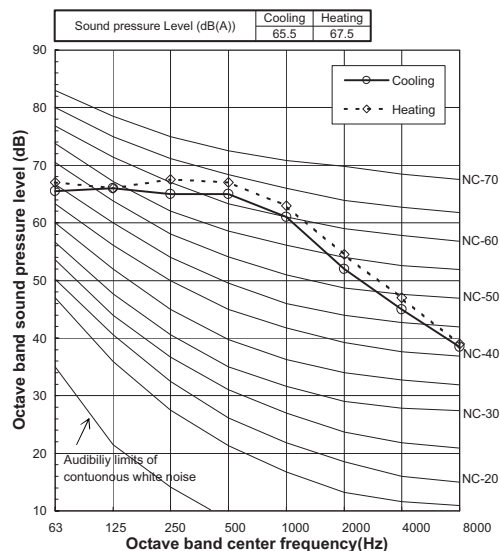
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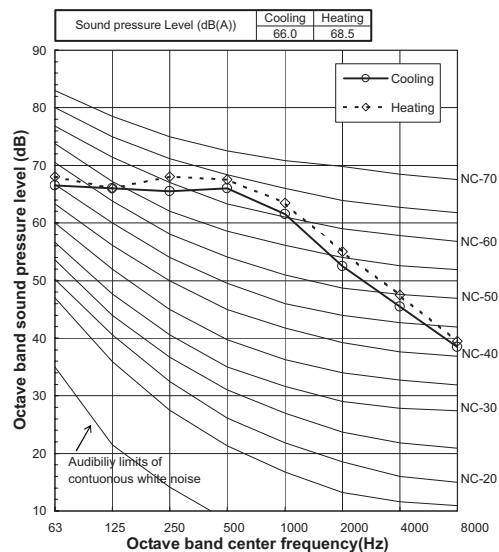
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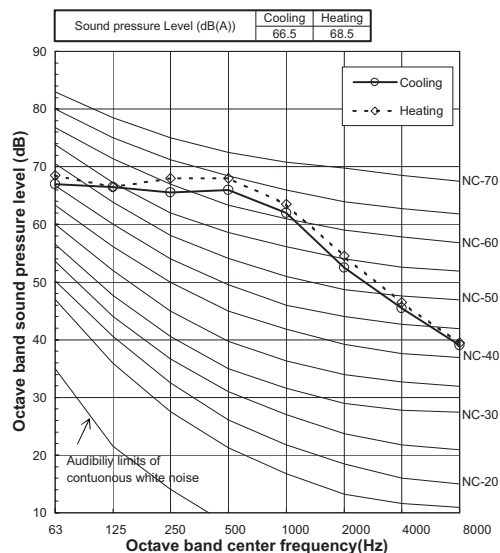
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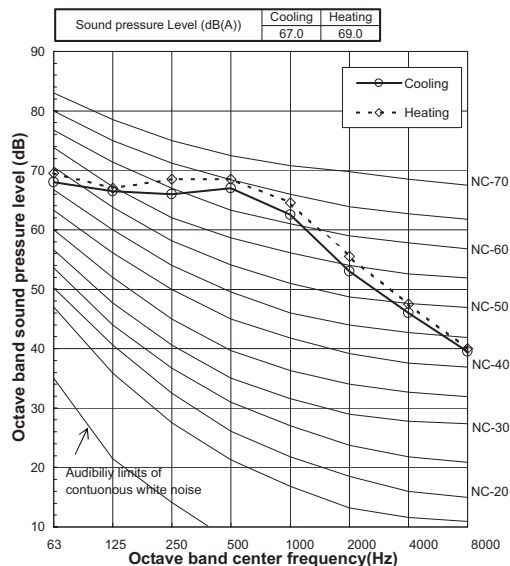
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MMY-AP4614HT8-E, AP4614T8-E

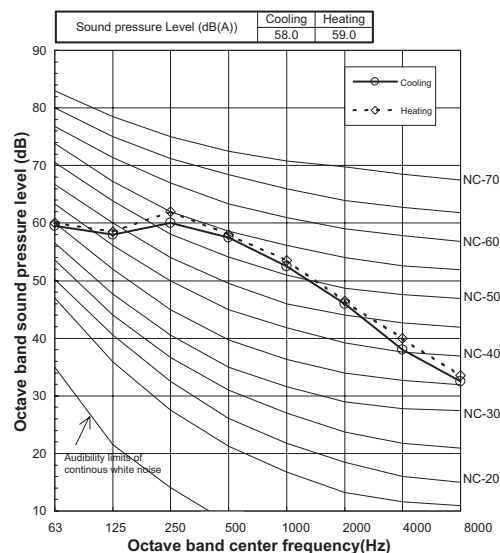


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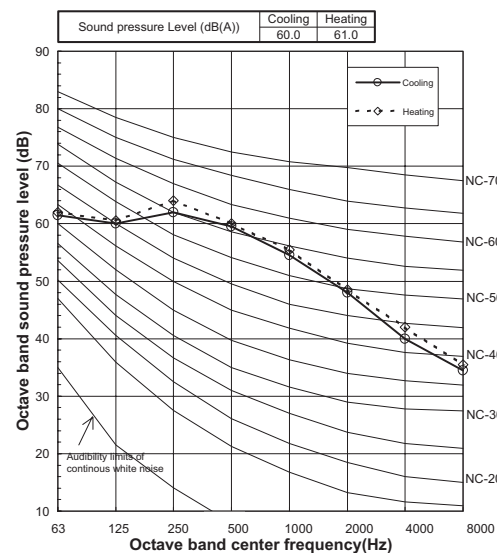


• High efficiency model

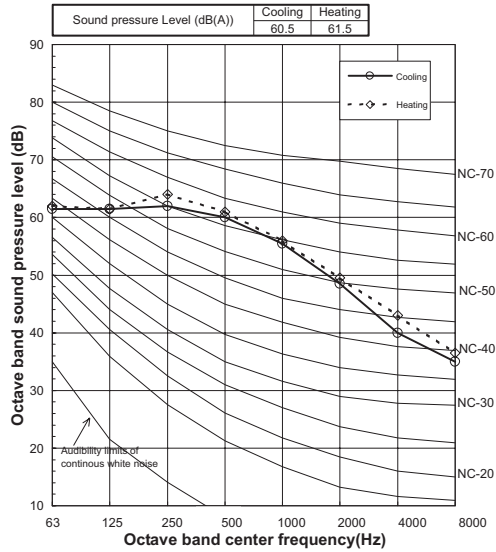
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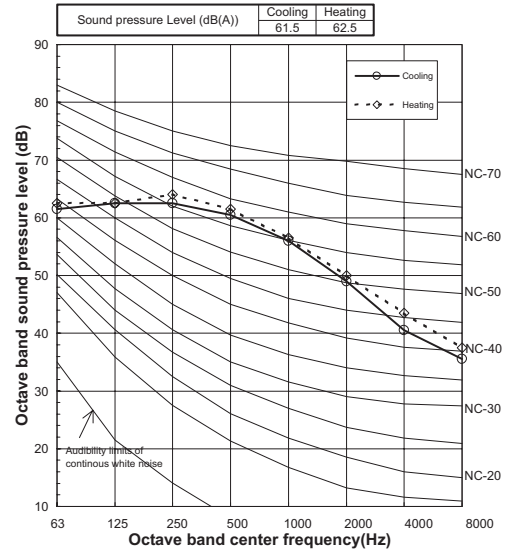
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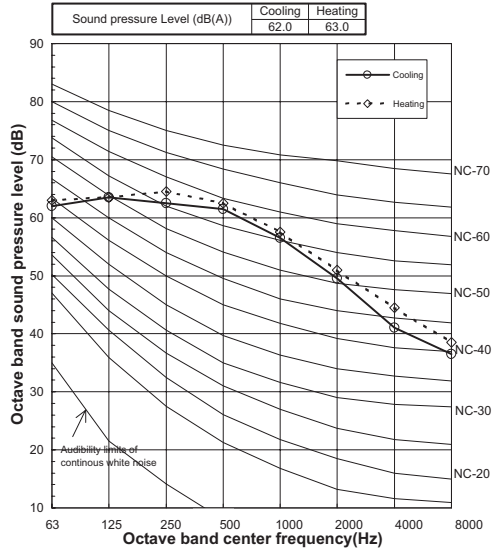
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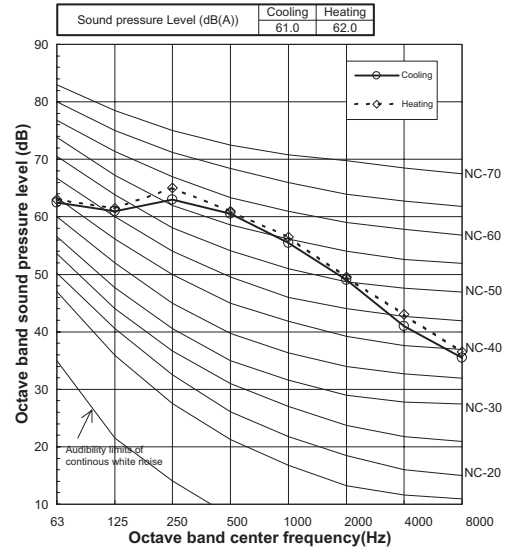
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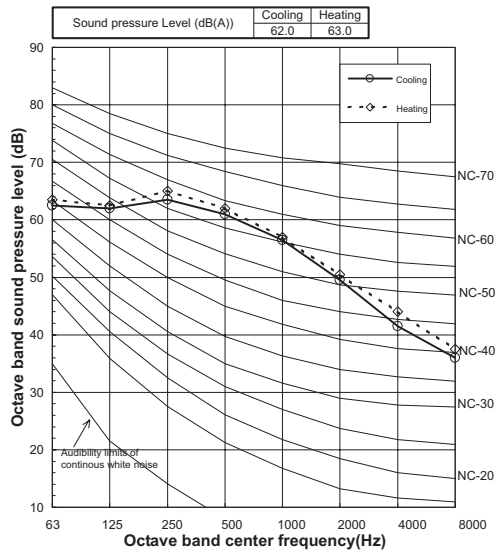
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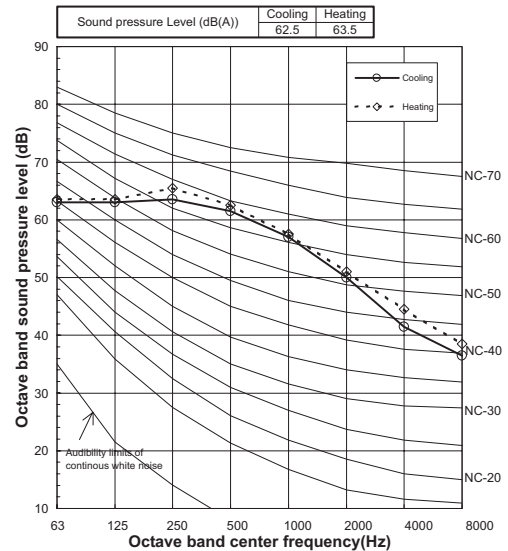
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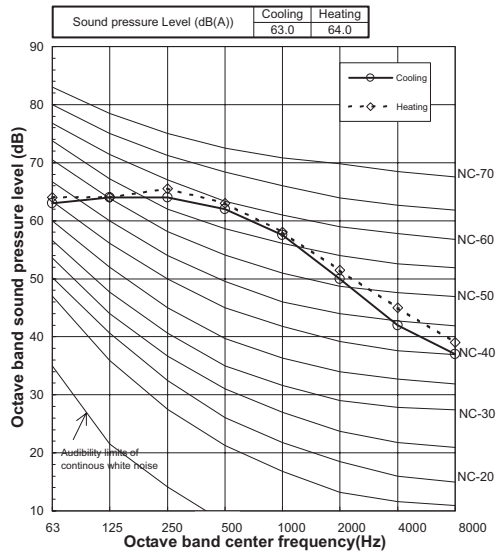
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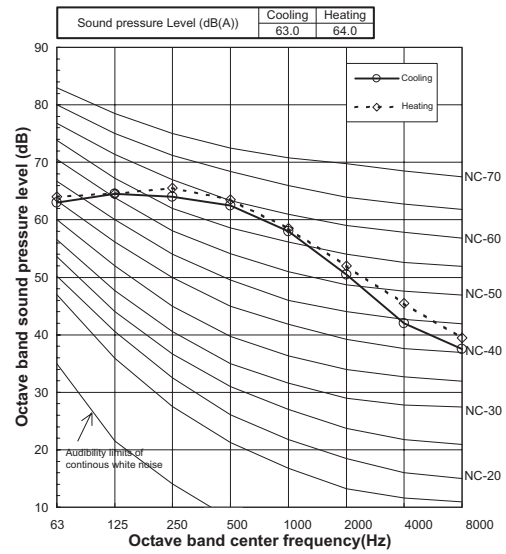
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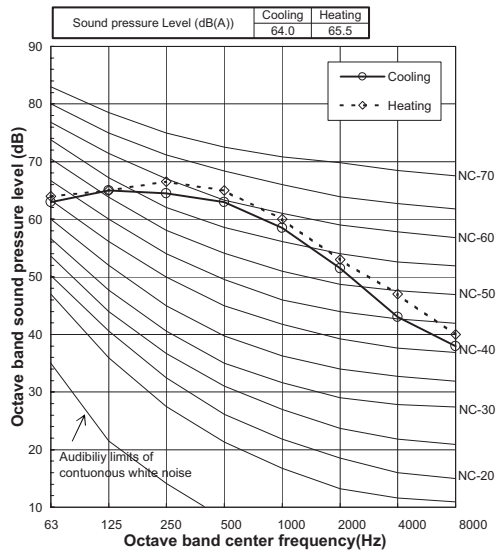
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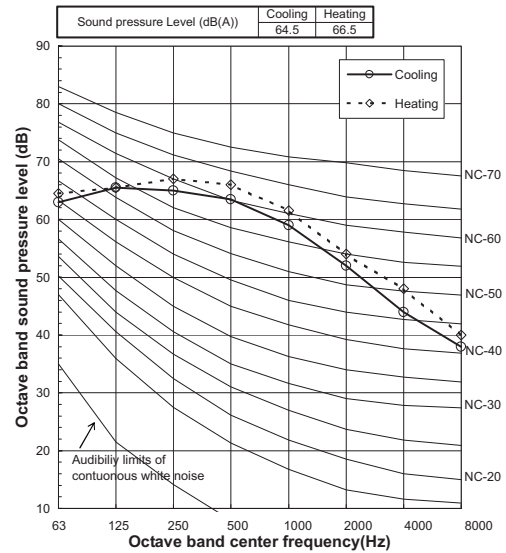
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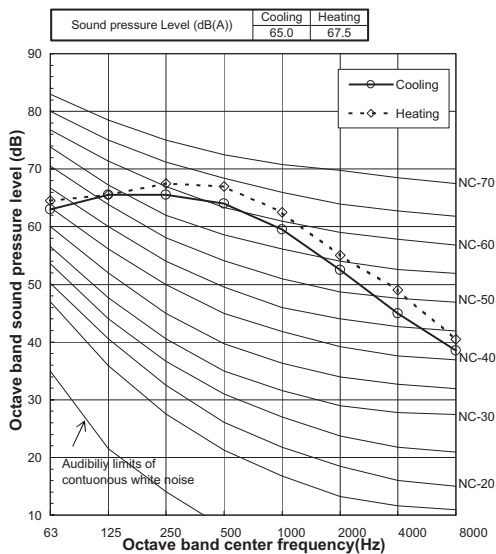
MMY-AP4224HT8-E, AP4224T8-E



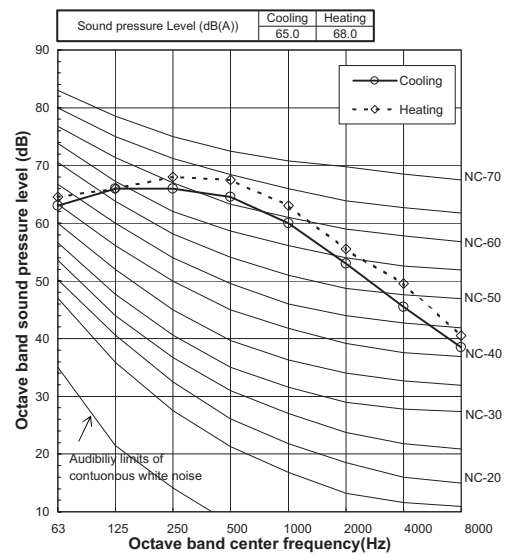
MMY-AP4424HT8-E, AP4424T8-E



MMY-AP4624HT8-E, AP4624T8-E



MMY-AP4824HT8-E, AP4824T8-E

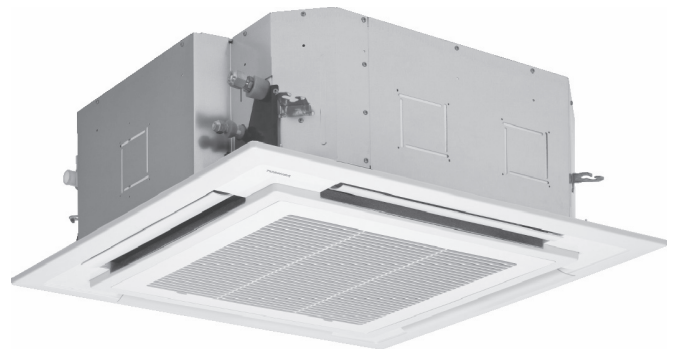


11-2. Indoor Unit

11-2-1 4-way Air Discharge Cassette Type

4-way Air Discharge Cassette Type

MMU-AP0092H / MMU-AP0122H
MMU-AP0152H / MMU-AP0182H
MMU-AP0242H / MMU-AP0272H
MMU-AP0302H / MMU-AP0362H
MMU-AP0482H / MMU-AP0562H



Contents

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9. Fresh air intake (Design guide)
10. Branching duct (Design guide)
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1. Specifications

Model name			MMU-	AP0092H	AP0122H	AP0152H	AP0182H	AP0242H	AP0272H	AP0302H	AP0362H	AP0482H	AP0562H
Cooling/Heating capacity (Note 1)			(kW)	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0
Electical characteristics	Power supply		1 phase 50Hz 230V (220-240V) / 1 phase 60Hz 220V (Sepatate power supply for indoor units is required.)										
	Running current (A)		0.23		0.27	0.29	0.38		0.43	0.73	0.88		
	Power consumption (kW)		0.021		0.023	0.026	0.036		0.043	0.088	0.112		
	Starting current (A)		0.30		0.33	0.36	0.42		0.59	0.87	1.23	1.26	
Appearance	Main unit		Heat-insulating material attached Zinc hot dipping steel plate										
	Ceiling panel	Model	RBC-U31PG(W)-E / RBC-U31PGS(W)-E / RBC-U31PGS(WS)-E										
		Panel color	White (2.5GY9.0/0.5)										
Outer dimation	Main unit	Hight (mm)	256								319		
		Width (mm)	840										
		Depth (mm)	840										
	Ceiling panel	Hight (mm)	30										
		Width (mm)	950										
		Depth (mm)	950										
Total weight	Main unit (kg)		18		20					25			
	Ceiling panel (kg)		4.0										
Heat exchanger			Fined tube										
Soundproof / Heat-insulating material			Non-flammable insulation										
Fan unit	Fan		Turbo fan										
	Standard air flow (High/Mid/Low) (m³/h)		800/730/680		930/830/790	1050/920/800	1290/920/800		1320/1100/850	1970/1430/1070	2130/1430/1130	2130/1520/1230	
	Motor output (W)		14				20			68		72	
Air filter			Standard filter (Long life filter)										
Controller			Remote controller										
Connecting pipe	Gas pipe (mm)		φ9.5		φ12.7		φ15.9						
	Liquid pipe (mm)		φ6.4				φ9.5						
	Drain port (Nominal dia.mm)		25 (Polyvinyl chloride tube)										
Sound pressure level (Note 2) (High/Med./Low) (dB(A))			30/29/27		31/29/27	32/29/27	35/31/28		38/33/30	43/38/32	46/38/33	46/40/33	

Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

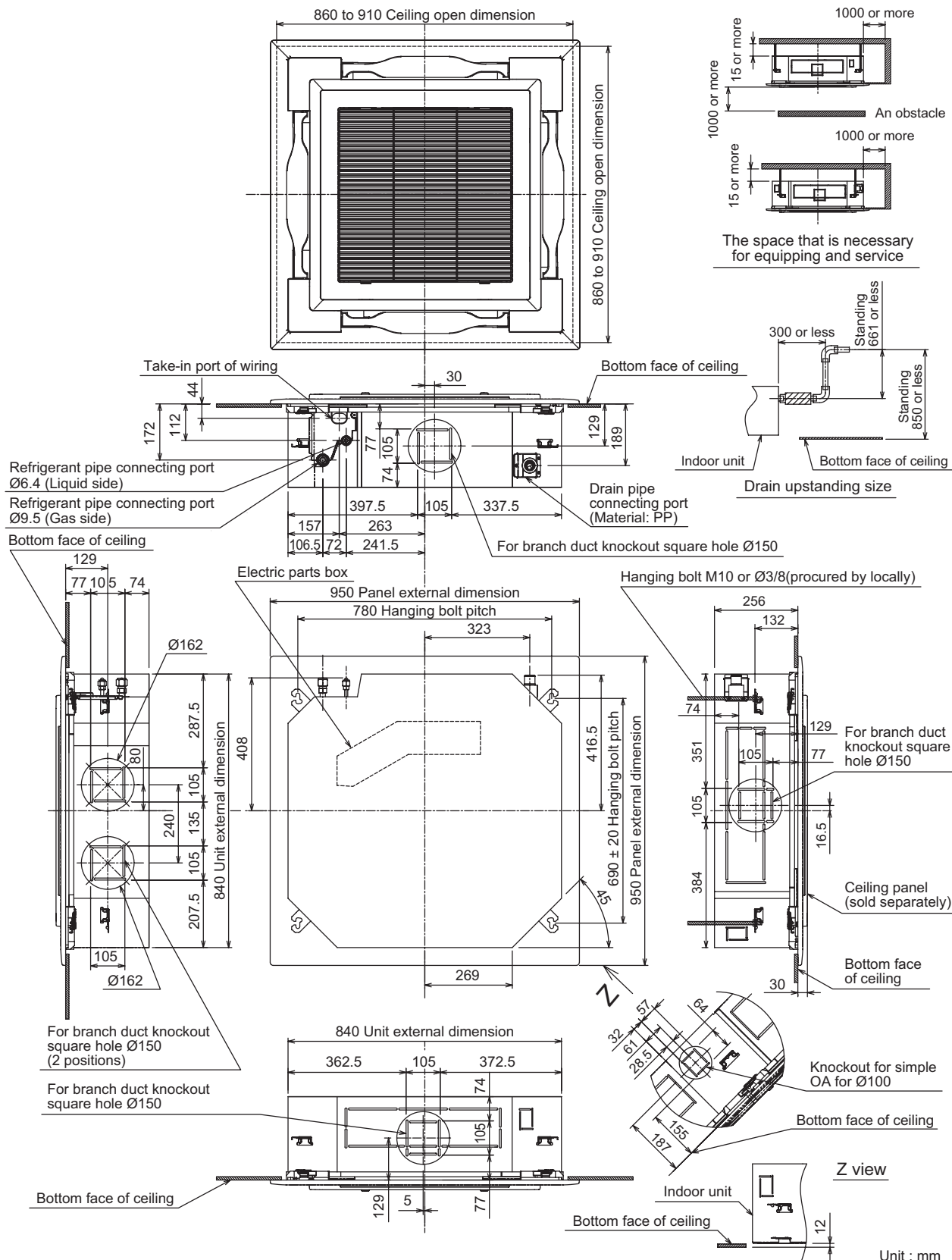
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

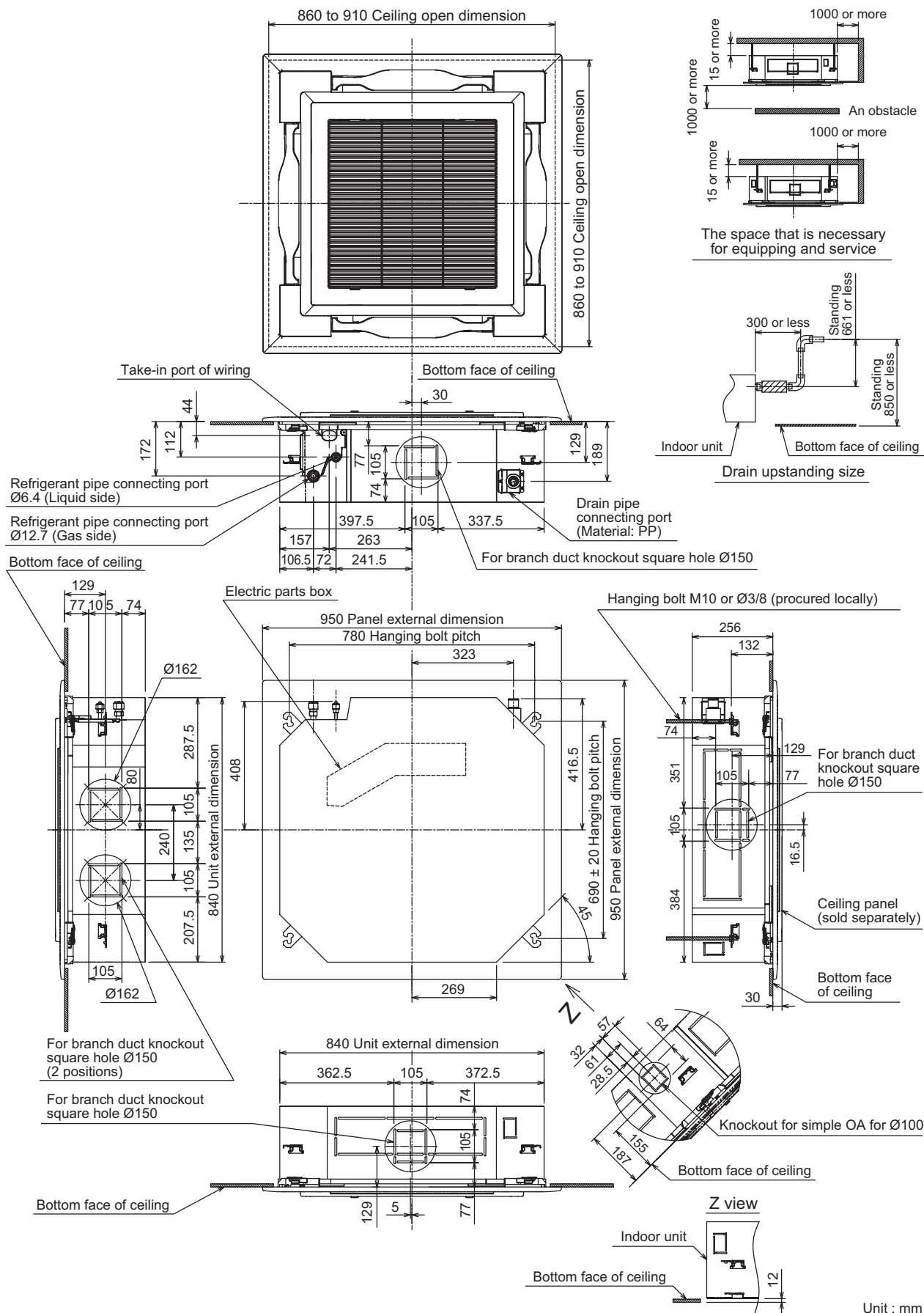
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

2. Dimensions

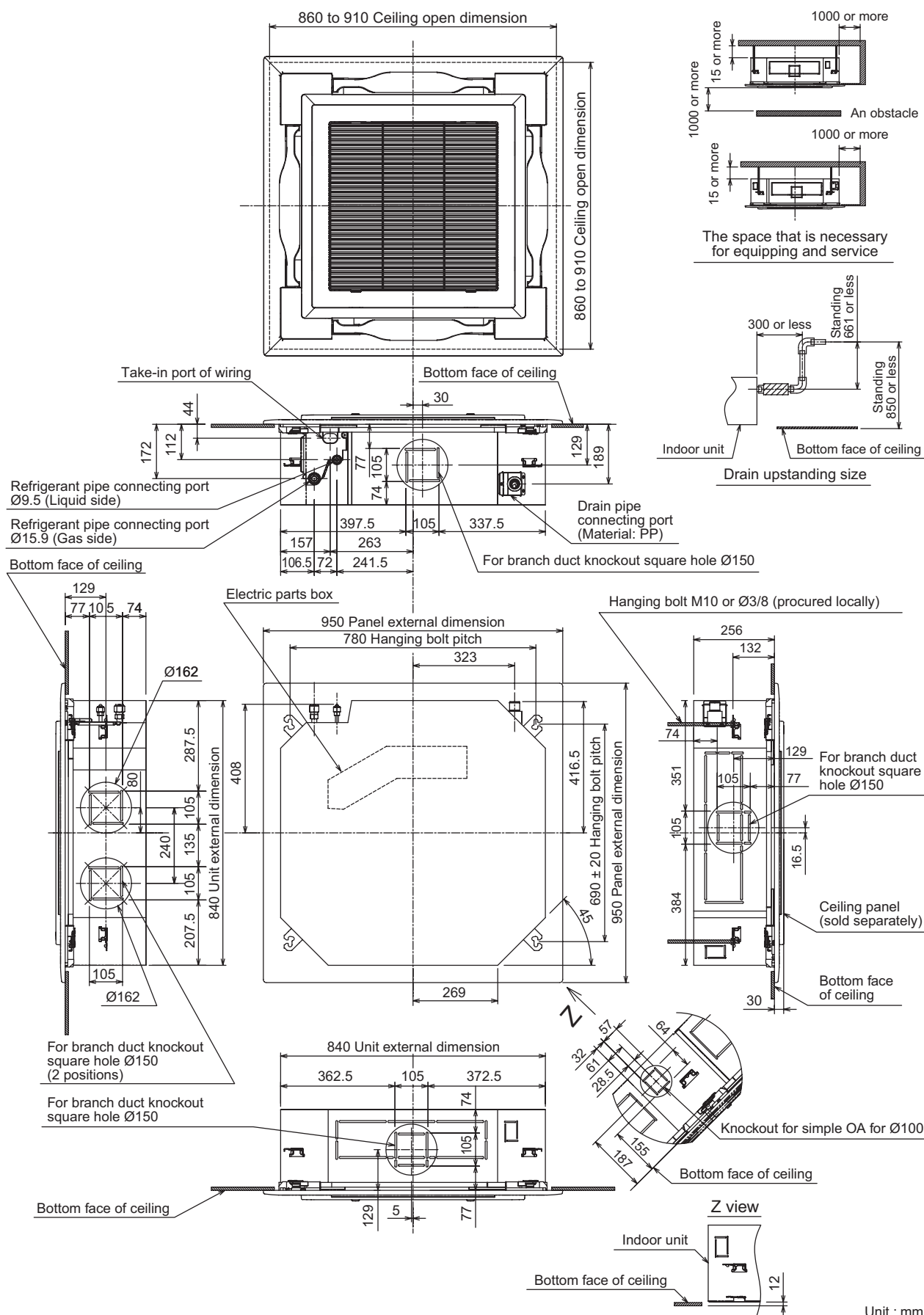
MMU-AP0092H, AP0122H



MMU-AP0152H, AP0182H

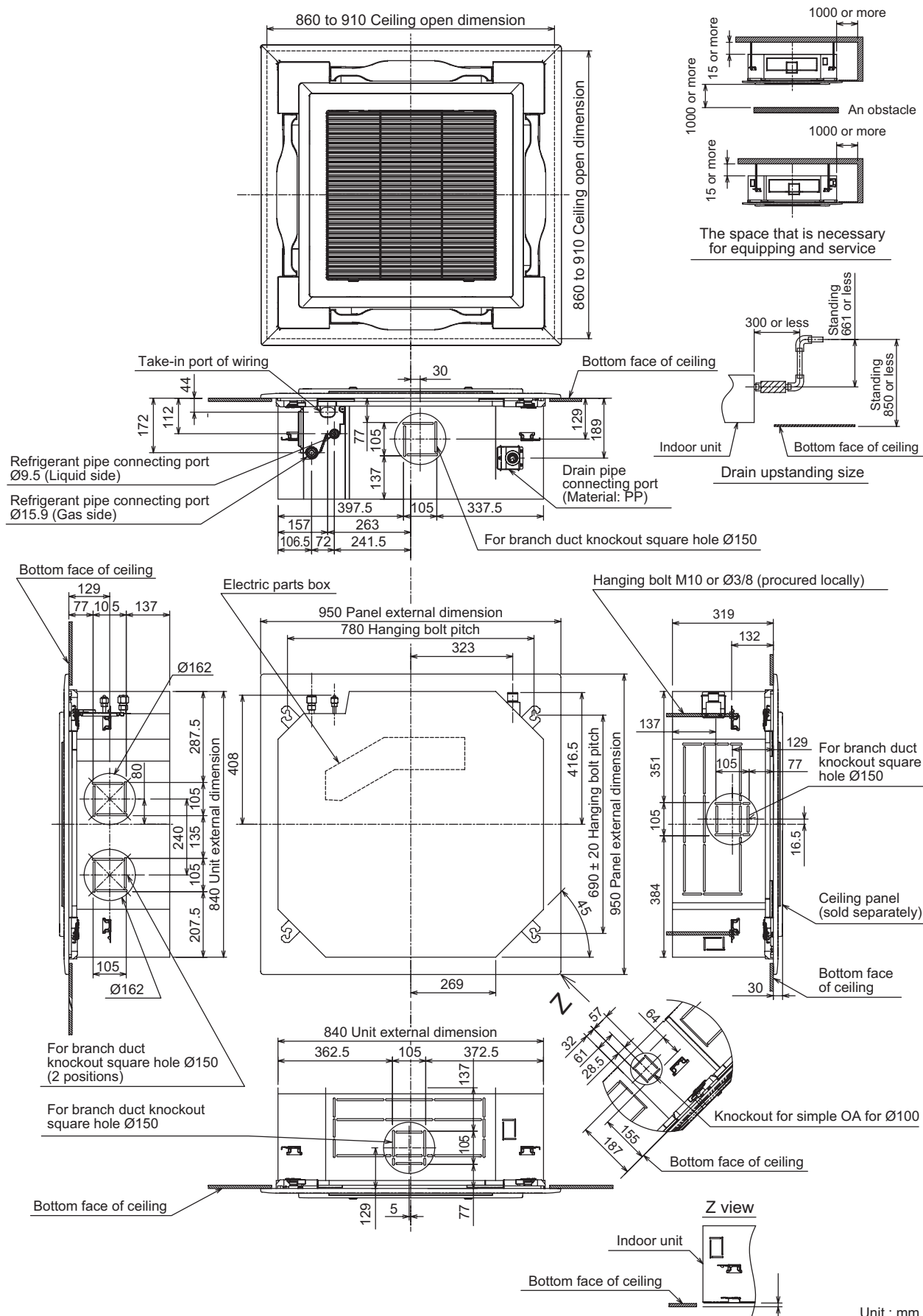


MMU-AP0242H, AP0272H, AP0302H



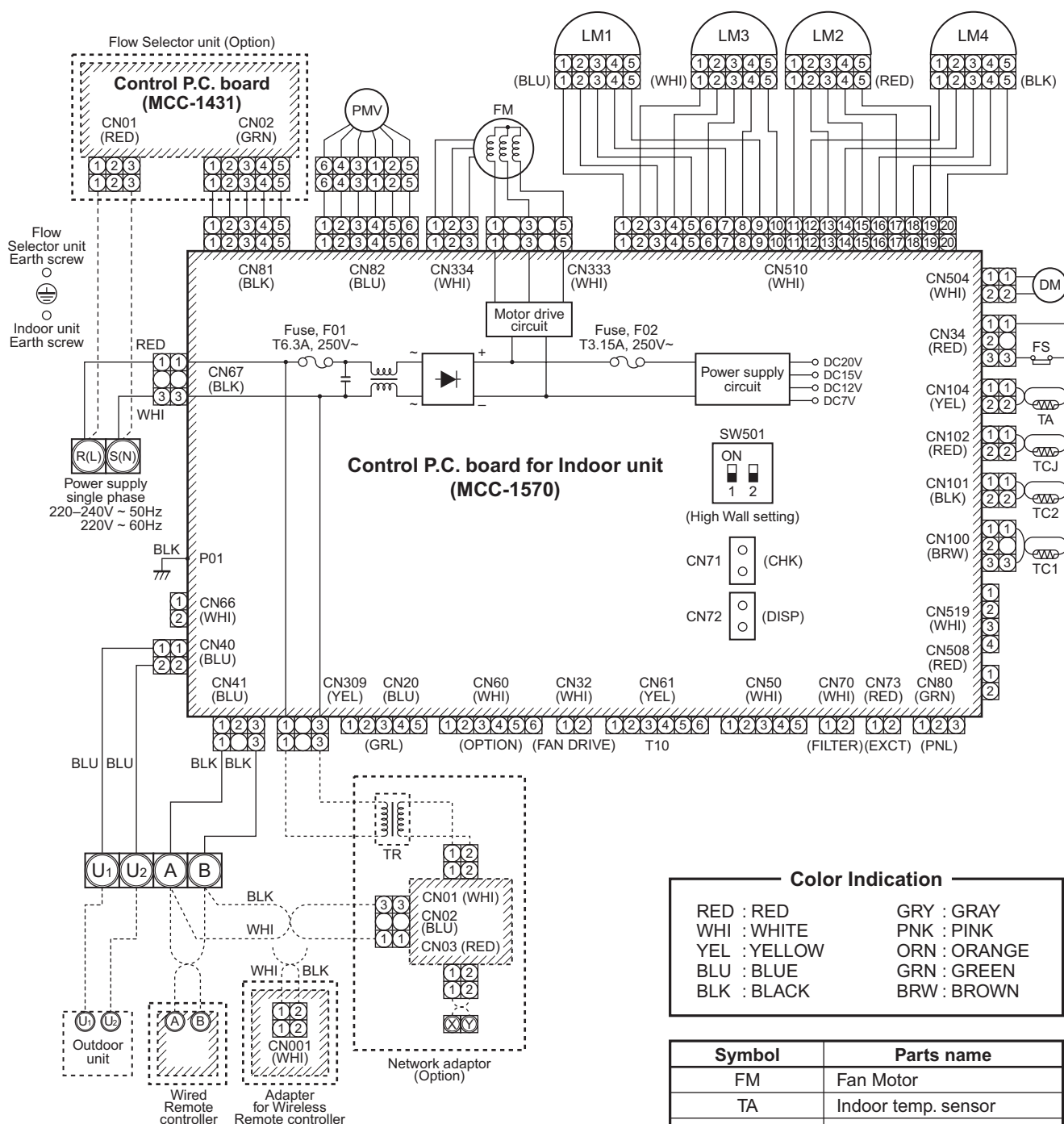
Unit : mm

MMU-AP0362H, AP0482H, AP0562H



3. Wiring diagram

MMU-AP0092H, AP0122H, AP0152H, AP0182H, AP0242H,
AP0272H, AP0302H, AP0362H, AP0482H, AP0562H

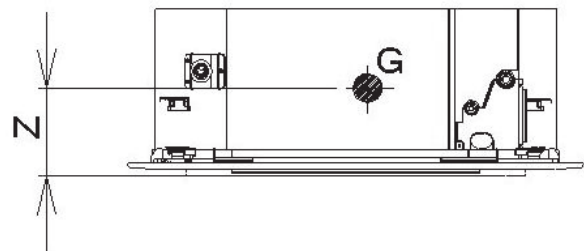
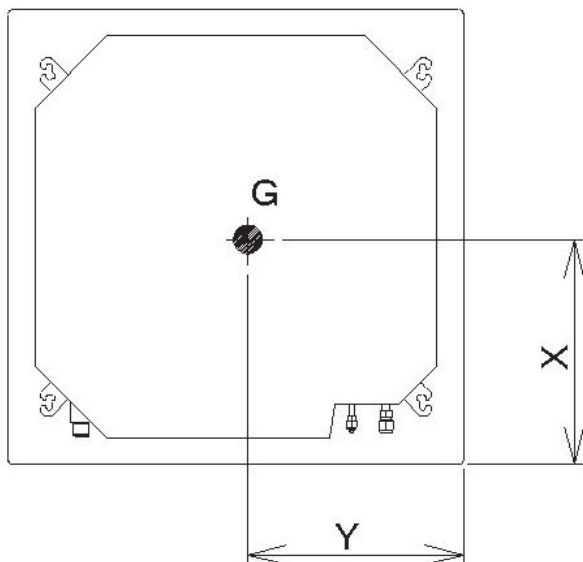


1. ○ indicates the terminal block.
Letter at inside indicates the terminal number.
2. A dotted line and broken line indicate the wiring site.
3. ▨ indicates the control P.C. board.

Symbol	Parts name
FM	Fan Motor
TA	Indoor temp. sensor
TC1, TC2, TCJ	Temp. sensor
LM1, 2, 3, 4	Louver Motor
DM	Drain pump Motor
FS	Float Switch
PMV	Pulse Motor Valve
TR	Power supply Transformer (For Network adaptor)

4. Center of Gravity

Model name	X(mm)	Y(mm)	Z(mm)	Total weight		
				Main unit (kg)	Ceiling panel (kg)	
MMU-AP0092H	470	455	154	18	4.0	
MMU-AP0122H				20		
MMU-AP0152H						
MMU-AP0182H						
MMU-AP0242H						
MMU-AP0272H						
MMU-AP0302H		450	184	25		
MMU-AP0362H						
MMU-AP0482H						
MMU-AP0562H						



5. Electrical characteristics

	Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
				Min	Max	kW	FLA	MCA	MOCP
50Hz	4-Way Air Discharge Cassette Type	MMU-AP0092H	230-1-50	198	264	0.014	0.63	0.79	15
		MMU-AP0122H	230-1-50	198	264	0.014	0.63	0.79	15
		MMU-AP0152H	230-1-50	198	264	0.014	0.80	1.00	15
		MMU-AP0182H	230-1-50	198	264	0.014	0.80	1.00	15
		MMU-AP0242H	230-1-50	198	264	0.020	0.87	1.09	15
		MMU-AP0272H	230-1-50	198	264	0.020	0.87	1.09	15
		MMU-AP0302H	230-1-50	198	264	0.020	0.87	1.09	15
		MMU-AP0362H	230-1-50	198	264	0.068	1.15	1.44	15
		MMU-AP0482H	230-1-50	198	264	0.072	1.15	1.44	15
		MMU-AP0562H	230-1-50	198	264	0.072	1.15	1.44	15

6. Sensible capacity table

4-way Discharge Cassette Type (MMU-AP***2H)

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
009	10.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	12.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	14.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	16.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	18.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	20.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	21.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	23.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	25.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	27.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	29.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	31.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	33.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	35.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
012	37.0	2.2	1.8	2.5	1.9	2.6	2.0	2.7	2.0	2.8	2.0	3.0	2.0	3.1	2.0
	39.0	2.2	1.8	2.4	1.9	2.6	2.0	2.6	2.0	2.7	2.0	2.9	2.0	3.0	1.9
	10.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	12.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	14.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	16.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	18.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	20.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	21.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	23.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	25.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	27.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	29.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	31.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
015	33.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	35.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	37.0	2.9	2.2	3.2	2.4	3.4	2.5	3.5	2.5	3.6	2.5	3.8	2.5	4.0	2.4
	39.0	2.8	2.2	3.1	2.3	3.3	2.5	3.4	2.4	3.5	2.4	3.7	2.4	3.9	2.4
	10.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	12.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	14.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	16.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	18.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	20.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	21.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	23.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	25.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	27.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
018	29.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	31.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	33.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	35.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	37.0	3.6	2.7	4.0	2.9	4.2	3.1	4.4	3.1	4.5	3.1	4.7	3.1	5.0	3.0
	39.0	3.5	2.7	3.8	2.8	4.1	3.0	4.2	3.0	4.4	3.0	4.6	3.0	4.8	2.9
	10.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	12.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	14.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	16.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	18.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	20.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	21.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	23.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	25.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	27.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	29.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	31.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	33.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	35.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	37.0	4.5	3.4	4.9	3.7	5.3	3.9	5.4	3.9	5.6	3.9	5.9	3.8	6.2	3.7
	39.0	4.3	3.3	4.8	3.6	5.1	3.8	5.3	3.8	5.4	3.8	5.7	3.7	6.0	3.6

TC: Total Capacity [kW]

SHC: Sensible Capacity [kW]

4-way Discharge Cassette Type (MMU-AP***2H)

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
024	10.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	12.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	14.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	16.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	18.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	20.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	21.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	23.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	25.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	27.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	29.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	31.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	33.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	35.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
027	37.0	5.6	4.2	6.2	4.5	6.7	4.8	6.9	4.7	7.1	4.7	7.5	4.7	7.8	4.6
	39.0	5.5	4.1	6.1	4.4	6.5	4.6	6.7	4.6	6.9	4.6	7.3	4.6	7.6	4.5
	10.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	12.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	14.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	16.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	18.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	20.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	21.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	23.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	25.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	27.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	29.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	31.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
030	33.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	35.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	37.0	6.4	4.7	7.0	5.0	7.5	5.3	7.7	5.3	8.0	5.3	8.4	5.3	8.8	5.2
	39.0	6.2	4.6	6.8	4.9	7.3	5.2	7.5	5.2	7.8	5.2	8.2	5.1	8.6	5.0
	10.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	12.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	14.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	16.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	18.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	20.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	21.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	23.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	25.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	27.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
036	29.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	31.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	33.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	35.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	37.0	7.2	5.3	7.9	5.7	8.5	6.0	8.7	6.0	9.0	6.0	9.5	5.9	9.9	5.8
	39.0	7.0	5.2	7.7	5.5	8.2	5.9	8.5	5.8	8.7	5.8	9.2	5.8	9.7	5.6
	10.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	12.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	14.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	16.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	18.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	20.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	21.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	23.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	25.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	27.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	29.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	31.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	33.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	35.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	37.0	8.9	6.6	9.8	7.0	10.5	7.5	10.8	7.5	11.2	7.5	11.8	7.4	12.4	7.2
	39.0	8.7	6.4	9.6	6.8	10.2	7.3	10.5	7.2	10.9	7.2	11.5	7.2	12.0	7.0

TC: Total Capacity [kW]

SHC: Sensible Capacity [kW]

4-way Discharge Cassette Type (MMU-AP***2H)

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
048	10.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	12.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	14.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	16.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	18.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	20.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	21.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	23.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	25.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	27.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	29.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	31.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	33.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	35.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
056	37.0	11.1	8.4	12.3	9.0	13.1	9.5	13.6	9.5	14.0	9.5	14.8	9.4	15.4	9.2
	39.0	10.8	8.2	12.0	8.7	12.8	9.2	13.2	9.2	13.6	9.2	14.4	9.1	15.0	8.9
	10.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	12.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	14.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	16.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	18.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	20.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	21.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	23.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	25.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	27.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	29.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	31.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	33.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	35.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	37.0	12.7	9.4	14.1	10.1	15.0	10.7	15.5	10.6	16.0	10.6	16.9	10.5	17.7	10.3
	39.0	12.4	9.2	13.7	9.8	14.6	10.4	15.1	10.4	15.5	10.4	16.4	10.3	17.2	10.0

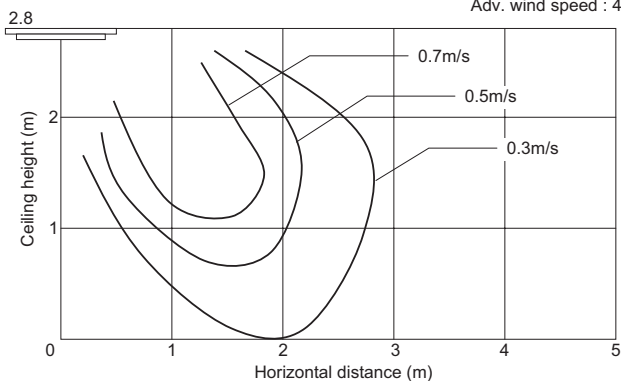
TC: Total Capacity [kW]

SHC: Sensible Capacity [kW]

7. Air throw distance chart

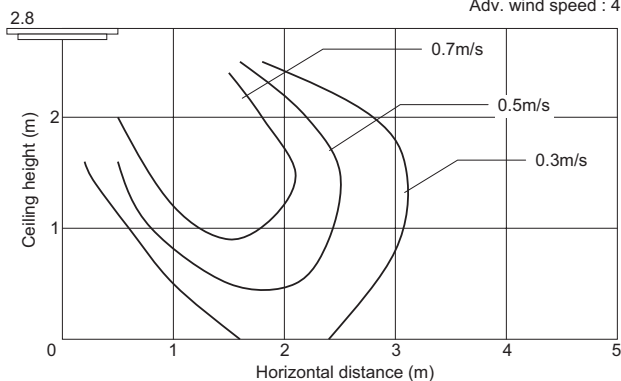
MMU-AP0092H / AP0122H

Adv. wind speed : 4.9



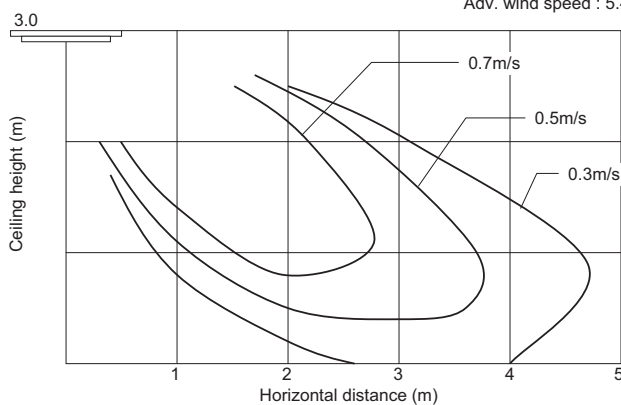
MMU-AP0152H / AP0152H

Adv. wind speed : 4.3



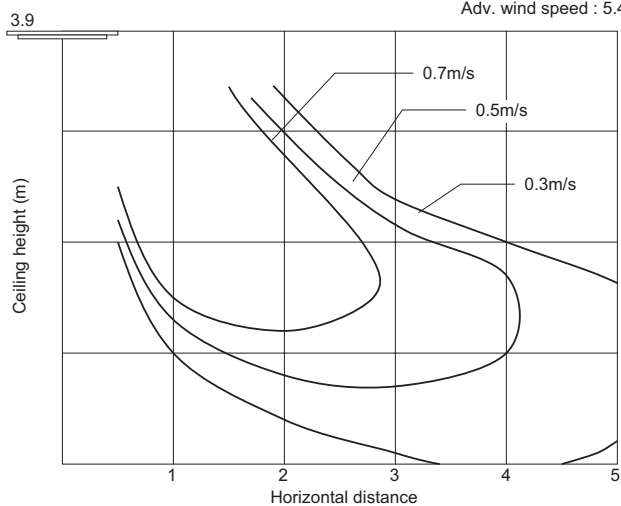
MMU-AP0242H/AP0272H/AP0302H

Adv. wind speed : 5.4



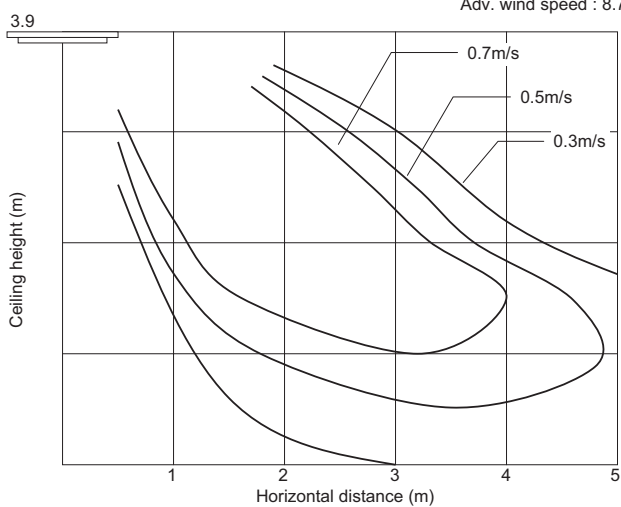
MMU-AP0362H

Adv. wind speed : 5.4



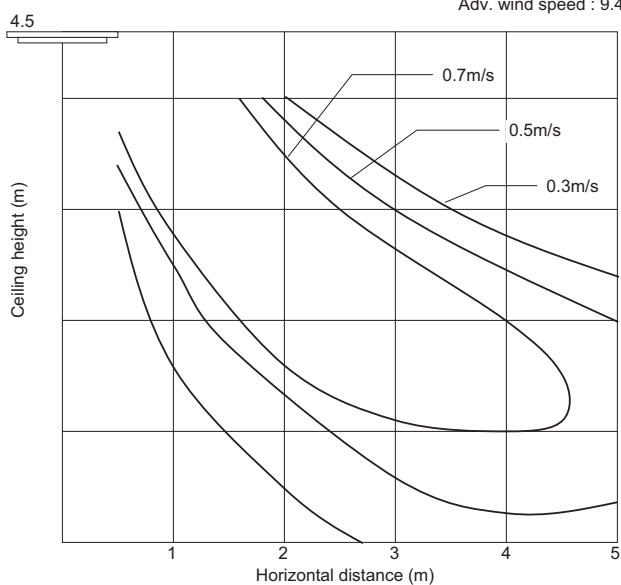
MMU-AP0482H / AP0561H

Adv. wind speed : 8.7

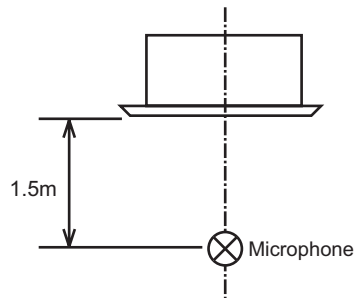


MMU-AP0362H / AP0482H / AP0562H (High ceiling 3)

Adv. wind speed : 9.4

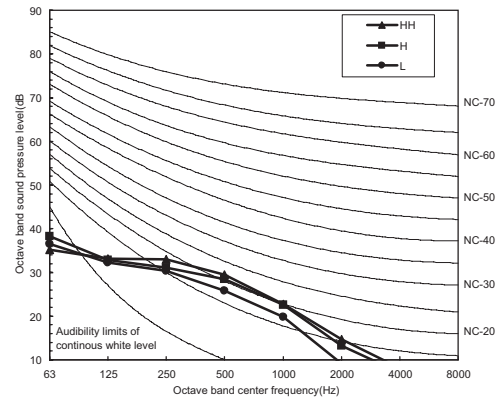


8. Sound characteristics (NC-Curve)



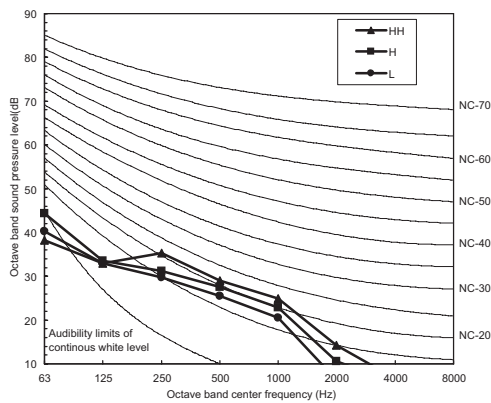
MMU-AP0092H/AP0122H

Sound pressure level(dB)(A)	HH-H-L
	30-29-27



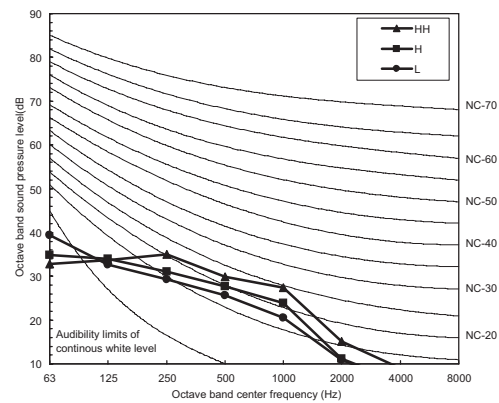
MMU-AP0152H

Sound pressure level(dB)(A)	HH-H-L
	31-29-27



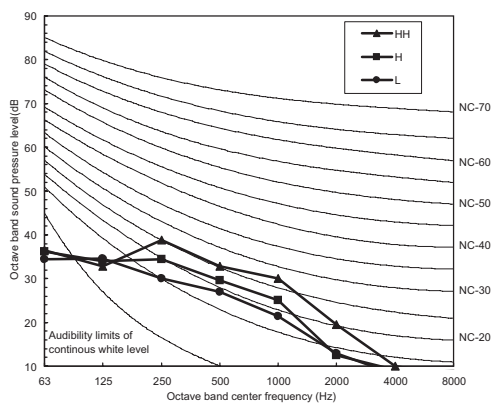
MMU-AP0182H

Sound pressure level(dB)(A)	HH-H-L
	32-29-27



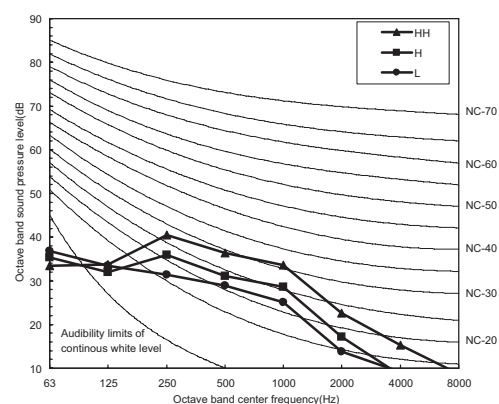
MMU-AP0242H/AP0272H

Sound pressure level(dB)(A)	HH-H-L
	35-31-28



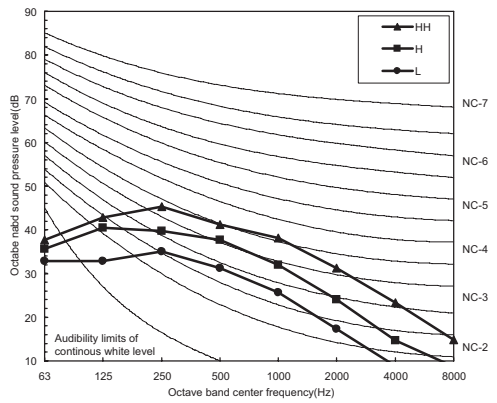
MMU-AP0302H

Sound pressure level(dB)(A)	HH-H-L
	38-33-30



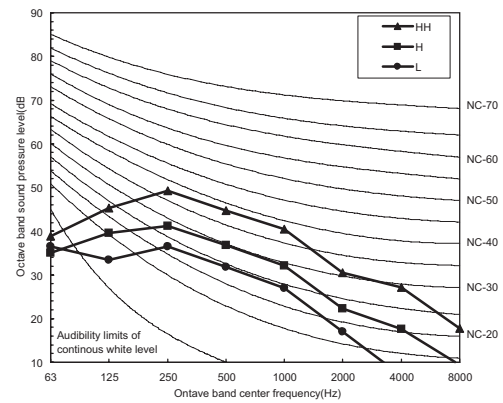
MMU-AP0362H

Sound pressure	HH-H-L
level(dB)(A)	43-38-32



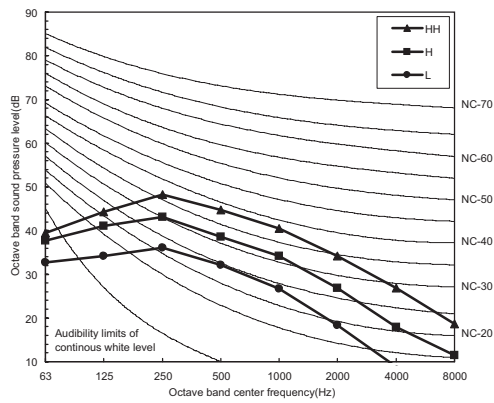
MMU-AP0482H

Sound pressure	HH-H-L
level(dB)(A)	46-38-33



MMU-AP0562H

Sound pressure	HH-H-L
level(dB)(A)	46-40-33



9. Fresh air intake (Design guide)

4-way Air Discharge Cassette Type (2series)

Usage

The fresh air and filter chamber is used as the filter chamber.

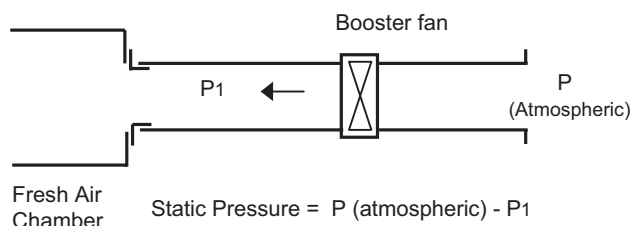
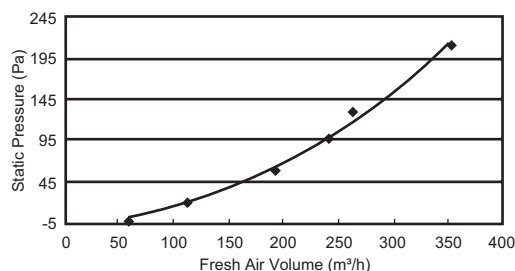
Fresh air intake by using the fresh air and filter chamber and fresh air inlet box.

Usage as the filter chamber

In case the optional filter is used, air volume may decrease. This can cause decrease temperature of cooling air flow and dew drop.

Caution

1. Be sure to provide air return.
2. The fresh air shall be treated by heat reclaim ventilator or the like.
3. Recommended treated air temperature is 12C to 30C.
4. Be sure to decide the fresh air volume so that mixed suction air with fresh air keep operating temperature. Provide an air filter in fresh air way to prevent sucking dust.
5. Be sure to insulate the fresh air duct.
In order to accelerate starting up in heating mode, implement pre-heating operation by cutting off fresh air intake.



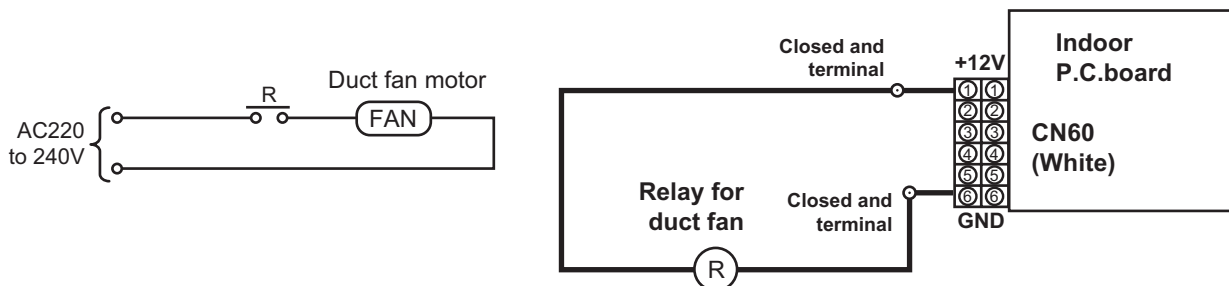
Characteristics between air volume of branching duct and static pressure

Up to 20% fresh air intake ratio is available by using the booster fan.

fresh air intake ratio = (fresh air volume) / (total air volume) X 100 %

Inter - lock circuit

1. Connect the driving relay of the duct fan (DC 12 V) between 1 and 6 on the indoor P.C.board.
Part indicated with a bold line is the connecting circuit.
After installation, implement a trial operation to check that the duct fan of the indoor unit start / stop simultaneously.
(Implement the trial operation following to the installation manual of the indoor unit.)

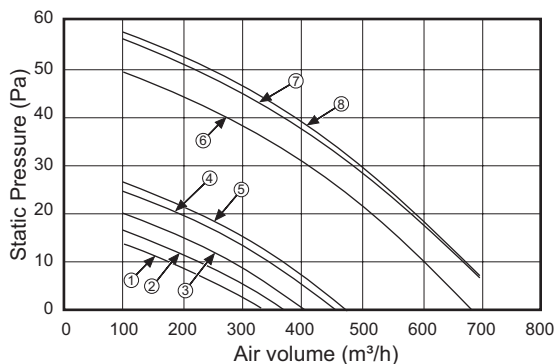


10. Branching duct (Design guide)

4-way Air Discharge Cassette Type (2series)

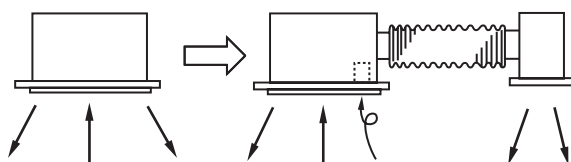
Characteristics between air volume of branching duct and static pressure

In case of connecting dia.=150mm branching duct, static pressure is as follows.



	VRF
①	009type,012type
②	015type
③	018type
④	024type,027type
⑤	030type
⑥	036type
⑦	048type
⑧	056type

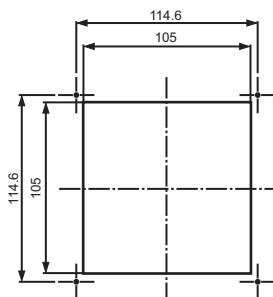
Cover method



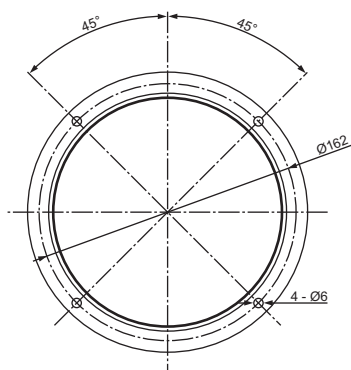
Use air discharge direction kit (TCB-BC1602UE) to cover the air discharge port.

Install the cover

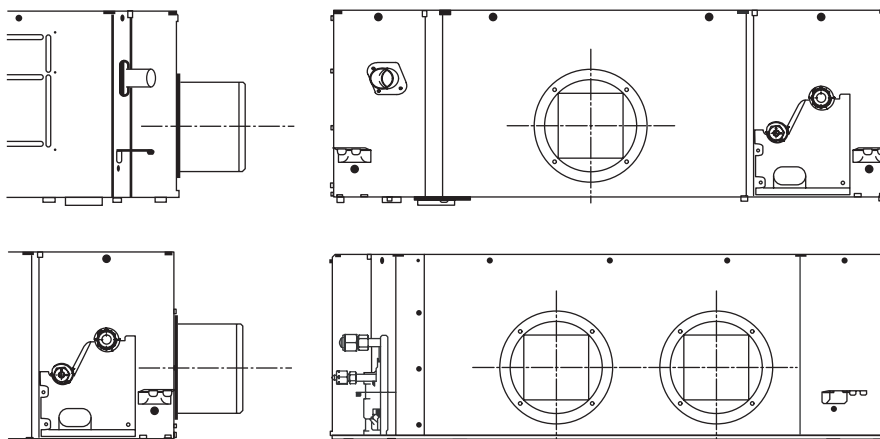
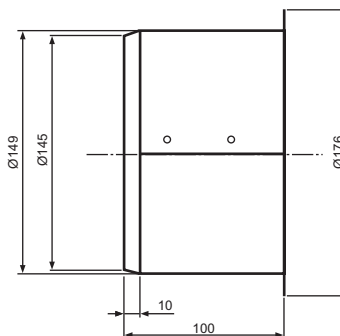
Dimension



Knockout square for branching duct in indoor unit



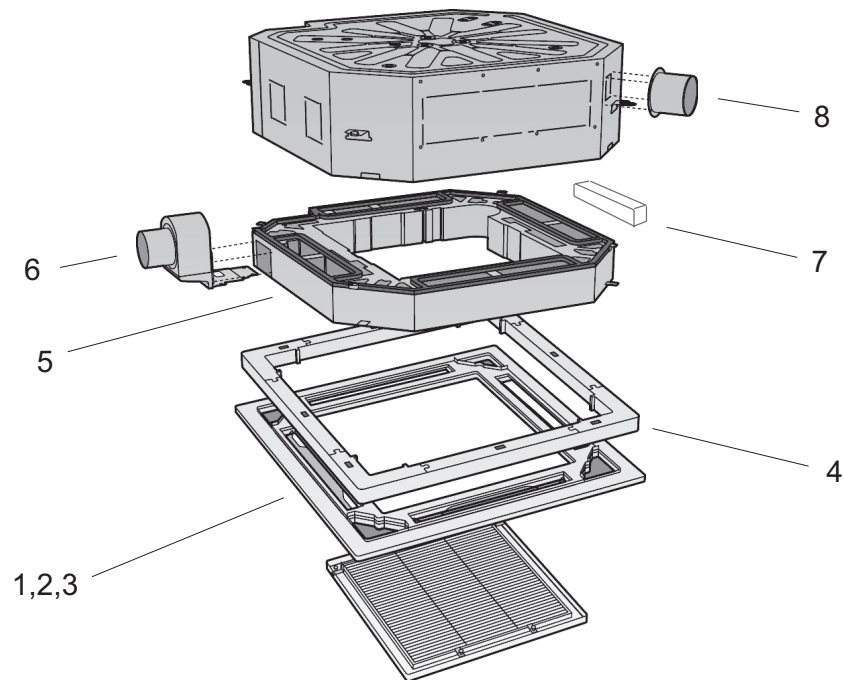
Design sample of branching duct flange



Installation sample

11. Accessories

Optional parts for 4way cassette series2



Optional parts list

No	Type	Model name	Qty/unit	note
1	Ceiling Panel (wide-flow louver)	RBC-U31PG(W)-E	1	White (2.5GY9.0/0.5)
2	Ceiling Panel (straight louver)	RBC-U31PGS(W)-E	1	White (2.5GY9.0/0.5)
3	Ceiling Panel (straight louver)	RBC-U31PGS(WS)-E	1	white/gray (2.5GY9.0/0.5 , 8B3/0.3)
4	Spacer for height adjustment	TCB-SP1602UE	1	50mm
5	Fresh-air chamber	TCB-GFC1602UE	1	use with TCB-GB1602U
6	Fresh-air inlet box	TCB-GB1602UE	1	connection=Dia.100mm Fresh air intake ratio : Up to 20%
7	Air-discharge direction kit	TCB-BC1602UE	1	6-direction patterns
8	Auxiliary fresh air flange	TCB-FF101URE2	1	connection=Dia.100mm Fresh air intake ratio : Up to 5%

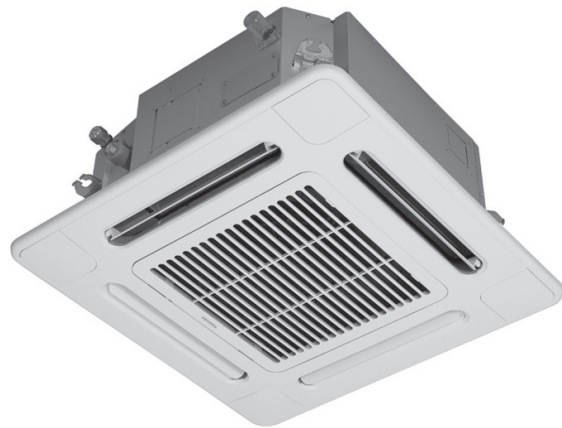


11-2-2. Compact 4-way Cassette(600x600) Type

Compact 4-way Cassette (600 x 600) Type

Indoor Unit

MMU-AP0074MH-E
MMU-AP0094MH-E
MMU-AP0124MH-E
MMU-AP0154MH-E
MMU-AP0184MH-E



1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
5. Sensible capacity table
6. Electrical characteristics
7. Air throw distance chart
8. Sound characteristics (NC-Curve)
9. Fresh air intake(Design guide)
10. Branching Duct(Design guide)
11. Accessories

1. Specifications

■ Compact 4-way Cassette (600 x 600) Type



Model name		MMU-	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184MH-E
Cooling/Heating capacity (Note 1)		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3
Electrical characteristics	Power supply		1 phase 50Hz 230V (220-240V) (Separate power supply for indoor units is required.)				
	Running current (A)		0.28	0.30	0.31	0.34	0.42
	Power consumption (kW)		0.034	0.036	0.038	0.041	0.052
	Starting current (A)		0.49	0.52	0.54	0.59	0.73
Appearance	Main unit		Zinc hot dipping steel plate *Heat-insulating material attached to only upper plate				
	Ceiling Panel	Model	RBC-UM11PG(W)E				
		Panel color	Moon white (Munsell/2.5GY 9.0/0.5)				
Outer dimension	Main unit	Height (mm)	268				
		Width (mm)	575				
		Depth (mm)	575				
	Ceiling panel	Height (mm)	27				
		Width (mm)	700				
		Depth (mm)	700				
Total weight	Main unit (kg)		17				
	Ceiling panel (kg)		3				
Heat exchanger			Finned tube				
Soundproof/Heat-insulating material			Non-flammable insulation				
Fan unit	Fan		Turbo fan				
	Standard air flow (High/Mid/Low) (m³/h)		552/462/378	570/468/378	594/504/402	660/552/468	762/642/522
	Motor output (W)		60				
Air filter			Long life filter				
Controller			Remote controller				
Connecting pipe	Gas side (mm)		Ø 9.5			Ø 12.7	
	Liquid side (mm)		Ø 6.4				
	Drain port (Nominal dia. mm)		25 (Polyvinyl chloride tube)				
Sound pressure level (Note 2) (High/Mid/Low)		(dB(A))	36/32/28	37/33/28	37/33/29	40/35/30	44/39/34
PMV Kit			Available				

Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consist of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

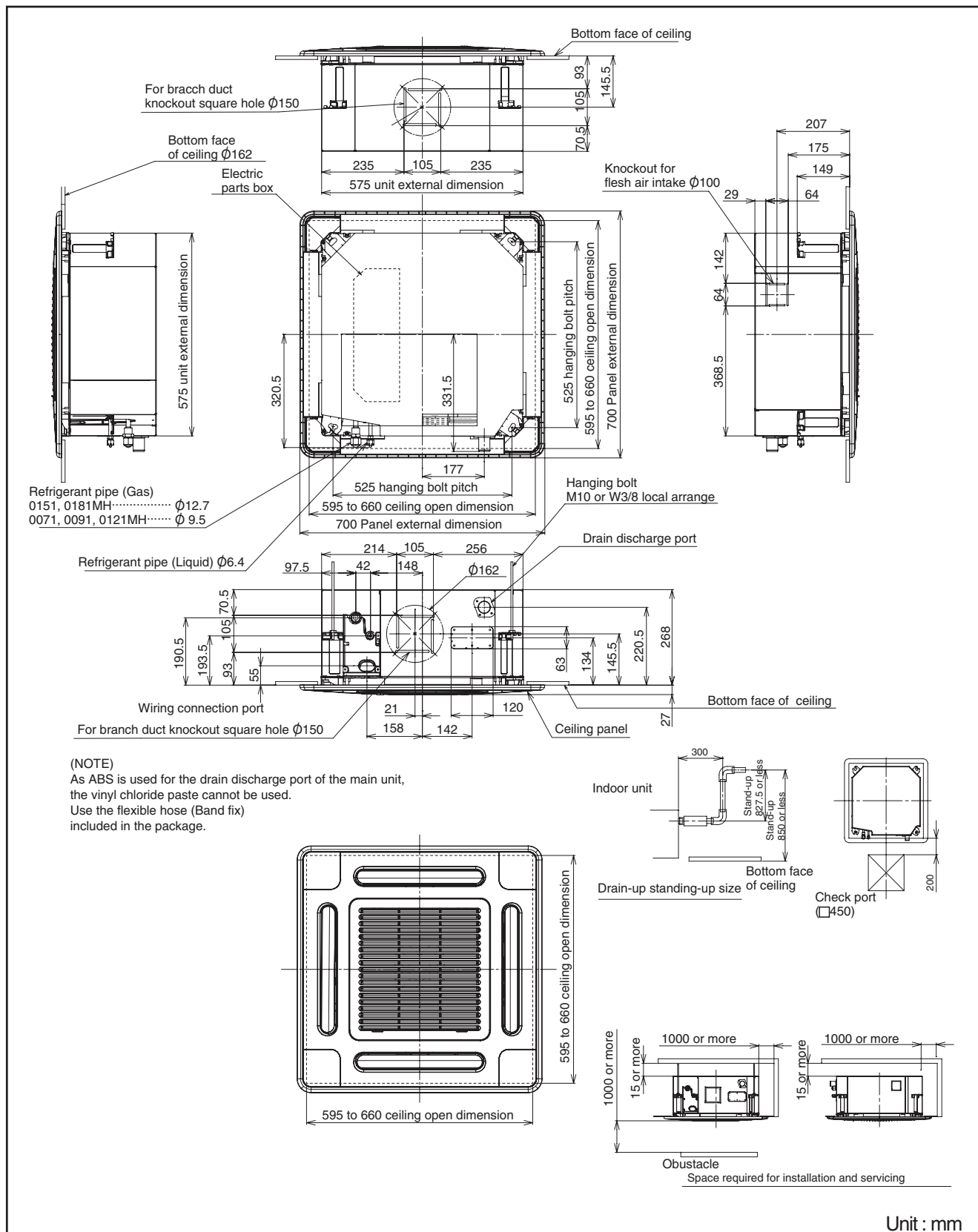
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

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

2. Dimension

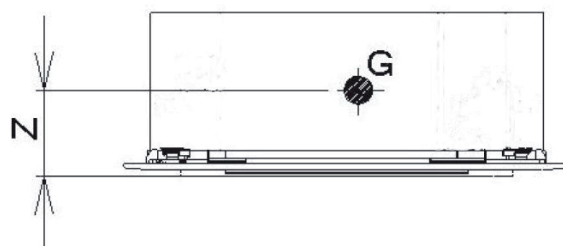
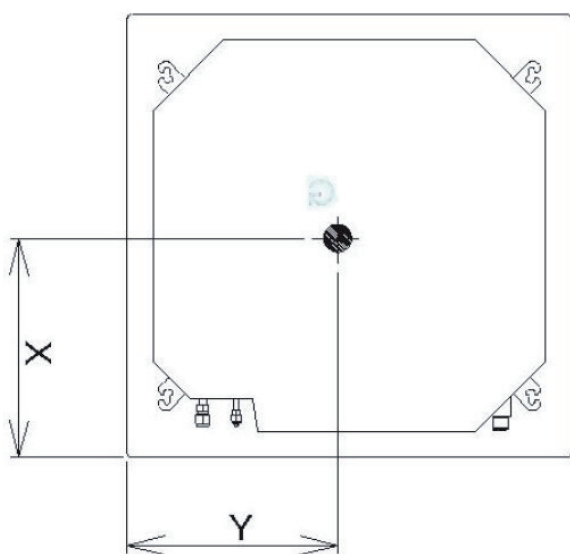
■ Compact 4-way Cassette (600 x 600) Type

MMU-AP0074MH-E, AP0094MH-E, AP0124MH-E, AP0154MH-E, AP0181MH



4. Center of Gravity

Model name	X (mm)	Y (mm)	Z (mm)	Total weight	
				Main unit (Kg)	Ceiling panel (Kg)
MMU-AP0074MH-E	316.5	336.5	174	17	3
MMU-AP0091MH-E					
MMU-AP0121MH-E					
MMU-AP0151MH-E					
MMU-AP0181MH-E					



5. Sensible capacity table

■ Compact 4-way Cassette (600 x 600) Type (MMU-***4MH-E)

TC: Total capacity[kW] SHC: Sensible capacity[kW]

unit size	outdoor air temp. CDB	indoor air temp.													
		14.0CWB		16.0CWB		18.0CWB		19.0CWB		20.0CWB		22.0CWB		24.0CWB	
		20CDB		23CDB		26CDB		27CDB		28CDB		30CDB		32CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	12.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	14.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	16.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	18.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	20.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	21.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	23.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	25.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	27.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	29.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	31.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	33.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
009	35.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	37.0	1.7	1.5	1.9	1.6	2.1	1.7	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6
	39.0	1.7	1.4	1.9	1.5	2.0	1.6	2.1	1.6	2.1	1.6	2.3	1.6	2.4	1.5
	10.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	12.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	14.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	16.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	18.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	20.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	21.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	23.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	25.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	27.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
012	29.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	31.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	33.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	35.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	37.0	2.2	1.7	2.5	1.8	2.6	1.9	2.7	1.9	2.8	1.9	3.0	1.9	3.1	1.9
	39.0	2.2	1.7	2.4	1.8	2.6	1.9	2.6	1.9	2.7	1.9	2.9	1.9	3.0	1.8
	10.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	12.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	14.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	16.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	18.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	20.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	21.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	23.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
015	25.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	27.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	29.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	31.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	33.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	35.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	37.0	2.9	2.1	3.2	2.3	3.4	2.4	3.5	2.4	3.6	2.4	3.8	2.4	4.0	2.3
	39.0	2.8	2.1	3.1	2.2	3.3	2.4	3.4	2.4	3.5	2.4	3.7	2.3	3.9	2.3
	10.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	12.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	14.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	16.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	18.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	20.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	21.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	23.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	25.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	27.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	29.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	31.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	33.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	35.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	37.0	3.6	2.7	4.0	2.8	4.2	3.0	4.4	3.0	4.5	3.0	4.7	3.0	5.0	2.9
	39.0	3.5	2.6	3.8	2.8	4.1	2.9	4.2	2.9	4.4	2.9	4.6	2.9	4.8	2.8

TC:Total capacity[kW] SHC:Sensible capacity[kW]

unit size	outdoor air temp. CDB	indoor air temp.													
		14.0CWB		16.0CWB		18.0CWB		19.0CWB		20.0CWB		22.0CWB		24.0CWB	
		20CDB		23CDB		26CDB		27CDB		28CDB		30CDB		32CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	10.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	12.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	14.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	16.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	18.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	20.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	21.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	23.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	25.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	27.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	29.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	31.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	33.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	35.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	37.0	4.5	3.1	4.9	3.3	5.3	3.5	5.4	3.5	5.6	3.5	5.9	3.5	6.2	3.4
	39.0	4.3	3.0	4.8	3.2	5.1	3.4	5.3	3.4	5.4	3.4	5.7	3.4	6.0	3.3

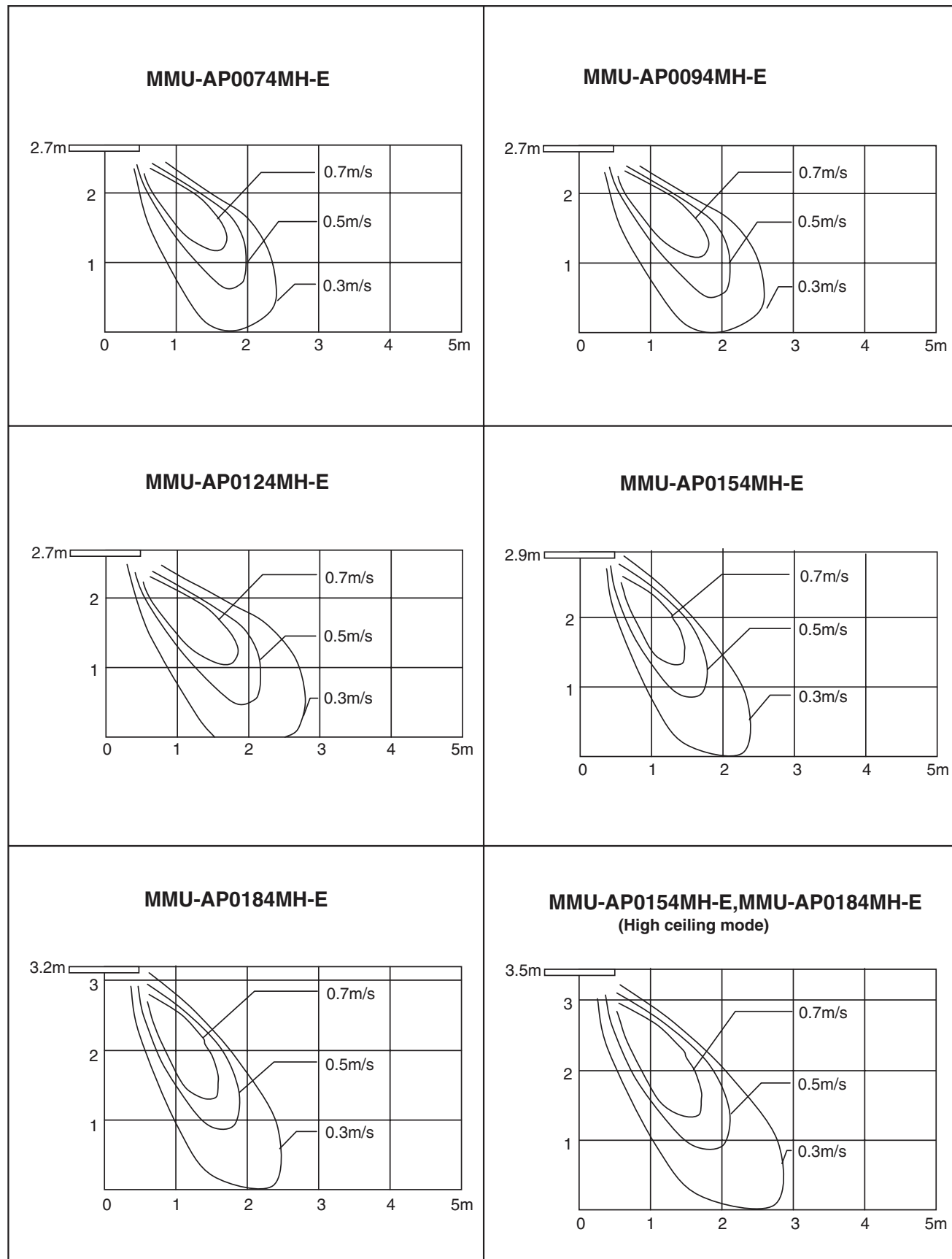
6. Electrical characteristics

■ Compact 4-way Cassette (600 x 600) Type

	Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
				Min	Max	kW	FLA	MCA	MOCP
50Hz	Compact 4-way Cassette (600 x 600) Type	MMU-AP 0074 MH-E	230-1-50	198	264	0.060	0.32	0.40	15
		MMU-AP 0094 MH-E	230-1-50	198	264	0.060	0.35	0.44	15
		MMU-AP 0124 MH-E	230-1-50	198	264	0.060	0.36	0.45	15
		MMU-AP 0154 MH-E	230-1-50	198	264	0.060	0.48	0.60	15
		MMU-AP 0184 MH-E	230-1-50	198	264	0.060	0.48	0.60	15

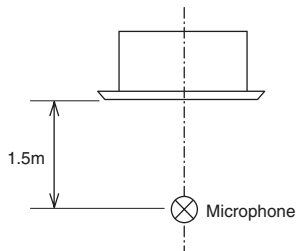
7. Air throw distance chart

■ Compact 4-way Cassette (600 x 600) Type



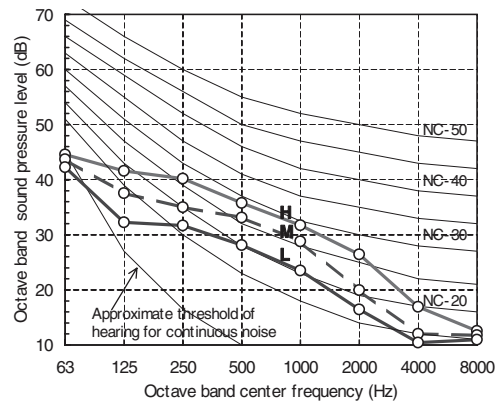
8. Sound Characteristics (NC-Curve)

■ Compact 4-way Cassette (600 x 600) Type



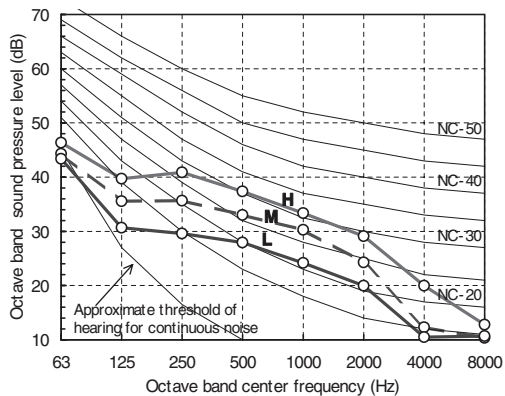
MMU-AP0074MH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	36	32	28



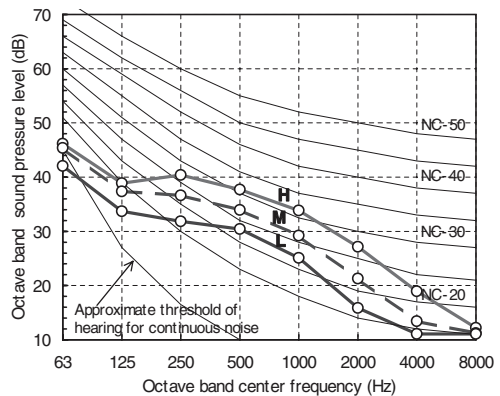
MMU-AP0094MH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	37	33	28



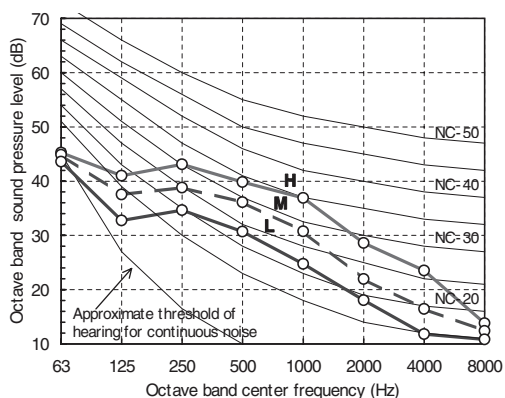
MMU-AP0124MH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	37	33	29



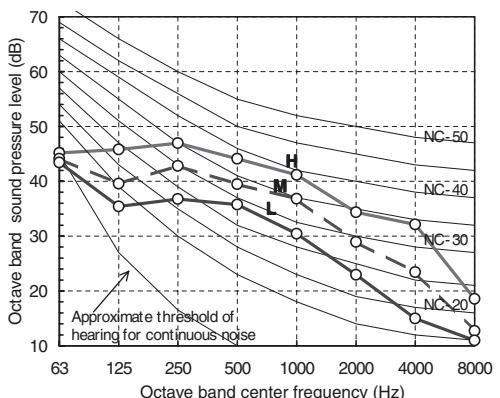
MMU-AP0154MH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	40	35	30



MMU-AP0184MH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	44	39	34



9. Fresh air intake (Design guide)

■ Compact 4-way Cassette (600 x 600) Type

Caution

The fresh air shall be conditioned by a heat reclaim ventilator or similar.

Ensure the fresh air volume is determined so that mixed suction air and fresh air can maintain the operating temperature.

*1. Recommended conditioned air temperature is 12 °C to 30 °C.

However, Make a fresh air volume within 20% of standard.

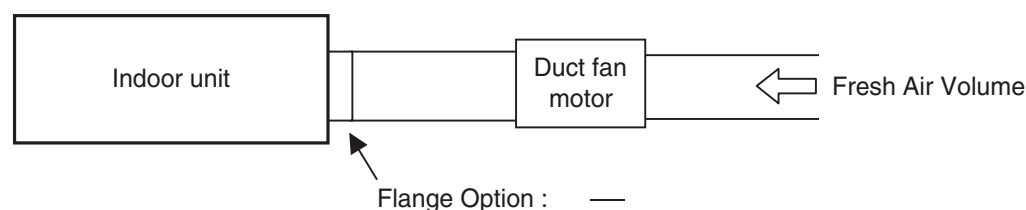
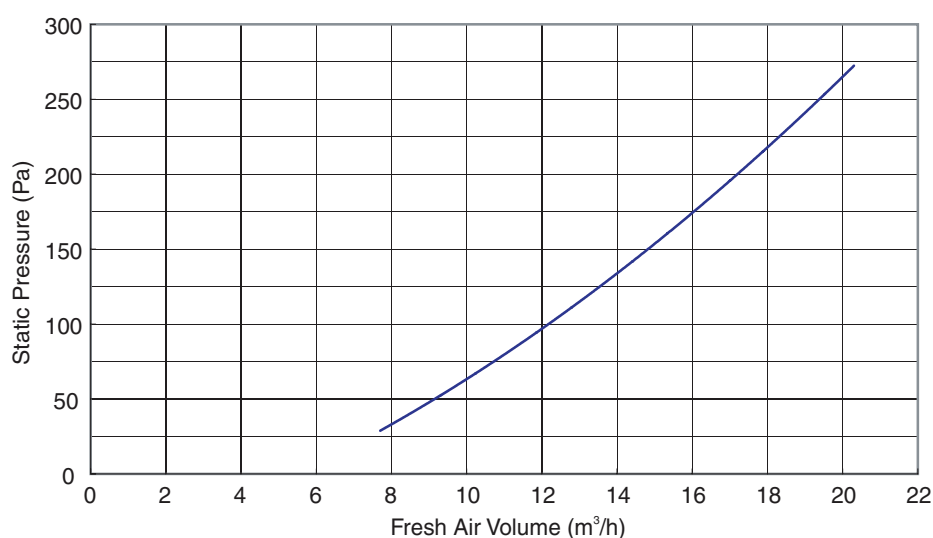
Model name	MMU-	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184MH-E
Standard air flow	(m³/h)	552	570	594	660	762

Install a filter within the fresh air duct.

(Fresh air does not pass through the filter of Indoor unit.)

Insulate the fresh air duct.

Electrically connect the fan of the Heat exchanger unit and the Indoor unit to a single isolator.



Inter - lock circuit

Connect the driving relay of the duct fan(DC 12V) between 1 and 6 on the indoor P.C. board.

(Rated current of the relay for duct fan should be up to 75mA.)

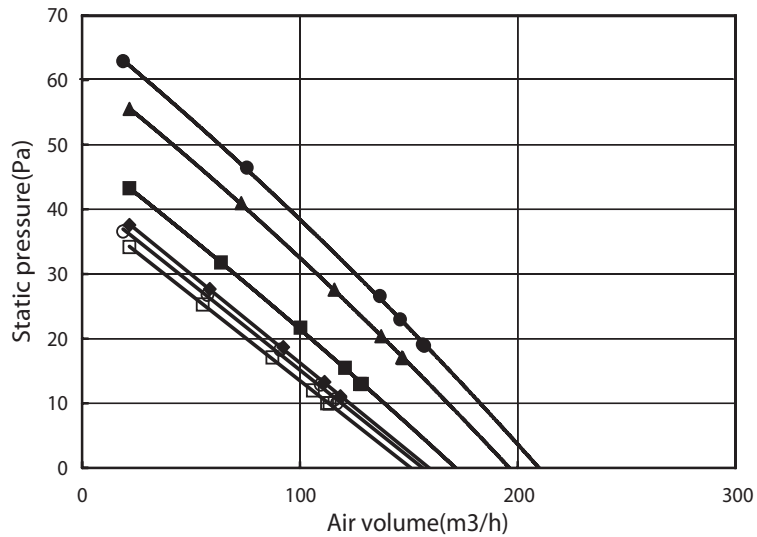
After installation, carry out a trial operation to check that the duct fan of the indoor unit start/stop simultaneously.

(Carry out the trial operation following the installation manual of the indoor unit.)

10. Branching Duct (design guide)

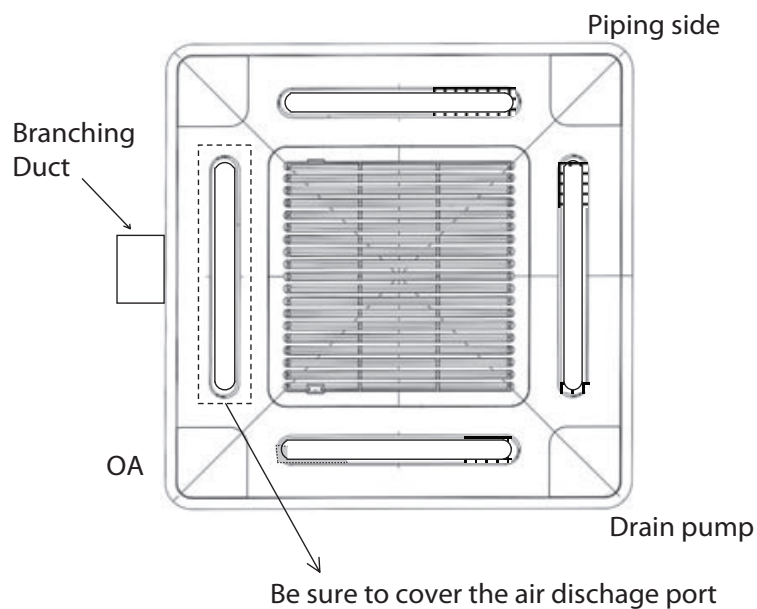
■ Compact 4-way Cassette (600 x 600) Type

Characteristics between air volume of branching duct and static pressure



	VRF	DI, SDI
●	MMU-AP0184MH-E*	SM562MUT-E
▲	MMU-AP0184MH-E	SM562MUT-E
■	MMU-AP0154MH-E	SM452MUT-E SM402MUT-E
◆	MMU-AP0124MH-E	-
○	MMU-AP0094MH-E	-
□	MMU-AP0074MH-E	-

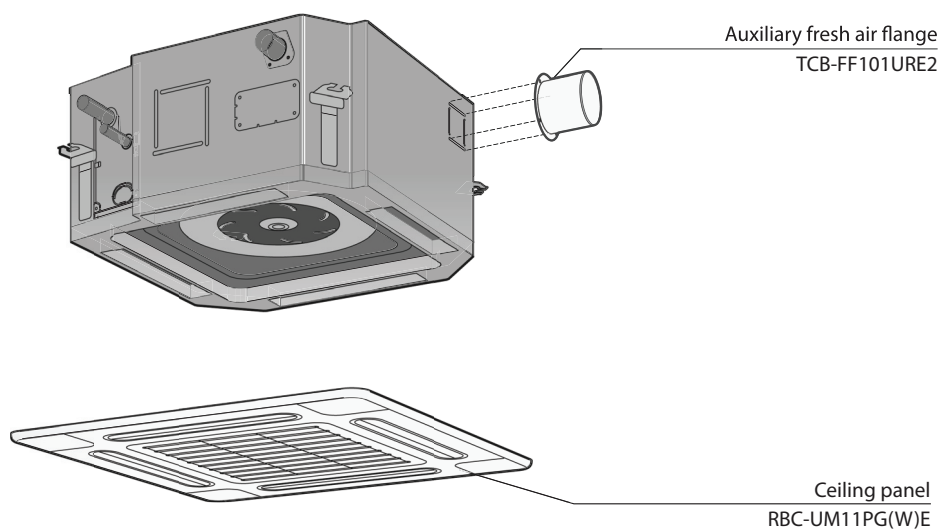
* High ceiling mode



11. Accessories

■ Compact 4-way Cassette (600 x 600) Type

Optional accessories



Parts Name	Model name	Applied Model	Notes
Ceiling panel	RBC-UM11PG(W)E	MMU-AP***4MH-E	Required accessory
Auxiliary fresh air Flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit.(dia=100mm)

11-2-3. 2-way Air Discharge Cassette Type

2-way Air Discharge Cassette Type

MMU-AP0072WH / MMU-AP0092WH
MMU-AP0122WH / MMU-AP0152WH
MMU-AP0182WH / MMU-AP0242WH
MMU-AP0272WH / MMU-AP0302WH
MMU-AP0362WH / MMU-AP0482WH
MMU-AP0562WH



Contents

1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
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6. Sensible capacity table
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8. Sound characteristics (NC-Curve)
9. Fresh air intake (Design guide)
10. Accessories

1. Specifications

2-way Air Discharge Cassette Type



Model name			MMD-	AP0072WH	AP0092WH	AP0122WH	AP0152WH	AP0182WH	AP0242WH	AP0272WH	AP0302WH	AP0362WH	AP0482WH	AP0562WH
Cooling/Heating capacity (Note 1)			(kW)	2.2 / 2.5	2.8 / 3.2	3.6 / 4.0	4.5 / 5.0	5.6 / 6.3	7.1 / 8.0	8.0 / 9.0	9.0 / 10.0	11.2 / 12.5	14.0 / 16.0	16.0 / 18.0
Electical characteristics	Power supply		1 phase 50Hz 230V (220-240V) (Sepateate power supply for indoor units is required.)											
	Running current (A)		0.23				0.24	0.32	0.39		0.46	0.48	0.57	0.75
	Power consumption (kW)		0.029				0.03	0.044	0.054		0.064	0.073	0.088	0.117
	Power factor (%)		55				54	60				66	67	68
	Starting current (A)		0.35				0.36	0.48	0.59		0.69	0.72	0.86	1.13
Appearance	Main unit		Heat-insulating material attached Zinc hot dipping steel plate											
Ceiling panel	Model		RBC-UW283PG(W)-E				RBC-UW803PG(W)-E				RBC-UW1403PG(W)-E			
Panel colour			Moon white(Munsell 2.5GY9.0/0.5)											
Outer dimentions	Main unit	Hight (mm)	295				345							
		Width (mm)	815				1180				1600			
		Depth (mm)	570											
	Ceiling panel	Hight (mm)	20											
		Width (mm)	1050				1415				1835			
		Depth (mm)	680											
Total weight	Main unit (kg)		19				26				36			
	Ceiling panel (kg)		10				14							
Heat exchanger			Finned tube											
Sound proof / Heat-insulating material			Non-flammable insulation											
Fan unit	Fan		Turbo fan				Centrifugal fan							
	Standard air flow (High/Mid/Low) (m³/h)		558 / 498 / 450			600/534/450	900/750/618	1050 / 840 / 738		1260/900/780	1740/1434/1182	1800/1482/1230	2040/1578/1320	
	Motor output (W)		20				30	40		50	70			
Air filter			Standard filter (Long life filter)											
Controller			Remote controller											
Connecting pipe	Gas pipe (mm)		Ø 9.5			Ø 12.7		Ø 15.9						
	Liquid pipe (mm)		Ø 6.4						Ø 9.5					
	Drain port(Nominal dia. mm)		25 (Polyvinyl chloride tube)											
Sound pressure level (High/Med./Low) (Note 2) (dB(A))			34 / 32 / 30			35 / 33 / 30		38 / 35 / 33		40/37/34	42/39/36	43/40/37	46/42/39	

Note 1 :The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

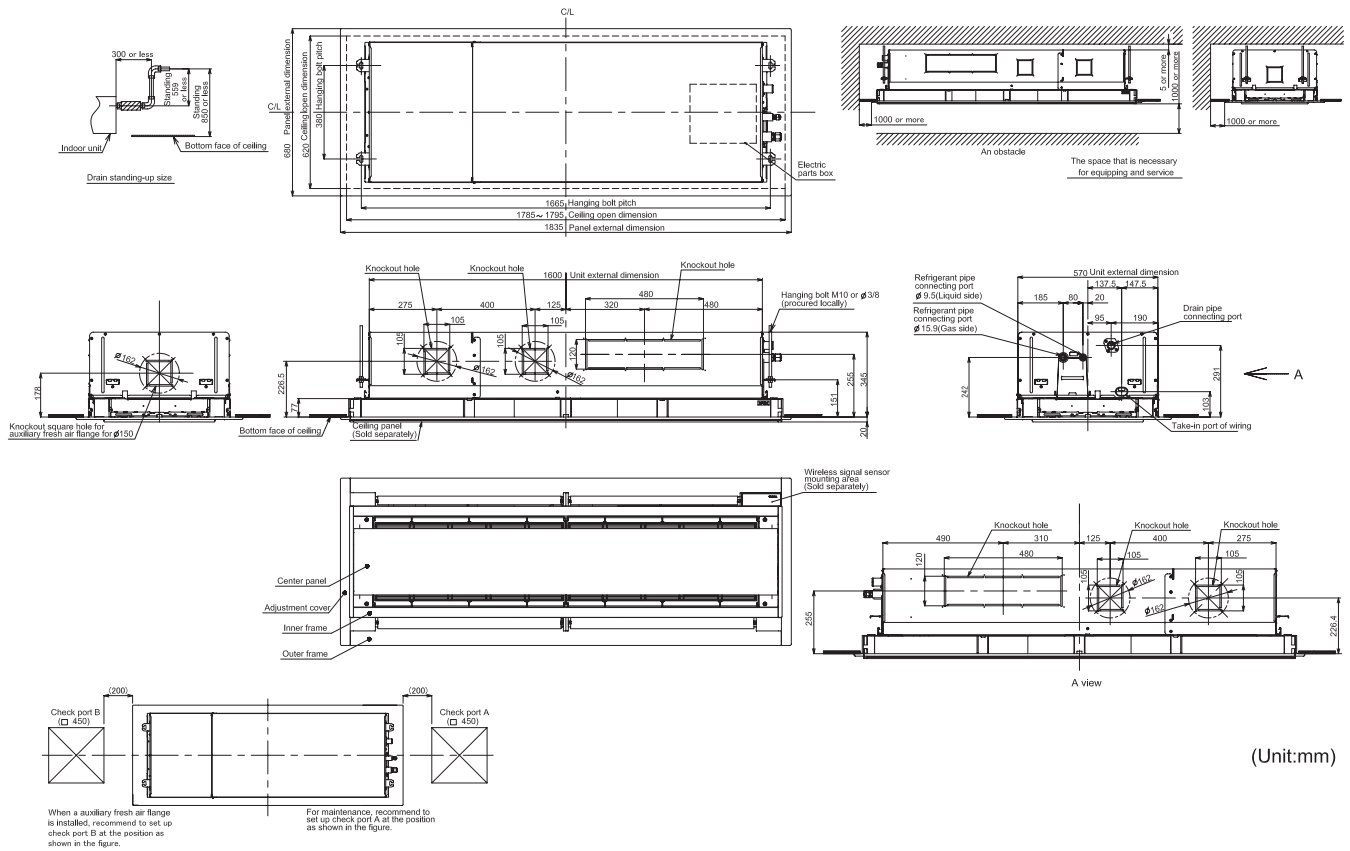
Note 2 :The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

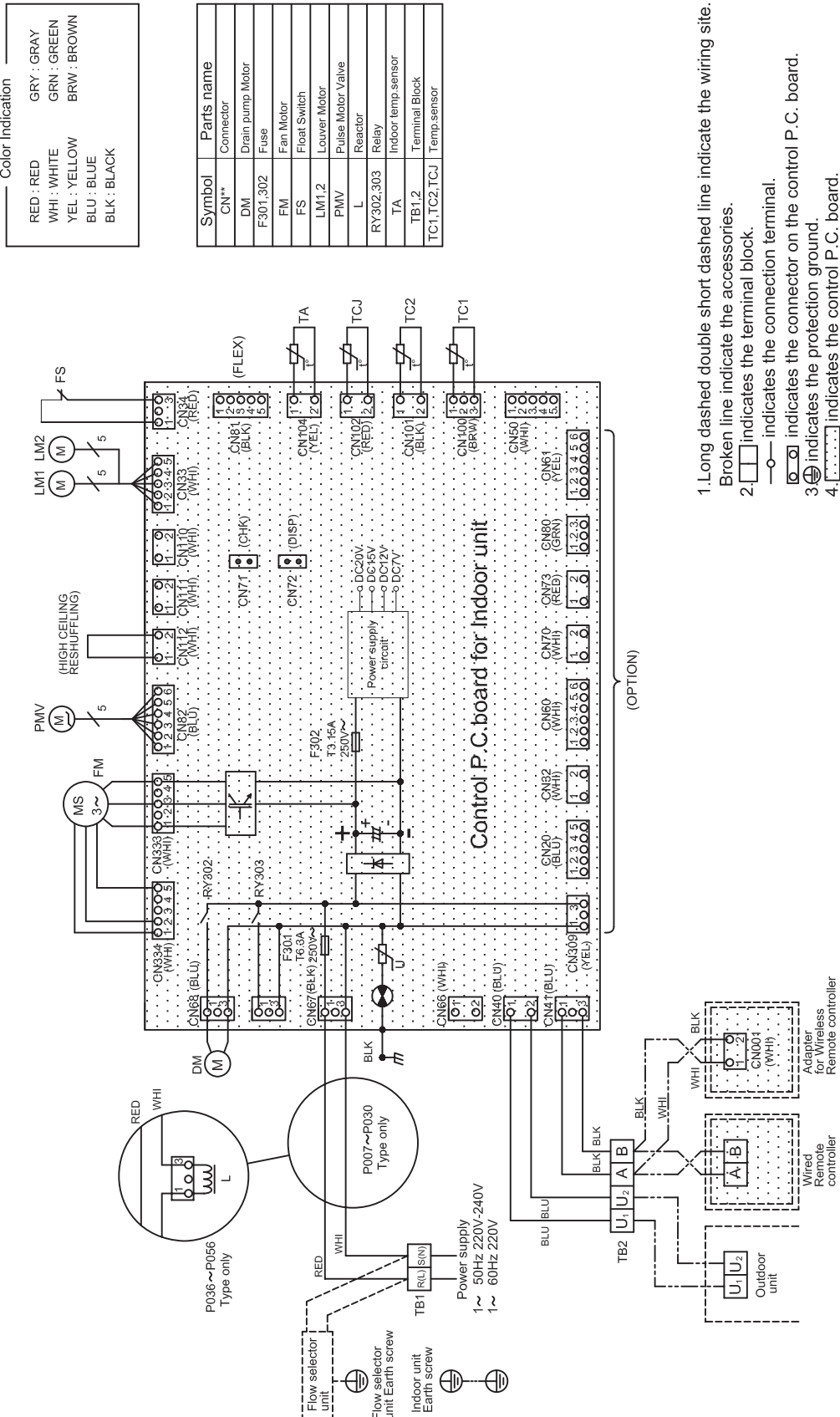
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

MMU-AP0362WH, 0482WH, 0562WH



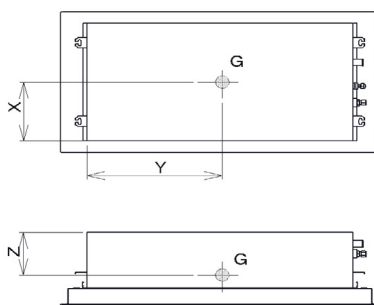
3. Wiring diagram

MMU-AP0072WH, AP0092WH, AP0122WH, AP0152WH, AP0182WH, AP0242WH, AP0272WH, AP0302WH, AP0362WH, AP0482WH, AP0562WH



4. Center of Gravity

Model name	X(mm)	Y(mm)	Z(mm)	Total weight(kg)		
				Main unit	Ceiling panel	
MMU-AP0072WH	280	435	162	19	10	
MMU-AP0092WH						
MMU-AP0122WH						
MMU-AP0152WH						
MMU-AP0182WH	285	600	205	26	14	
MMU-AP0242WH						
MMU-AP0272WH						
MMU-AP0302WH						
MMU-AP0362WH						
MMU-AP0482WH		835	175	36		
MMU-AP0562WH						



5. Electrical characteristics

2-way Air Discharge Cassette Type

	Model	Normal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
50Hz	MMU-AP0072WH	230-1-50	198	264	0.020	0.32	0.40	15
	MMU-AP0092WH	230-1-50	198	264	0.020	0.32	0.40	15
	MMU-AP0122WH	230-1-50	198	264	0.020	0.32	0.40	15
	MMU-AP0152WH	230-1-50	198	264	0.020	0.32	0.40	15
	MMU-AP0182WH	230-1-50	198	264	0.030	0.70	0.88	15
	MMU-AP0242WH	230-1-50	198	264	0.040	0.81	1.01	15
	MMU-AP0272WH	230-1-50	198	264	0.040	0.81	1.01	15
	MMU-AP0302WH	230-1-50	198	264	0.050	0.81	1.01	15
	MMU-AP0362WH	230-1-50	198	264	0.070	0.87	1.09	15
	MMU-AP0485WH	230-1-50	198	264	0.070	0.87	1.09	15
	MMU-AP0562WH	230-1-50	198	264	0.070	0.87	1.09	15

6. Sensible capacity table

2-way cassette type 2series (MMU-AP***2WH)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	12.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	14.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	16.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	18.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	20.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	21.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	23.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	25.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	27.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	29.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	31.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	33.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
	35.0	1.8	1.4	2.0	1.5	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
009	37.0	1.7	1.4	1.9	1.5	2.1	1.6	2.2	1.6	2.2	1.6	2.3	1.5	2.4	1.5
	39.0	1.7	1.3	1.9	1.4	2.0	1.5	2.1	1.5	2.1	1.5	2.3	1.5	2.4	1.5
	10.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	12.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	14.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	16.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	18.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	20.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	21.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	23.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	25.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	27.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	29.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	31.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
012	33.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	35.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	2.0
	37.0	2.2	1.7	2.5	1.8	2.6	2.0	2.7	2.0	2.8	2.0	3.0	1.9	3.1	1.9
	39.0	2.2	1.7	2.4	1.8	2.6	1.9	2.6	1.9	2.7	1.9	2.9	1.9	3.0	1.8
	10.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	12.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	14.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	16.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	18.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	20.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	21.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	23.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	25.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	27.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
015	29.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	31.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	33.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	35.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	37.0	2.9	2.2	3.2	2.3	3.4	2.4	3.5	2.4	3.6	2.4	3.8	2.4	4.0	2.4
	39.0	2.8	2.1	3.1	2.2	3.3	2.4	3.4	2.4	3.5	2.4	3.7	2.3	3.9	2.3
	10.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	12.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	14.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	16.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	18.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	20.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	21.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	23.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	25.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	27.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	29.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	31.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	33.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	35.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.0	5.1	3.0
	37.0	3.6	2.6	4.0	2.8	4.2	3.0	4.4	3.0	4.5	3.0	4.7	2.9	5.0	2.9
	39.0	3.5	2.6	3.8	2.7	4.1	2.9	4.2	2.9	4.4	2.9	4.6	2.9	4.8	2.8

2-way cassette type 2series (MMU-AP***2WH)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	10.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	12.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	14.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	16.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	18.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	20.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	21.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	23.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	25.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	27.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	29.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	31.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	33.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	35.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	37.0	4.5	3.4	4.9	3.6	5.3	3.8	5.4	3.8	5.6	3.8	5.9	3.8	6.2	3.7
	39.0	4.3	3.3	4.8	3.5	5.1	3.7	5.3	3.7	5.4	3.7	5.7	3.7	6.0	3.6
024	10.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	12.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	14.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	16.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	18.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	20.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	21.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	23.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	25.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	27.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	29.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	31.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	33.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	35.0	5.8	4.3	6.4	4.6	6.9	4.8	7.1	4.8	7.3	4.8	7.7	4.8	8.1	4.7
	37.0	5.6	4.1	6.2	4.4	6.7	4.7	6.9	4.7	7.1	4.7	7.5	4.6	7.8	4.5
	39.0	5.5	4.0	6.1	4.3	6.5	4.6	6.7	4.5	6.9	4.5	7.3	4.5	7.6	4.4
027	10.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	12.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	14.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	16.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	18.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	20.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	21.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	23.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	25.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	27.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	29.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	31.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	33.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	35.0	6.6	4.7	7.3	5.0	7.8	5.3	8.0	5.3	8.2	5.3	8.7	5.2	9.1	5.1
	37.0	6.4	4.5	7.0	4.8	7.5	5.1	7.7	5.1	8.0	5.1	8.4	5.1	8.8	4.9
	39.0	6.2	4.4	6.8	4.7	7.3	5.0	7.5	5.0	7.8	5.0	8.2	4.9	8.6	4.8
030	10.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	12.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	14.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	16.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	18.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	20.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	21.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	23.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	25.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	27.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	29.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	31.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	33.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	35.0	7.4	5.0	8.2	5.4	8.7	5.7	9.0	5.7	9.3	5.7	9.8	5.6	10.3	5.5
	37.0	7.2	4.9	7.9	5.2	8.5	5.5	8.7	5.5	9.0	5.5	9.5	5.4	9.9	5.3
	39.0	7.0	4.7	7.7	5.0	8.2	5.4	8.5	5.3	8.7	5.3	9.2	5.3	9.7	5.2



2-way cassette type 2series (MMU-AP***2WH)

TC : Total capacity [kW]

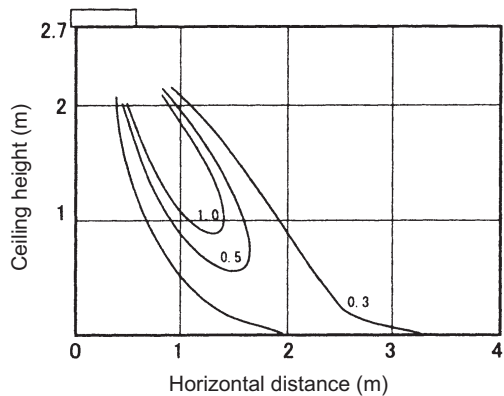
SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
036	10.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	12.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	14.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	16.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	18.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	20.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	21.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	23.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	25.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	27.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	29.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	31.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	33.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
	35.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	7.7	12.8	7.5
048	37.0	8.9	6.6	9.8	7.1	10.5	7.5	10.8	7.5	11.2	7.5	11.8	7.4	12.4	7.2
	39.0	8.7	6.4	9.6	6.9	10.2	7.3	10.5	7.3	10.9	7.3	11.5	7.2	12.0	7.0
	10.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	12.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	14.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	16.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	18.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	20.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	21.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	23.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	25.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	27.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	29.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	31.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
056	33.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	35.0	11.5	7.9	12.7	8.5	13.6	9.0	14.0	9.0	14.4	9.0	15.3	8.9	16.0	8.7
	37.0	11.1	7.7	12.3	8.2	13.1	8.7	13.6	8.7	14.0	8.7	14.8	8.6	15.4	8.4
	39.0	10.8	7.5	12.0	8.0	12.8	8.5	13.2	8.4	13.6	8.4	14.4	8.4	15.0	8.2
	10.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	12.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	14.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	16.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	18.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	20.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	21.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	23.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	25.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	27.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	29.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	31.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	33.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	35.0	13.1	8.8	14.5	9.4	15.5	9.9	16.0	9.9	16.5	9.9	17.4	9.8	18.2	9.6
	37.0	12.7	8.5	14.1	9.1	15.0	9.6	15.5	9.6	16.0	9.6	16.9	9.5	17.7	9.3
	39.0	12.4	8.3	13.7	8.8	14.6	9.4	15.1	9.3	15.5	9.3	16.4	9.2	17.2	9.0

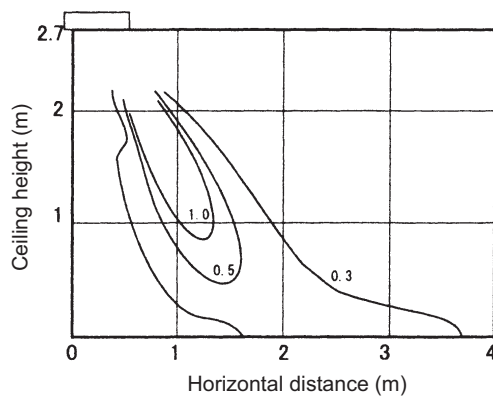
7. Air throw distance chart

Unit: [m/s]

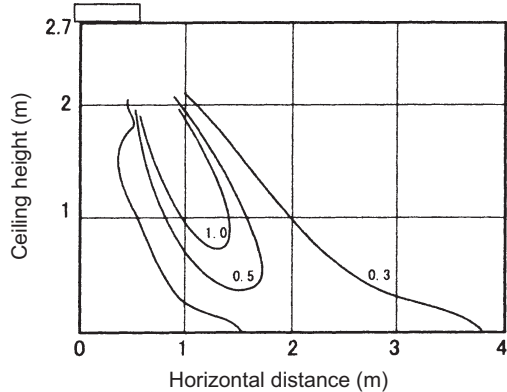
MMU-AP0072WH, AP0092WH, AP0122WH, AP0152WH



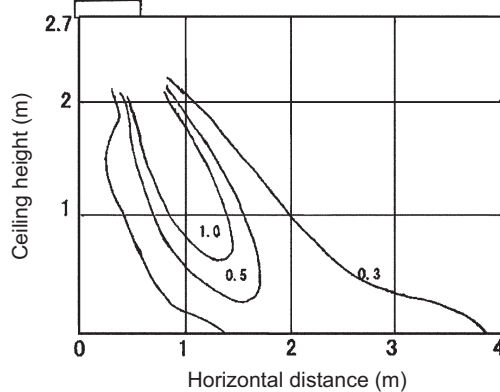
MMU-AP0182WH



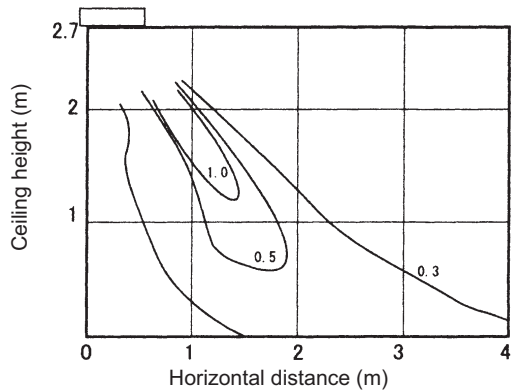
MMU-AP0242WH, AP0272WH



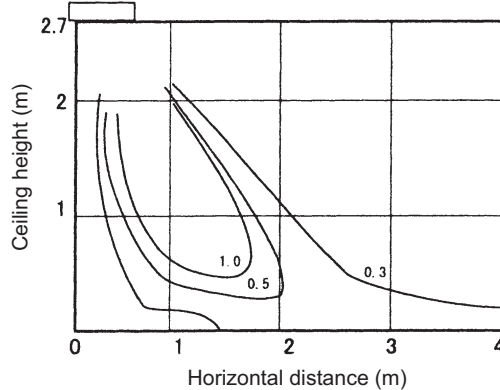
MMU-AP0302WH



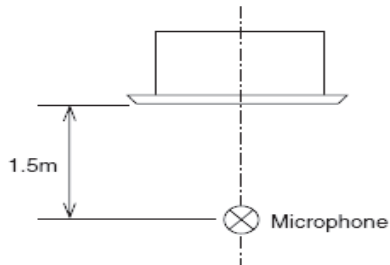
MMU-AP0362WH, AP0482WH



MMU-AP0562WH

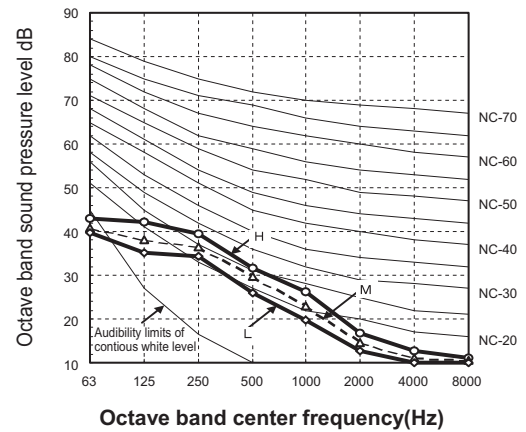


8. Sound characteristics (NC-Curve)



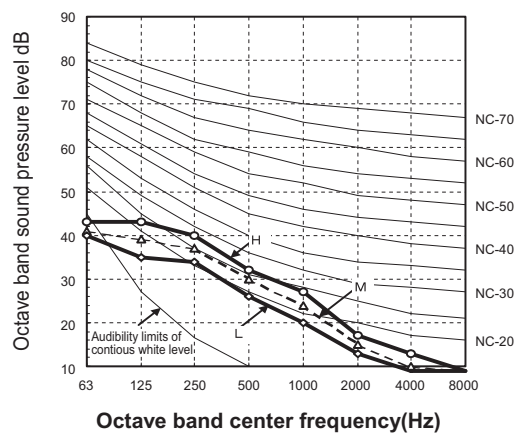
MMU-AP0072WH, AP0092WH, 0122WH

Sound pressure level (dB(A))	H - M - L
	34 - 32 - 30



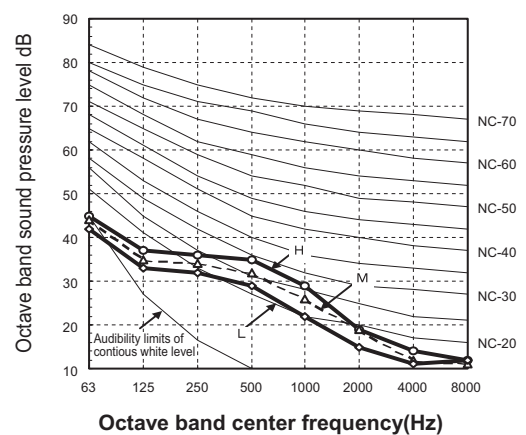
MMU-AP0152WH

Sound pressure level (dB(A))	H - M - L
	35 - 33 - 30



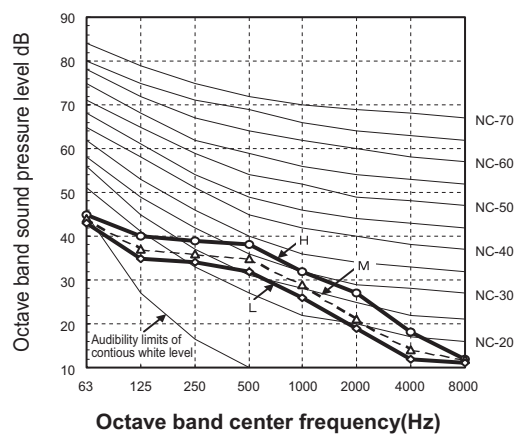
MMU-AP0182WH

Sound pressure level (dB(A))	H - M - L
	35 - 33 - 30



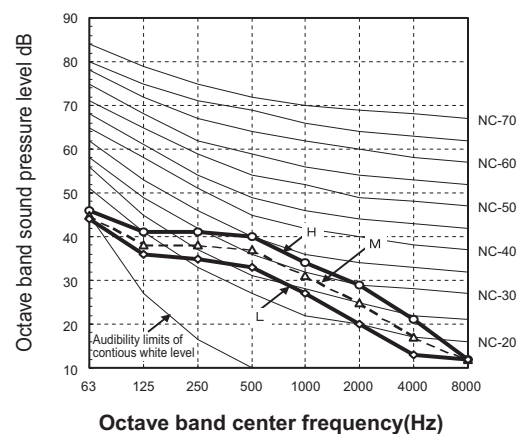
MMU-AP0242WH, AP0272WH

Sound pressure level (dB(A))	H - M - L
	38 - 35 - 33



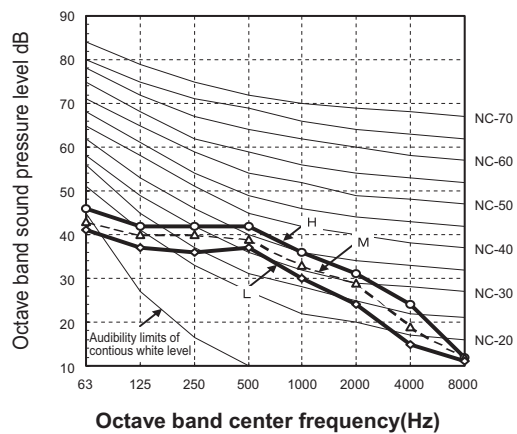
MMU-AP0302WH

Sound pressure level (dB(A))	H - M - L
	40 - 37 - 34



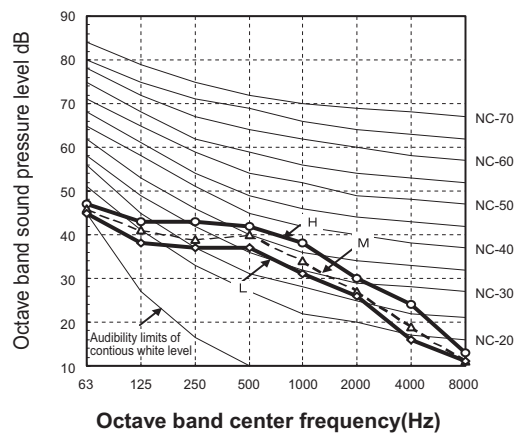
MMU-AP0362WH

Sound pressure level (dB(A))	H - M - L
	42 - 39 - 36



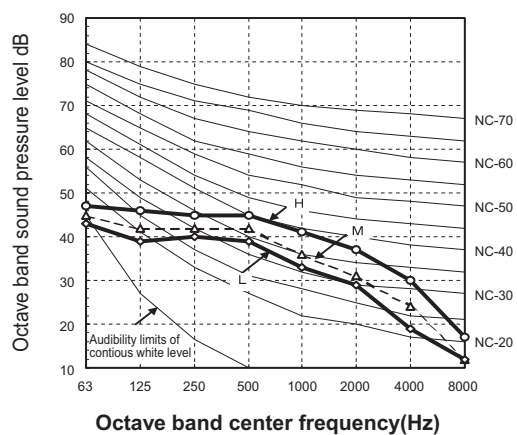
MMU-AP0482WH

Sound pressure level (dB(A))	H - M - L
	43 - 40 - 37



MMU-AP0562WH

Sound pressure level (dB(A))	H - M - L
	46 - 42 - 39



9. Fresh air intake (Design guide)

Usage

Fresh air intake by setting Auxiliary fresh air flange(TCB-FF151US-E) .

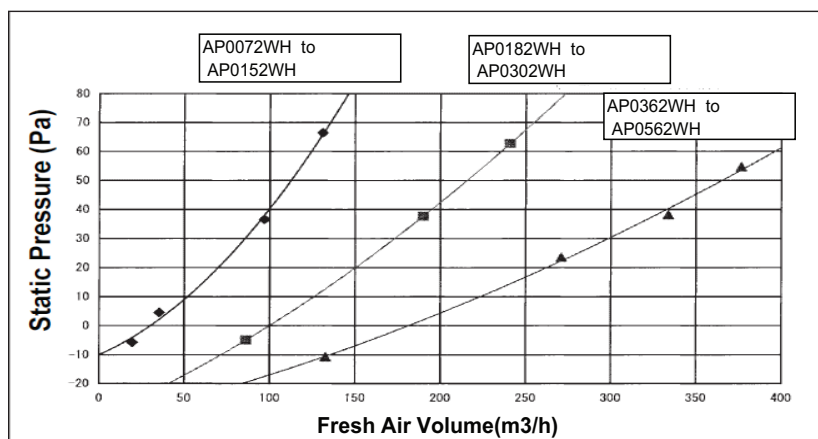
Caution

1. Be sure to provide air return.
2. The fresh air shall be treated by heat reclaim ventilator or the like.
3. Recommended treated air temperature is 12C to 30C.
4. Be sure to decide the fresh air volume so that mixed suction air with fresh air keep operating temperature. Provide an air filter in fresh air way to prevent sucking dust.
5. Be sure to insulate the fresh air duct.
In order to accelate starting up in heating mode, implement pre-heating operation by cutting off fresh air intake
6. Be sure to connect wiring of inter-lock between Air to air heat exchanger unit and fan of indoor unit.

Characteristics between air volume of branching duct and static pressure

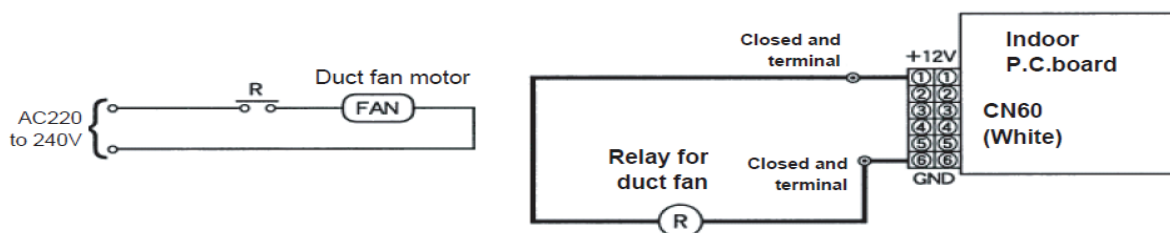
Up to 20% fresh air intake ratio is available by using the booster fan.

fresh air intake ratio = (fresh air volume) / (total air volume) X 100 %

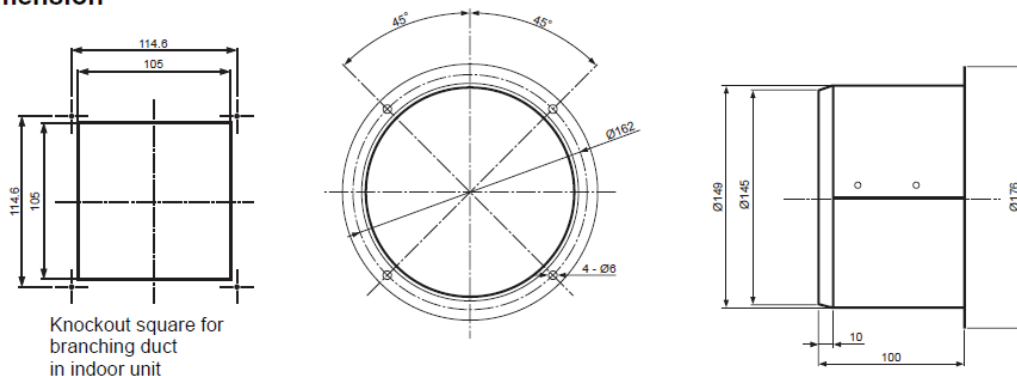


Inter - lock circuit

1. Connect the driving relay of the duct fan (DC 12 V) between 1 and 6 on the indoor P.C.board.
Part indicated with a bold line is the connecting circuit.
After installation, implement a trial operation to check that the duct fan of the indoor unit start / stop simultaneously.
(Implement the trial operation following to the installation manual of the indoor unit.)
Rated current of the relay for duct fan shall be up to 75 mA .



Dimension

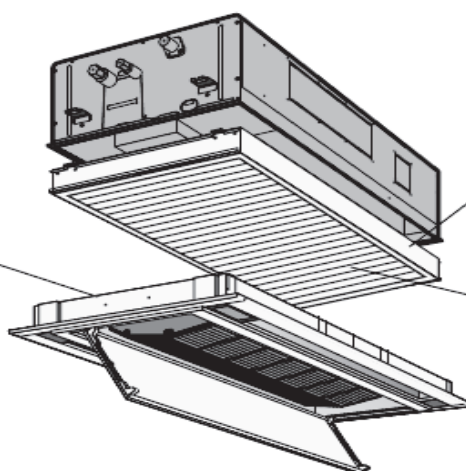


Design sample of branching duct flange

10. Accessories

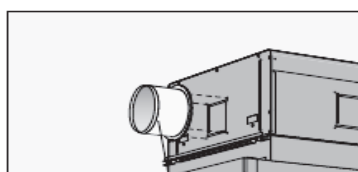
Parts name	Model name	Applied model	Notes	Remarks
Ceiling panel	RBC-UW283PG(W)-E	MMU-AP0072WH to 0152WH	Required accessory	
	RBC-UW803PG(W)-E	MMU-AP0182WH to 0302WH		
	RBC-UW1403PG(W)-E	MMU-AP0362WH to 0562WH		
Super long life filter	TBC-LF283UW-E	MMU-AP0072WH to 0152WH	Dust collecting effect : 50% (Weight method)	Use with TBC-FC283UW-E
	TBC-LF803UW-E	MMU-AP0182WH to 0302WH		Use with TBC-FC803UW-E
	TBC-LF1403UW-E	MMU-AP0362WH to 0562WH		Use with TBC-FC1403UW-E
Filter chamber	TBC-FC283UW-E	MMU-AP0072WH to 0152WH	For super long life filter	
	TBC-FC803UW-E	MMU-AP0182WH to 0302WH		
	TBC-FC1403UW-E	MMU-AP0362WH to 0562WH		
Auxiliary fresh air flange	TBC-FF151US-E	MMU-AP0072WH to 0562WH	For fresh air intake by using the knockout hole of indoor unit.	

Ceiling panel
RBC-UW283PG(W)-E
RBC-UW803PG(W)-E
RBC-UW1403PG(W)-E



Filter chamber
TCB-FC283UW-E
TCB-FC803UW-E
TCB-FC1403UW-E

Super long life filter
TCB-LF283UW-E
TCB-LF803UW-E
TCB-LF1403UW-E



Auxiliary fresh air flange
TCB-FF151US-E

11-2-4. 1-way Air Discharge Cassette Type

1-way Air Discharge Cassette Type

Indoor Unit

MMU-AP0074YH-E
MMU-AP0094YH-E
MMU-AP0124YH-E

MMU-AP0154SH-E
MMU-AP0184SH-E
MMU-AP0244SH-E



Contents

1. Specifications
2. Dimensions
3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. Air throw distance chart
8. Sound characteristics (NC-Curve)
9. Fresh air intake (Design guide)
10. Accessories



1. Specifications

1-way Air Discharge Cassette Type

Model name			MMD-	AP0074YH-E	AP0094YH-E	AP0124YH-E	AP0154SH-E	AP0184SH-E	AP0244SH-E	
Cooling/Heating capacity			(Note 1)	(kW)	2.2 / 2.5	2.8 / 3.2	3.6 / 4.0	4.5 / 5.0	5.6 / 6.3	7.1 / 8.0
Electical characteristics	Power supply		1 phase 50Hz 230V (220-240V) (Sepatate power supply for indoor units is required.)							
	Running current		(A)	0.24			0.34	0.37	0.62	
	Power consumption		(kW)	0.053			0.042	0.046	0.075	
	Starting current		(A)	0.6			0.51	0.54	0.80	
Appearance	Main unit		Heat-instulating material attached Zinc hot dipping steel plate							
Ceiling panel	Model		RBC-UY135PG				RBC-US21PGE			
Panel colour			Moon white(Munsell 2.5GY9.0/0.5)							
Outer dimintions	Main unit	Hight	(mm)	235			200			
		Width	(mm)	850			1000			
		Depth	(mm)	400			710			
	Ceiling panel	Hight	(mm)	18			20			
		Width	(mm)	1050			1230			
		Depth	(mm)	470			800			
Total weight	Main unit		(kg)	22			21		22	
	Ceiling panel		(kg)	3.5			5.5			
Heat exchanger			Finned tube							
Sound proof / Heat-insulating material			Non-flammable insulation				Polyethylene foam + Expanded polyethylene			
Fan unit	Fan		Centrifugal fan							
	Standard air flow (High/Mid/Low)		(m³/h)	540 / 480 / 420			750 / 690 / 630	780 / 720 / 660	1140 / 960 / 810	
	Motor output		(W)	22			30			
Air filter			Standard filter (Long life filter)							
Controller			Remote controller							
Connecting pipe	Gas pipe		(mm)	ø 9.5			ø 12.7		ø 15.9	
	Liquid pipe		(mm)	ø 6.4					ø 9.5	
	Drain port(Nominal dia. mm)		25 (Polyvinyl chloride tube)							
Sound pressure level (High/Med./Low)			(Note 2)(dB(A))	42 / 39 / 34			37 / 35 / 32	38 / 36 / 34	45 / 41 / 37	

Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

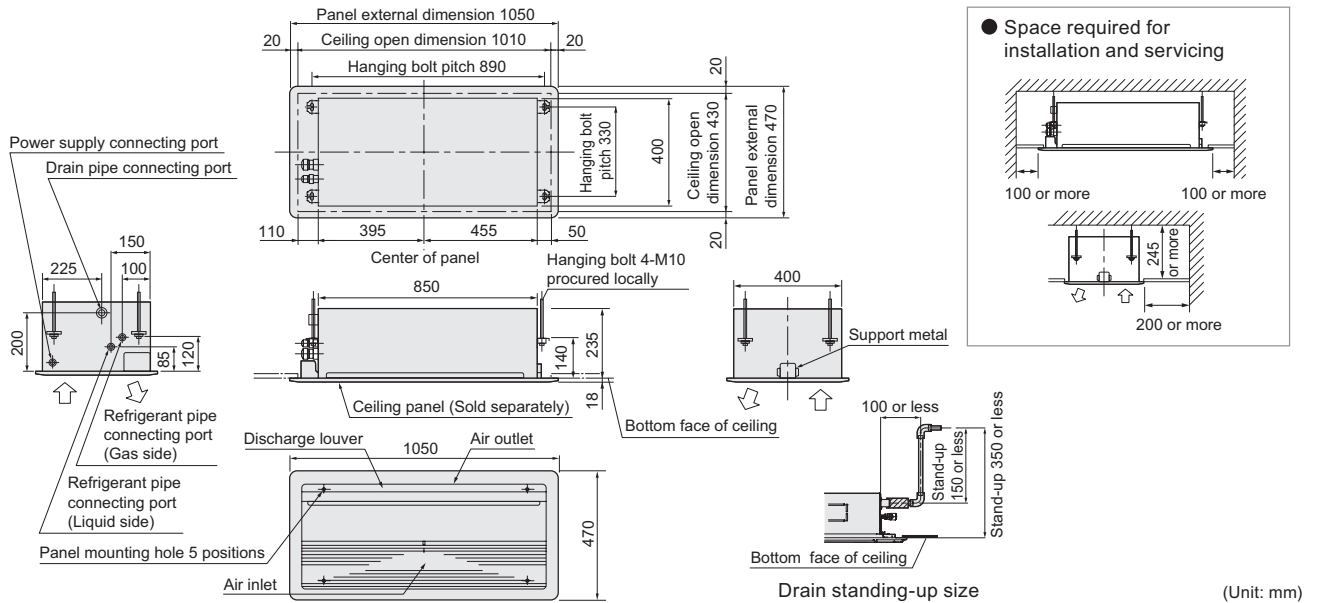
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

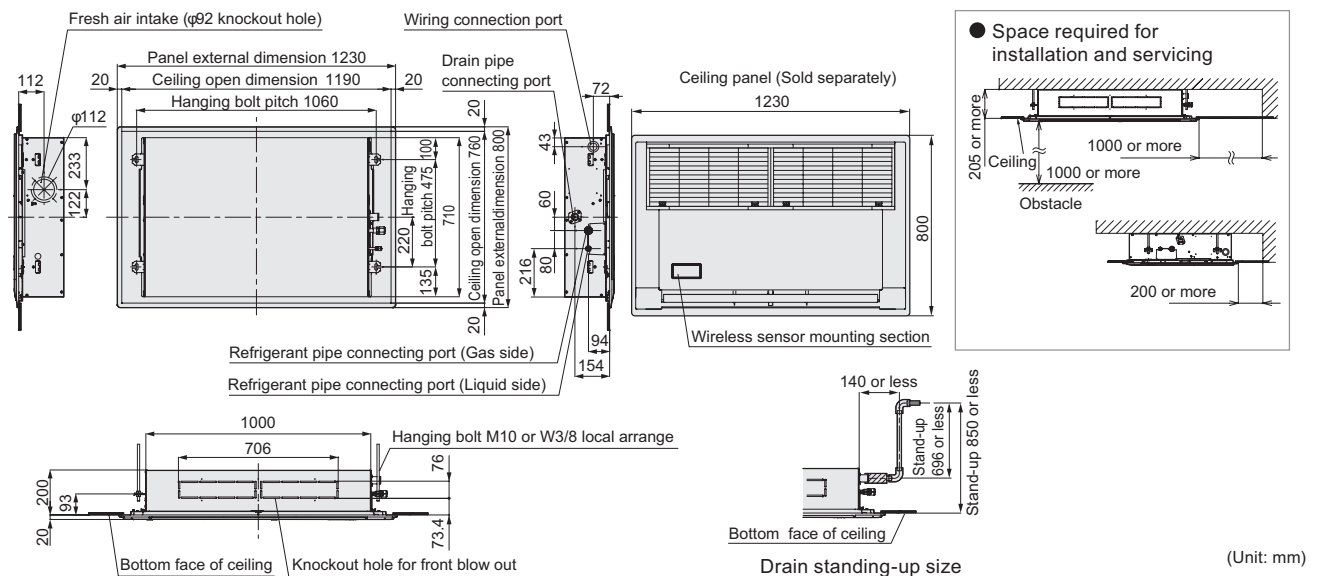
Note : Rated conditions Cooling Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
 Heating Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

2. Dimension

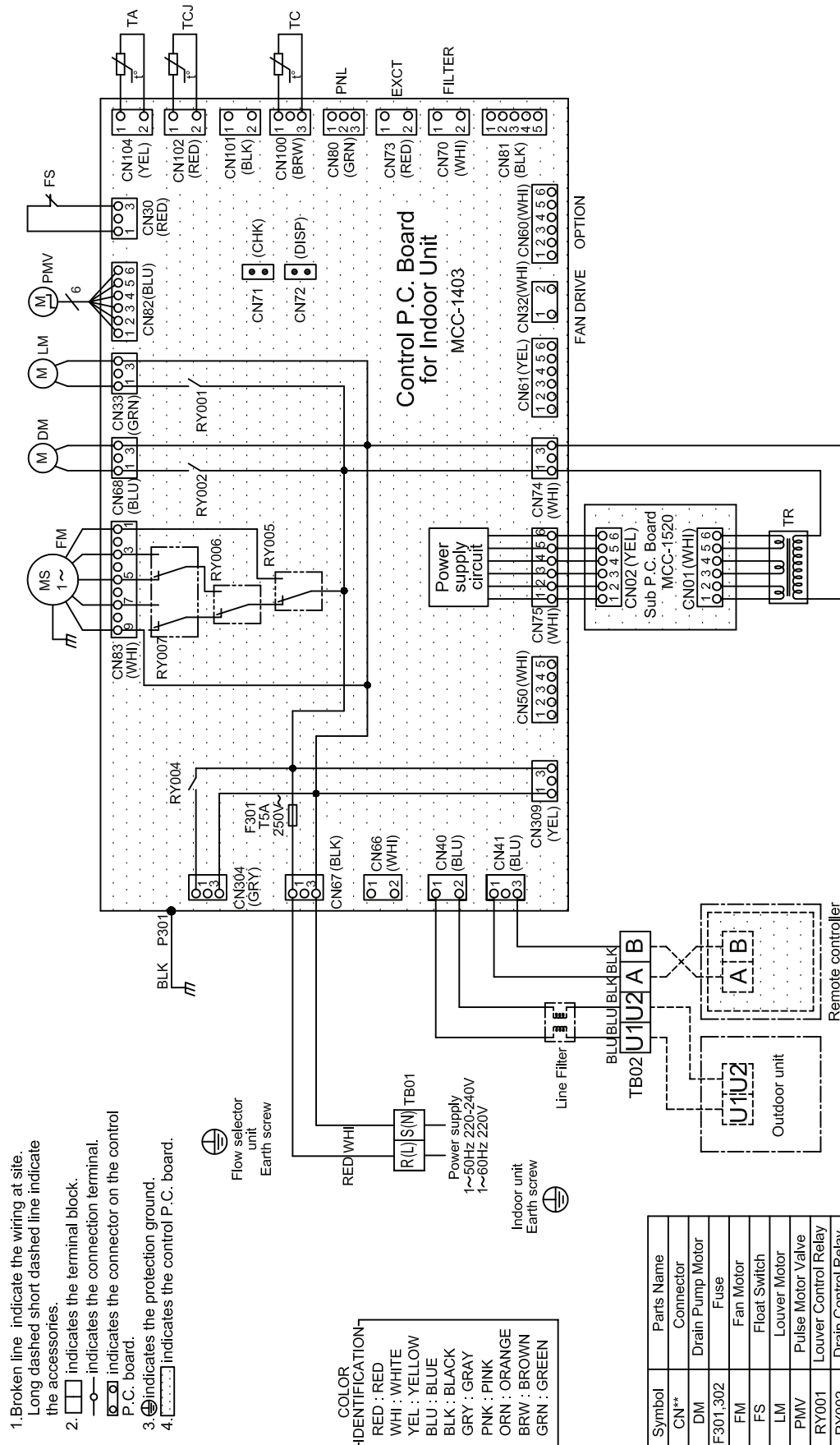
MMU-AP0074YH-E, AP0094YH-E, AP0124YH-E



MMU-AP0154SH-E, AP0184SH-E, AP0244SH-E

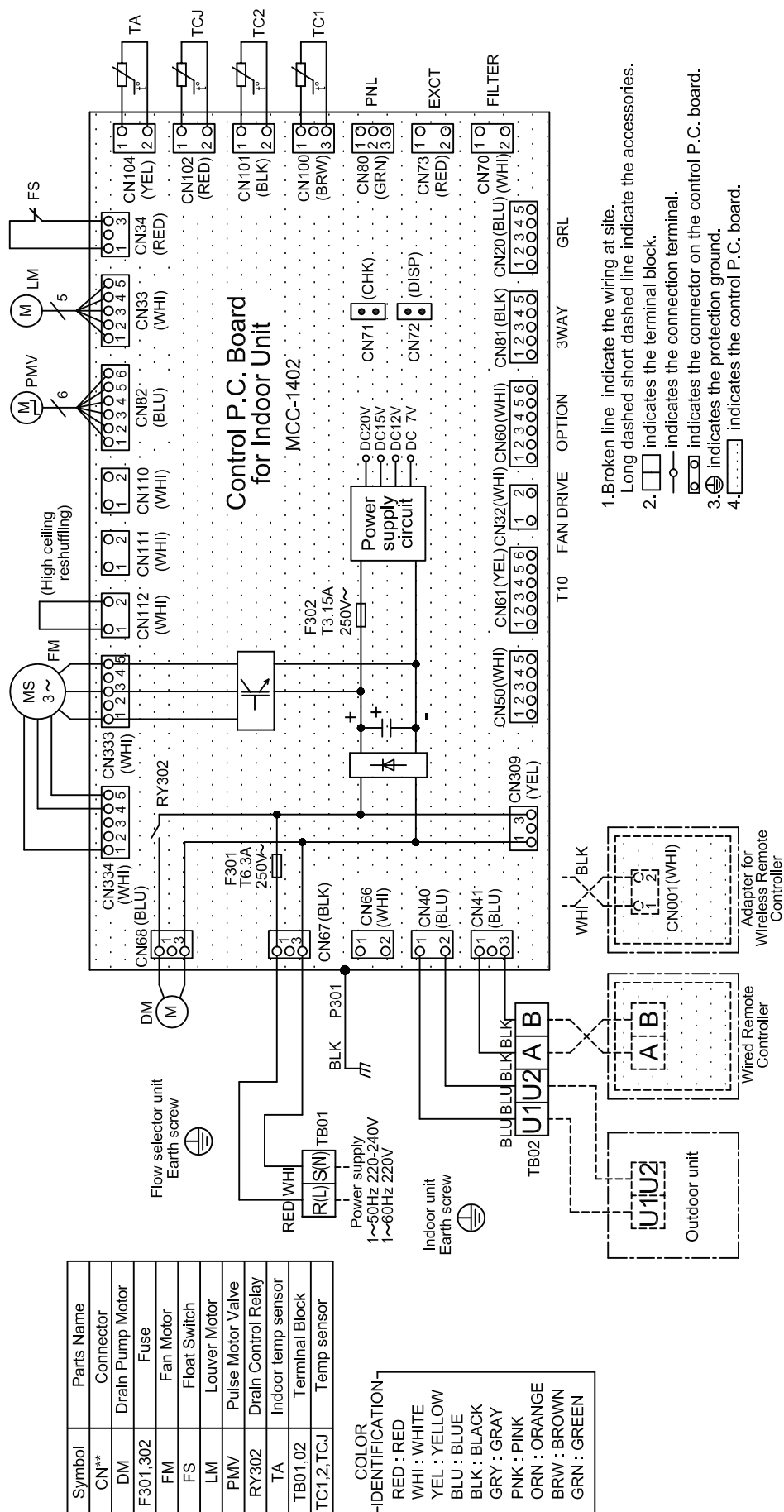


MMU-AP0074YH-E, AP0094YH-E, AP0124YH-E



Symbol	Parts Name
CN**	Connector
DM	Drain Pump Motor
F301,302	Fuse
FM	Fan Motor
FS	Float Switch
LM	Louwer Motor
PMV	Pulse Motor Valve
RY001	Louwer Control Relay
RY002	Drain Control Relay
RYRY005,006,007	Fan Motor Control Relay
TA	Indoor temp sensor
TB01,02	Terminal Block
TC,TCJ	Temp sensor
TR	Transformer

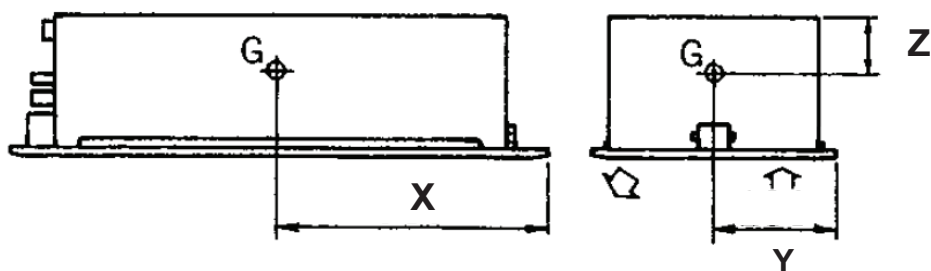
MMU-AP0154SH-E, AP0184SH-E, AP0244SH-E



4. Center of Gravity

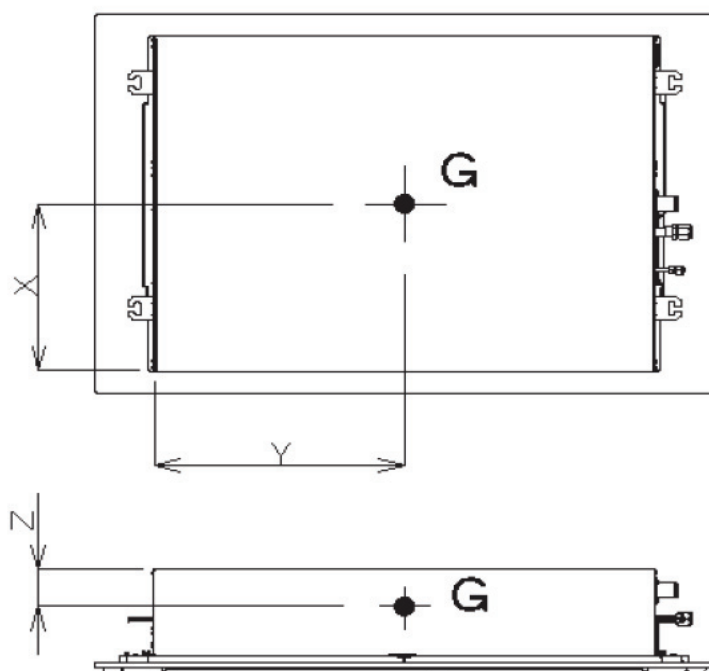
1-way YH Type

Model name	X(mm)	Y(mm)	Z(mm)	Total weight(kg)	
				Main unit	Ceiling panel
MMU-AP0074YH-E	500	230	120	22	3.5
MMU-AP0094YH-E					
MMU-AP0124YH-E					



1-way SH Type

Model name	X(mm)	Y(mm)	Z(mm)	Total weight(kg)	
				Main unit	Ceiling panel
MMU-AP0154SH-E	370	475	80	21	5.5
MMU-AP0184SH-E				22	
MMU-AP0244SH-E					



5. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
1-Way Air Discharge Cassette Type	MMU-AP 0074 YH-E	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP 0094 YH-E	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP 0124 YH-E	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP 0154 SH-E	230-1-50	198	264	0.030	0.40	0.49	15
	MMU-AP 0182 SH-E	230-1-50	198	264	0.030	0.42	0.53	15
	MMU-AP 0242 SH-E	230-1-50	198	264	0.030	0.71	0.88	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

6. Sensible capacity table

1-way Air Discharge Cassette Type (MMU-AP***4YH-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	12.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	14.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	16.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	18.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	20.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	21.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	23.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	25.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	27.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	29.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	31.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	33.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	35.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
009	37.0	1.7	1.5	1.9	1.6	2.1	1.7	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7
	39.0	1.7	1.5	1.9	1.6	2.0	1.7	2.1	1.7	2.1	1.7	2.3	1.7	2.4	1.6
	10.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	12.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	14.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	16.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	18.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	20.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	21.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	23.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	25.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	27.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	29.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	31.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
012	33.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	35.0	2.3	2.0	2.5	2.1	2.7	2.2	2.8	2.2	2.9	2.2	3.1	2.2	3.2	2.1
	37.0	2.2	1.9	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.1	3.0	2.1	3.1	2.1
	39.0	2.2	1.8	2.4	2.0	2.6	2.1	2.6	2.1	2.7	2.1	2.9	2.1	3.0	2.0
	10.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	12.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	14.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	16.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	18.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	20.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	21.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	23.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	25.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	27.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	29.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	31.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	33.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	35.0	3.0	2.4	3.3	2.5	3.5	2.7	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
	37.0	2.9	2.3	3.2	2.5	3.4	2.6	3.5	2.6	3.6	2.6	3.8	2.6	4.0	2.5
	39.0	2.8	2.3	3.1	2.4	3.3	2.5	3.4	2.5	3.5	2.5	3.7	2.5	3.9	2.5

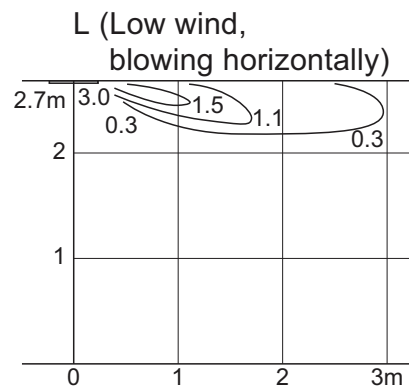
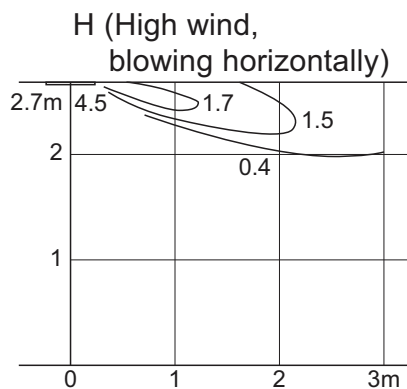
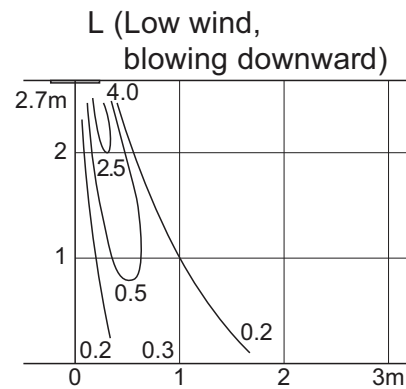
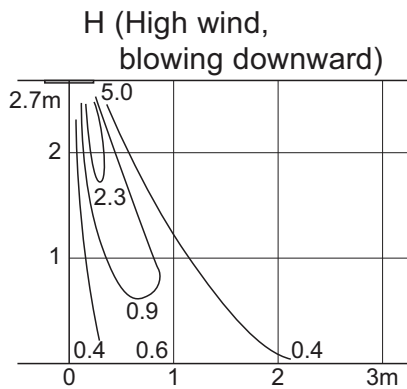
1-way (SH series) Air Discharge Cassette Type (MMU-AP***4SH-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

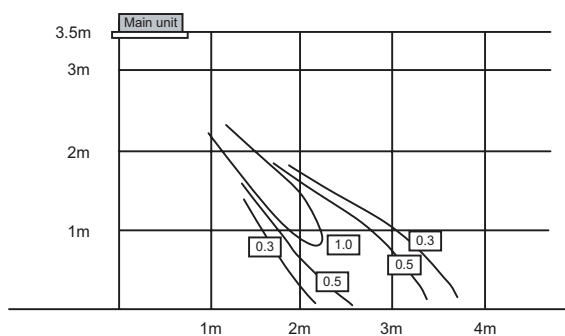
Unit size	Outdoor air temp. °CDB	Indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	10.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	12.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	14.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	16.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	18.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	20.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	21.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	23.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	25.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	27.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	29.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	31.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	33.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	35.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
018	37.0	3.6	2.7	4.0	2.9	4.2	3.1	4.4	3.1	4.5	3.1	4.7	3.1	5.0	3.0
	39.0	3.5	2.7	3.8	2.8	4.1	3.0	4.2	3.0	4.4	3.0	4.6	3.0	4.8	2.9
	10.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	12.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	14.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	16.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	18.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	20.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	21.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	23.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	25.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	27.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	29.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	31.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	33.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	35.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
024	37.0	4.5	3.3	4.9	3.6	5.3	3.8	5.4	3.8	5.6	3.8	5.9	3.7	6.2	3.7
	39.0	4.3	3.3	4.8	3.5	5.1	3.7	5.3	3.7	5.4	3.7	5.7	3.6	6.0	3.6
	10.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	12.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	14.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	16.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	18.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	20.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	21.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	23.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	25.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	27.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	29.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	31.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	33.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	35.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	37.0	5.6	4.3	6.2	4.6	6.7	4.9	6.9	4.8	7.1	4.8	7.5	4.8	7.8	4.7
	39.0	5.5	4.2	6.1	4.4	6.5	4.7	6.7	4.7	6.9	4.7	7.3	4.7	7.6	4.6

7. Air throw distance chart

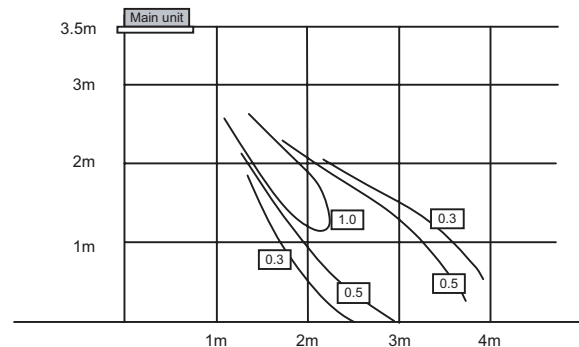
MMU-AP0074YH-E, AP0094YH-E, AP0124YH-E



MMU-AP0154SH-E, AP0184SH-E



MMU-AP0244SH-E



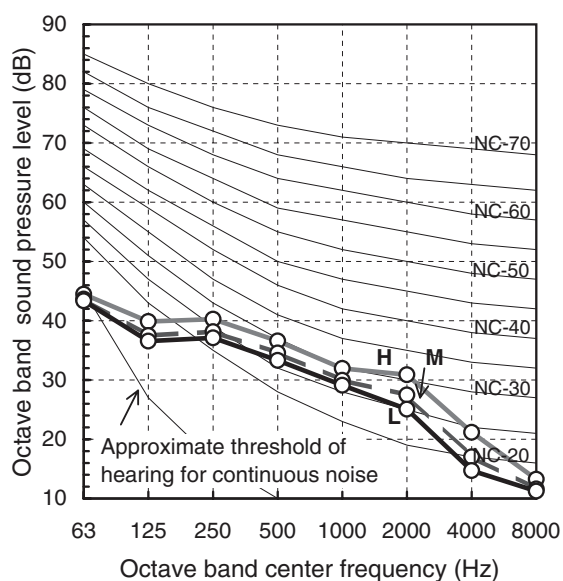
unit : [m/s]

8. Sound Characteristics (NC Curve)

1-way (SH series) Air Discharge Cassette Type

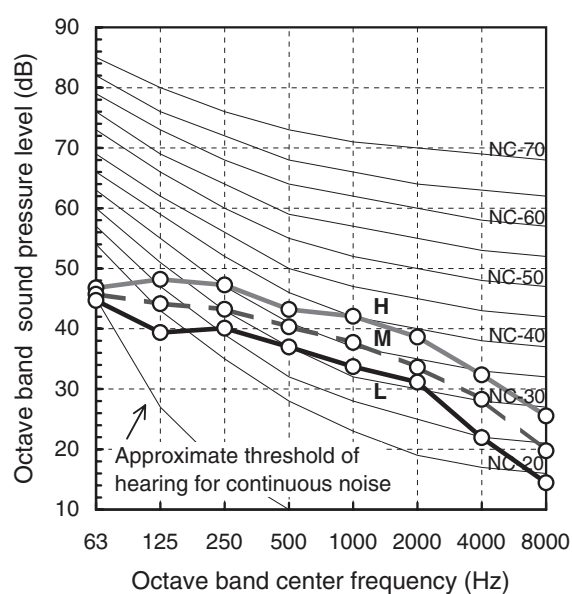
MMU-AP0154SH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	37	35	32



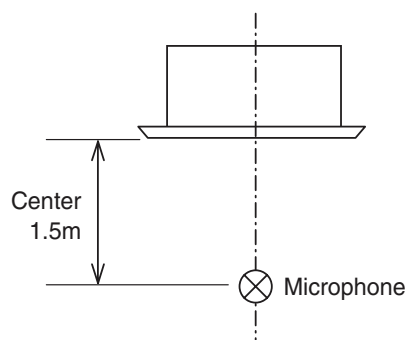
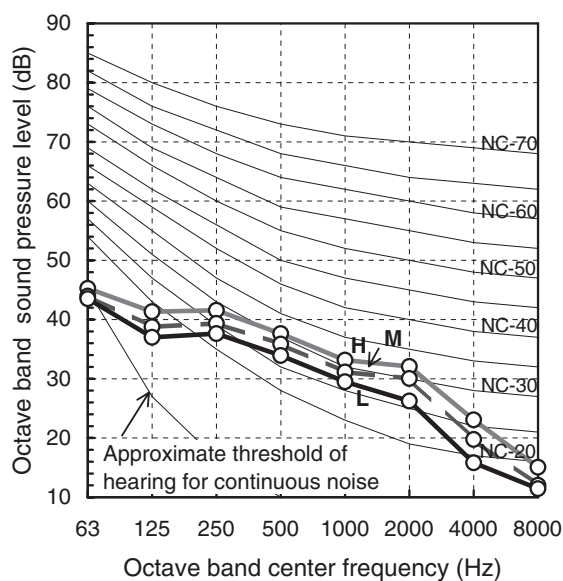
MMU-AP0244SH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	45	41	37



MMU-AP0184SH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	38	36	34



9. Fresh air intake (Design guide)

1-way (SH series) Air Discharge Cassette Type

Caution

The fresh air shall be conditioned by a heat reclaim ventilator or similar.

Ensure the fresh air volume is determined so that mixed suction air and fresh air can maintain the operating temperature.

*1. Recommended conditioned air temperature is 12 °C to 30 °C.

However, Make a fresh air volume within 20% of standard.

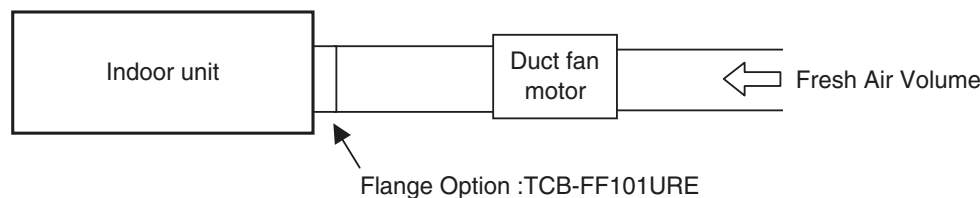
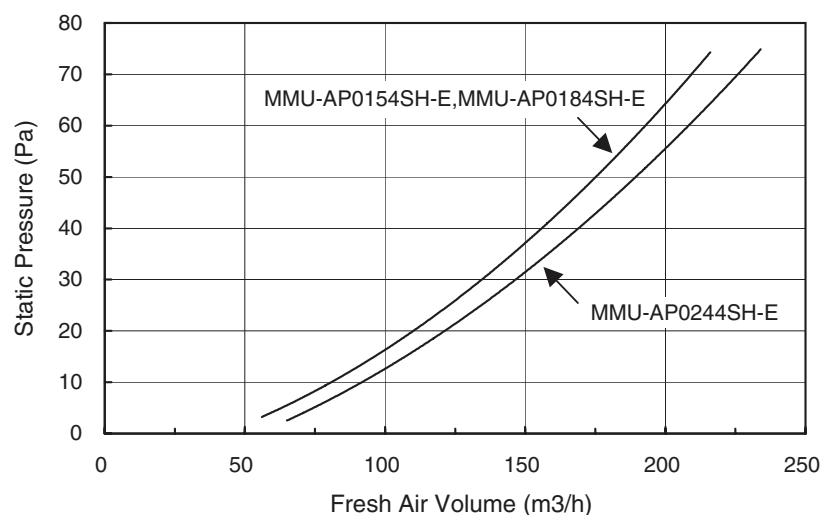
Model name	MMU-	AP0154SH-E	AP0184SH-E	AP0244SH-E
Standard air flow	(m ³ /h)	750	780	1140

Install a filter within the fresh air duct.

(Fresh air does not pass through the filter of Indoor unit.)

Insulate the fresh air duct.

Electrically connect the fan of the Heat exchanger unit and the Indoor unit to a single isolator.



Inter - lock circuit

Connect the driving relay of the duct fan(DC 12V) between 1 and 6 on the indoor P.C. board.

(Rated current of the relay for duct fan should be up to 75mA.)

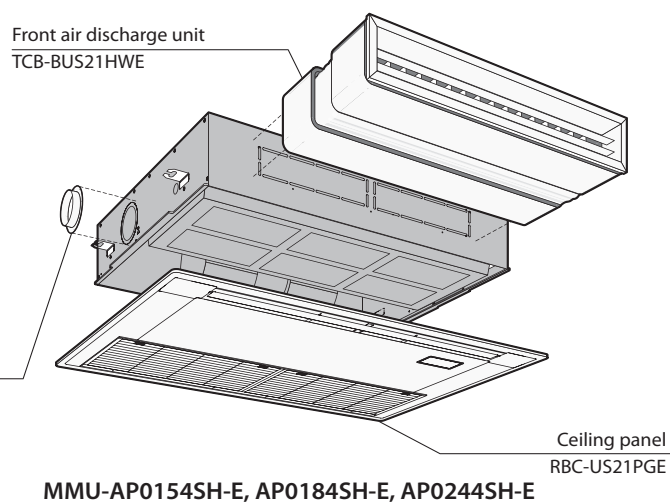
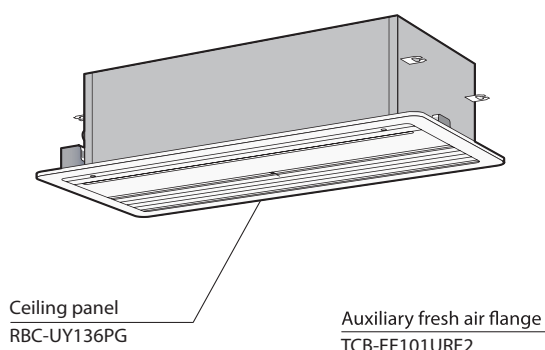
After installation, carry out a trial operation to check that the duct fan of the indoor unit start/stop simultaneously.

(Carry out the trial operation following the installation manual of the indoor unit.)

10. Accessories

Parts name	Model name	Applied model	Note	Remarks
Ceiling panel	RBC-UY136PG	MMU-AP***4YH-E	Required accessory	
Front air discharge unit	RBC-US21PGE	MMU-AP***4SH-E	Required accessory	
Auxiliary fresh air flange	TCB-BUS21HWE			
Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	

MMU-AP0074YH-E, AP0094YH-E, AP0124YH-E



11-2-5. Concealed Duct Type

Concealed Duct Type

MMD-AP0074BH-E / MMD-AP0094BH-E
MMD-AP0124BH-E / MMD-AP0154BH-E
MMD-AP0184BH-E / MMD-AP0244BH-E
MMD-AP0274BH-E / MMD-AP0304BH-E
MMD-AP0364BH-E / MMD-AP0484BH-E
MMD-AP0564BH-E



Contents

1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. Fan characteristics
8. Sound characteristics (NC-Curve)
9. Accessories



1. Specifications

Concealed Duct Type

Model name		MMD-	AP0074 BH-E	AP0094 BH-E	AP0124 BH-E	AP0154 BH-E	AP0184 BH-E	AP0244 BH-E	AP0274 BH-E	AP0304 BH-E	AP0364 BH-E	AP0484 BH-E	AP0564 BH-E
Cooling/Heating capacity (Note 1) (kW)			2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Separate power supply for indoor units is required.)										
	Running current (A)		0.29		0.34		0.43	0.52		0.61	0.83	0.98	
	Power consumption (kW)		0.033		0.039		0.050	0.060		0.071	0.107	0.128	
	Starting current (A)		0.5		0.59		0.75	0.90		1.05	1.44	1.70	
Appearance	Main unit		Zinc hot dipping steel plate										
Outer dimension	Main unit	Height (mm)	320										
		Width (mm)	550			700		1,000			1,350		
		Depth (mm)	800										
	Suction ceiling panel	Height (mm)	9										
		Width (mm)	630			780		1,080			1,430		
		Depth (mm)	500										
Total weight	Main unit (kg)		28			32		43			55		
	Ceiling panel (kg)		3.5			4		6			7		
Heat exchanger			Finned tube										
Soundproof/Heat-insulating material			Non-flammable insulation										
Fan unit	Fan		Centrifugal fan										
	Standard air flow High (Mid./Low) (m³/h)		480 (420/340)		570 (490/400)	650 (540/480)	780 (660/540)	1,140 (990/870)		1,260 (1080/870)	1,620 (1410/1200)	1,980 (1710/1490)	
	Motor output (W)		120										
	External static pressure (factory setting) (Pa)		50										
	External static pressure (Pa)		110										
Air filter			Standard filter (Long life filter)										
Controller			Remote controller										
Connecting pipe	Gas side (mm)		Ø 9.5			Ø 12.7			Ø 15.9				
	Liquid side (mm)		Ø 6.4						Ø 9.5				
	Drain port (Nominal dia. mm)		25 (Polyvinyl chloride tube)										
Sound pressure level(Note 2) (High/Mid./Low) (dB(A))			30/28/26		31/29/27		32/30/28	33/31/29		34/32/29	36/34/32	38/36/32	

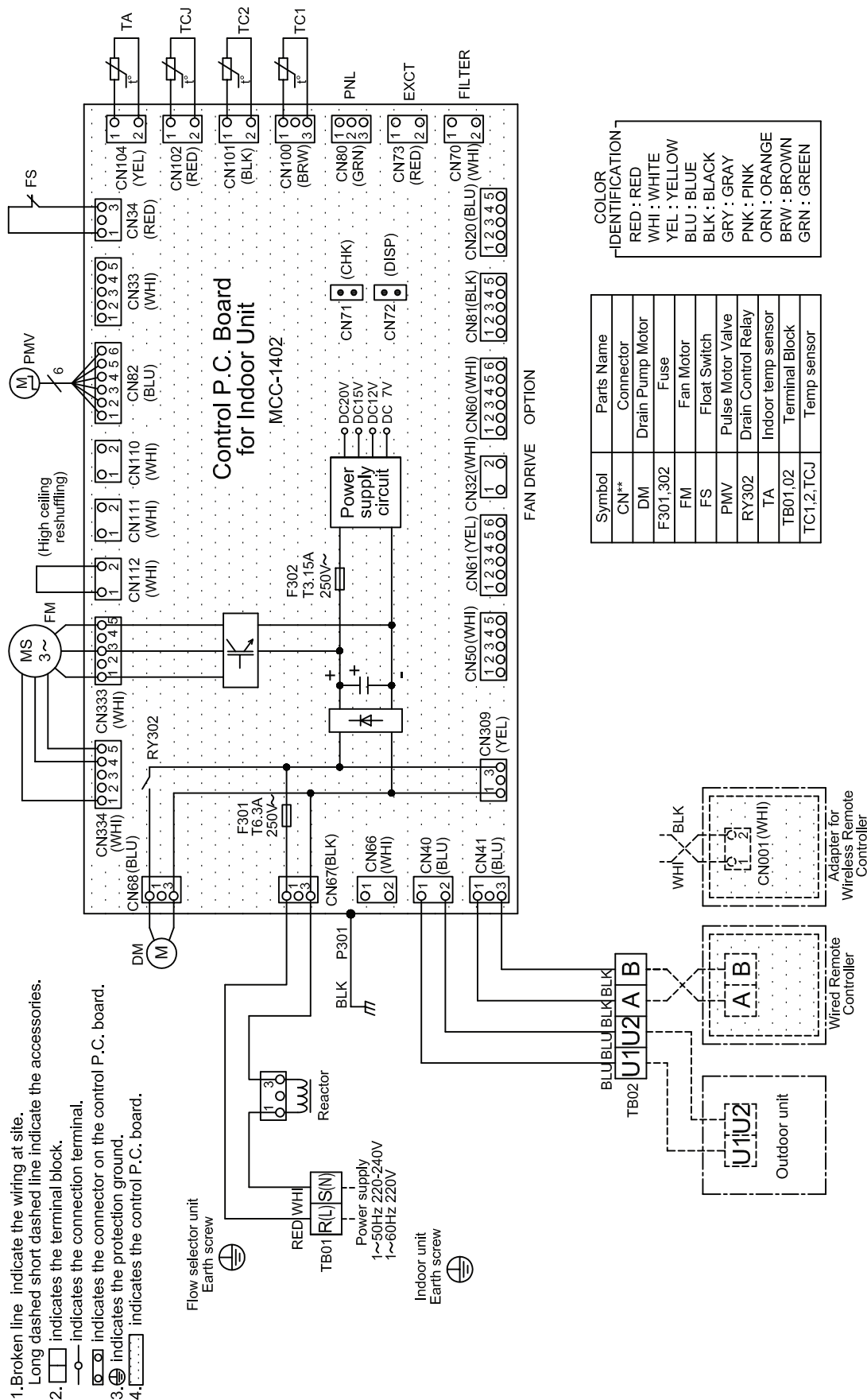
Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

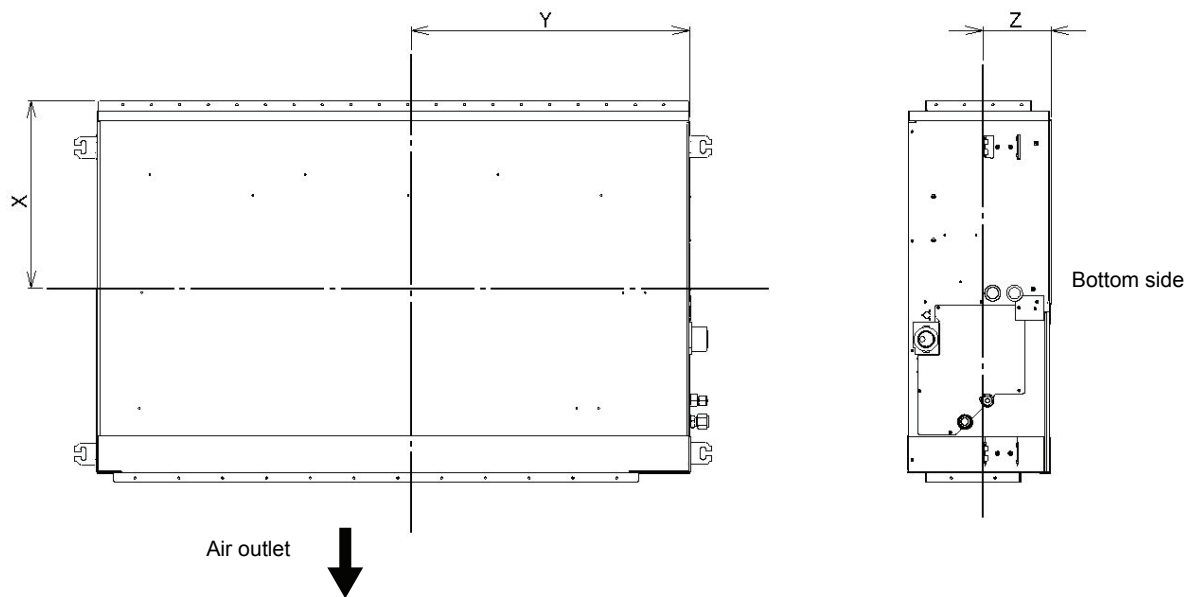
3. Wiring diagram

MMD-AP0074BH-E, AP0094BH-E, AP0124BH-E, AP0154BH-E, AP0184BH-E, AP0244BH-E, AP0274BH-E, AP0304BH-E, AP0364BH-E, AP0484BH-E, AP0564BH-E



4.Center of Gravity

Model name	X(mm)	Y(mm)	Z(mm)	Total weight(kg)
MMD-AP0074BH-E	420	270	155	28
MMD-AP0094BH-E				
MMD-AP0124BH-E				
MMD-AP0154BH-E	430	370	155	32
MMD-AP0184BH-E				
MMD-AP0244BH-E	435	460	155	43
MMD-AP0274BH-E				
MMD-AP0304BH-E				
MMD-AP0364BH-E	430	635	155	55
MMD-AP0484BH-E				
MMD-AP0564BH-E				



5. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
Concealed Duct Type	MMD-AP0074BH-E	230-1-50	198	264	0.120	0.33	0.41	15
	MMD-AP0094BH-E	230-1-50	198	264	0.120	0.33	0.41	15
	MMD-AP0124BH-E	230-1-50	198	264	0.120	0.39	0.49	15
	MMD-AP0154BH-E	230-1-50	198	264	0.120	0.39	0.49	15
	MMD-AP0184BH-E	230-1-50	198	264	0.120	0.50	0.62	15
	MMD-AP0244BH-E	230-1-50	198	264	0.120	0.60	0.75	15
	MMD-AP0274BH-E	230-1-50	198	264	0.120	0.60	0.75	15
	MMD-AP0304BH-E	230-1-50	198	264	0.120	0.70	0.88	15
	MMD-AP0364BH-E	230-1-50	198	264	0.120	0.96	1.20	15
	MMD-AP0484BH-E	230-1-50	198	264	0.120	1.13	1.41	15
	MMD-AP0564BH-E	230-1-50	198	264	0.120	1.13	1.41	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

6. Sensible capacity

Concealed Duct Type (MMD-AP***4BH-E)

TC : Total capacity [kW]

SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	12.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	14.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	16.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	18.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	20.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	21.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	23.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	25.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	27.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	29.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	31.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	33.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	35.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
009	37.0	1.7	1.5	1.9	1.6	2.1	1.7	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6
	39.0	1.7	1.4	1.9	1.5	2.0	1.6	2.1	1.6	2.1	1.6	2.3	1.6	2.4	1.5
	10.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	12.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	14.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	16.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	18.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	20.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	21.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	23.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	25.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	27.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	29.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	31.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
012	33.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	35.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	37.0	2.2	1.8	2.5	1.9	2.6	2.0	2.7	2.0	2.8	2.0	3.0	2.0	3.1	2.0
	39.0	2.2	1.8	2.4	1.9	2.6	2.0	2.6	2.0	2.7	2.0	2.9	2.0	3.0	1.9
	10.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	12.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	14.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	16.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	18.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	20.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	21.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	23.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	25.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	27.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
015	29.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	31.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	33.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	35.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	37.0	2.9	2.1	3.2	2.3	3.4	2.4	3.5	2.4	3.6	2.4	3.8	2.4	4.0	2.3
	39.0	2.8	2.1	3.1	2.2	3.3	2.4	3.4	2.4	3.5	2.4	3.7	2.3	3.9	2.3
	10.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	12.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	14.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	16.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	18.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	20.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	21.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	23.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	25.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	27.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	29.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	31.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	33.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	35.0	3.7	2.7	4.1	2.8	4.4	3.0	4.5	3.0	4.6	3.0	4.9	3.0	5.1	2.9
	37.0	3.6	2.6	4.0	2.7	4.2	2.9	4.4	2.9	4.5	2.9	4.7	2.9	5.0	2.8
	39.0	3.5	2.5	3.8	2.7	4.1	2.8	4.2	2.8	4.4	2.8	4.6	2.8	4.8	2.7

Concealed Duct Type (MMD-AP***4BH-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	10.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	12.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	14.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	16.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	18.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	20.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	21.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	23.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	25.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	27.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	29.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	31.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	33.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
	35.0	4.6	3.3	5.1	3.5	5.4	3.7	5.6	3.7	5.8	3.7	6.1	3.7	6.4	3.6
024	10.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	12.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	14.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	16.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	18.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	20.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	21.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	23.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	25.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	27.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	29.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	31.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	33.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	35.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
027	10.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	12.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	14.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	16.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	18.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	20.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	21.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	23.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	25.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	27.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	29.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	31.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	33.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	35.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
030	10.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	12.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	14.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	16.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	18.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	20.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	21.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	23.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	25.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	27.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	29.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	31.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	33.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	35.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	37.0	7.2	5.3	7.9	5.7	8.5	6.0	8.7	6.0	9.0	6.0	9.5	5.9	9.9	5.8
	39.0	7.0	5.2	7.7	5.5	8.2	5.9	8.5	5.8	8.7	5.8	9.2	5.8	9.7	5.6

Concealed Duct Type (MMD-AP***4BH-E)

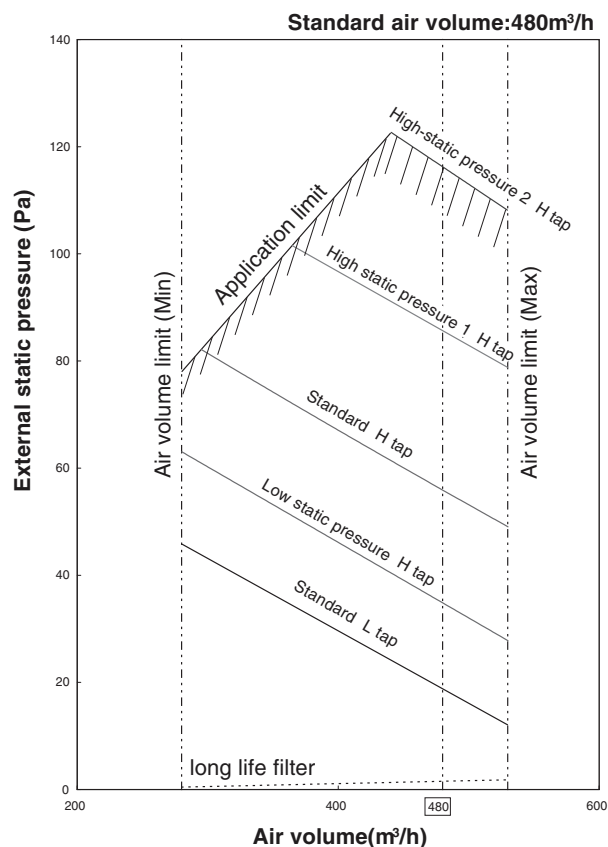
TC : Total capacity [kW] SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
036	10.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	12.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	14.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	16.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	18.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	20.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	21.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	23.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	25.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	27.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	29.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	31.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	33.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
	35.0	9.2	6.5	10.2	6.9	10.9	7.3	11.2	7.3	11.5	7.3	12.2	7.2	12.8	7.1
048	37.0	8.9	6.3	9.8	6.7	10.5	7.1	10.8	7.1	11.2	7.1	11.8	7.0	12.4	6.8
	39.0	8.7	6.1	9.6	6.5	10.2	6.9	10.5	6.9	10.9	6.9	11.5	6.8	12.0	6.6
	10.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	12.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	14.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	16.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	18.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	20.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	21.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	23.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	25.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	27.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	29.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	31.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
056	33.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	35.0	11.5	8.2	12.7	8.7	13.6	9.2	14.0	9.2	14.4	9.2	15.3	9.1	16.0	8.9
	37.0	11.1	7.9	12.3	8.4	13.1	8.9	13.6	8.9	14.0	8.9	14.8	8.8	15.4	8.6
	39.0	10.8	7.7	12.0	8.2	12.8	8.7	13.2	8.7	13.6	8.7	14.4	8.6	15.0	8.4
	10.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	12.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	14.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	16.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	18.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	20.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	21.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	23.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	25.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	27.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	29.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	31.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	33.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	35.0	13.1	9.6	14.5	10.2	15.5	10.8	16.0	10.8	16.5	10.8	17.4	10.7	18.2	10.5
	37.0	12.7	9.3	14.1	9.9	15.0	10.5	15.5	10.5	16.0	10.5	16.9	10.4	17.7	10.1
	39.0	12.4	9.0	13.7	9.6	14.6	10.2	15.1	10.2	15.5	10.2	16.4	10.1	17.2	9.8

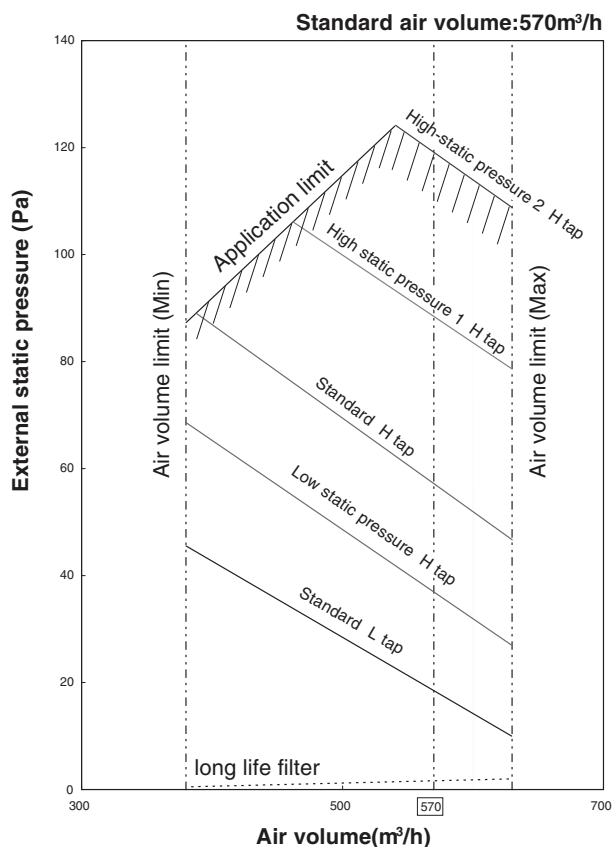
7. Fan characteristics

Factory default : Standard H tap

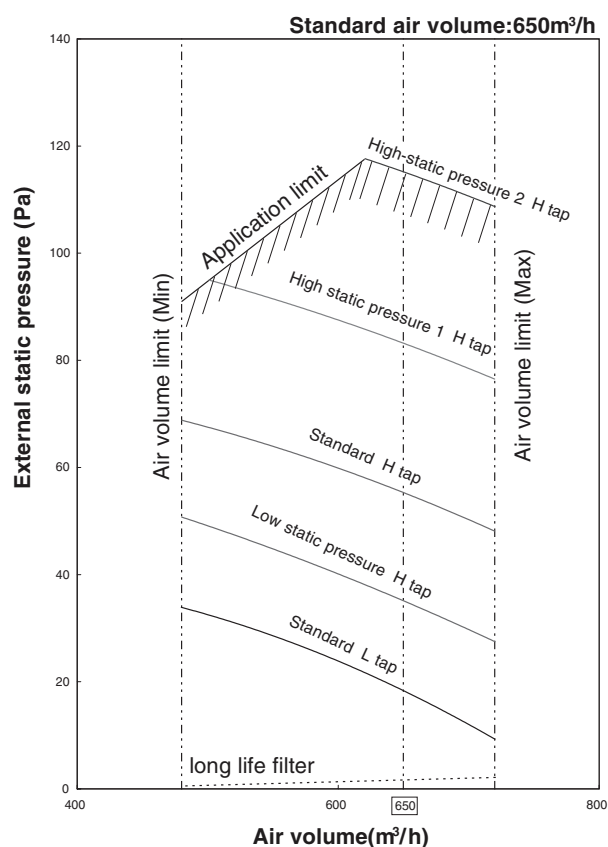
MMD-AP0074BH-E, AP0094BH-E



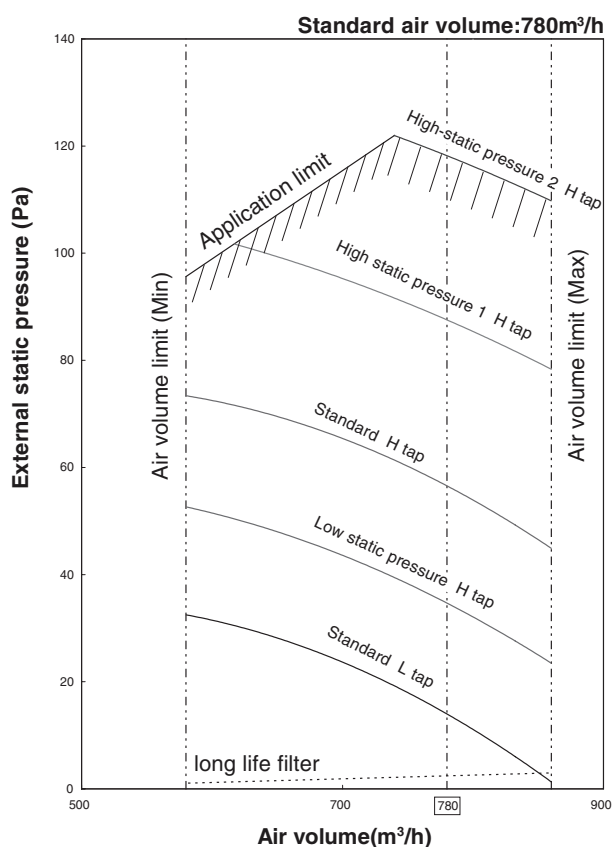
MMD-AP0124BH-E



MMD-AP0154BH-E

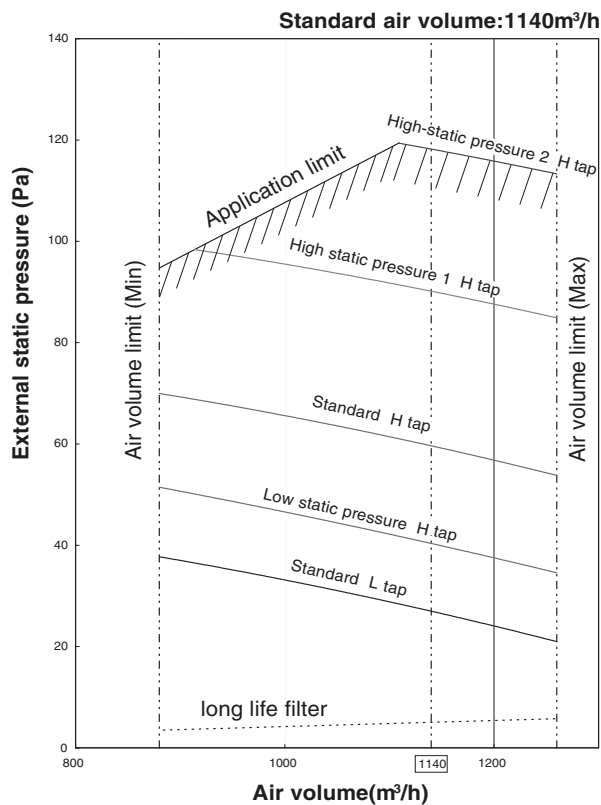


MMD-AP0184BH-E

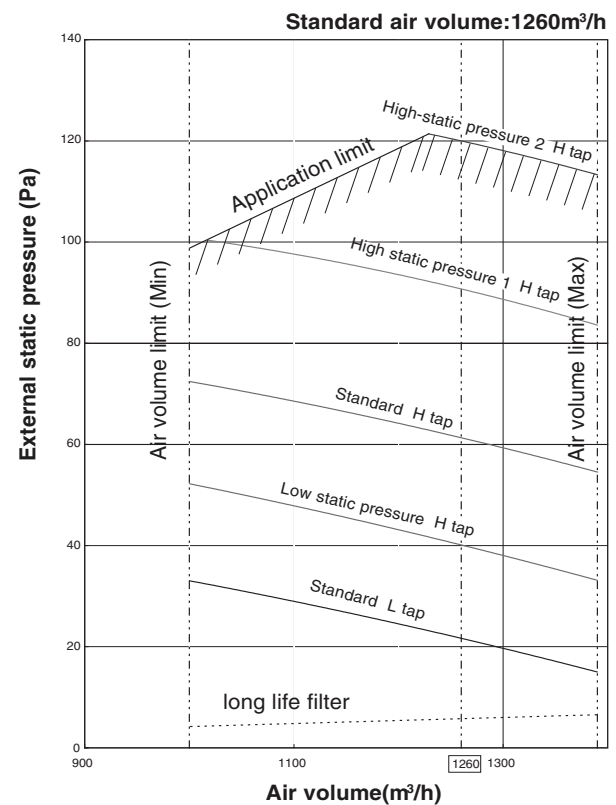


Factory default : Standard H tap

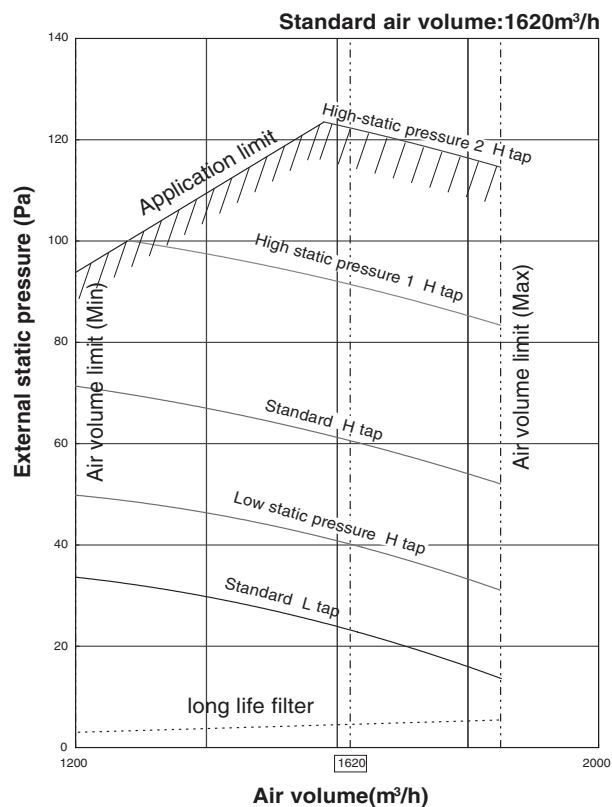
MMD-AP0244BH-E, AP0274BH-E



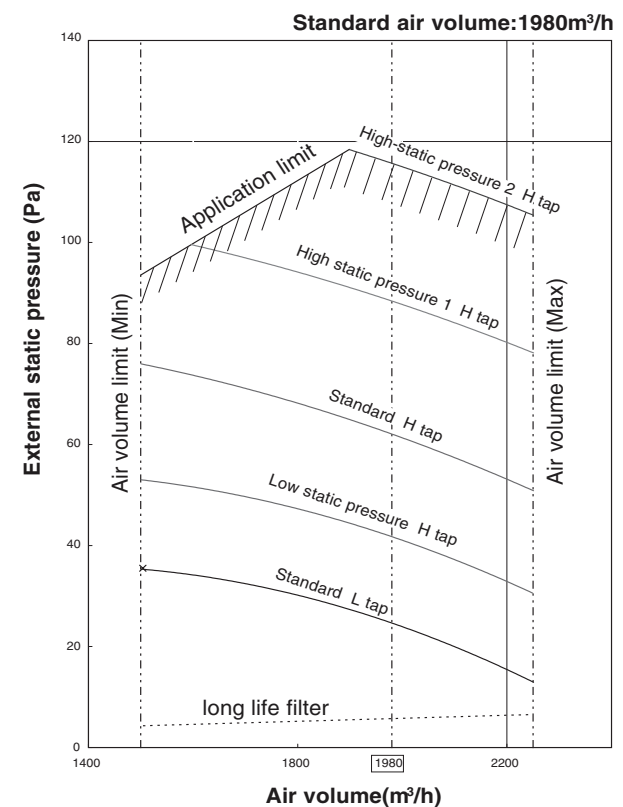
MMD-AP0304BH-E



MMD-AP0364BH-E

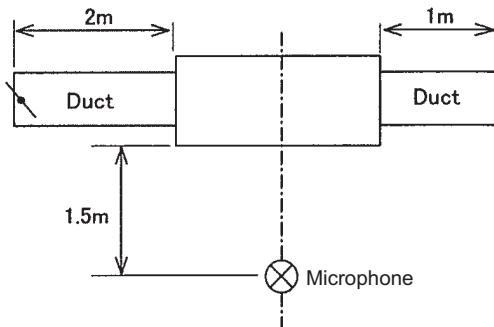


MMD-AP0484BH-E, AP0564BH-E

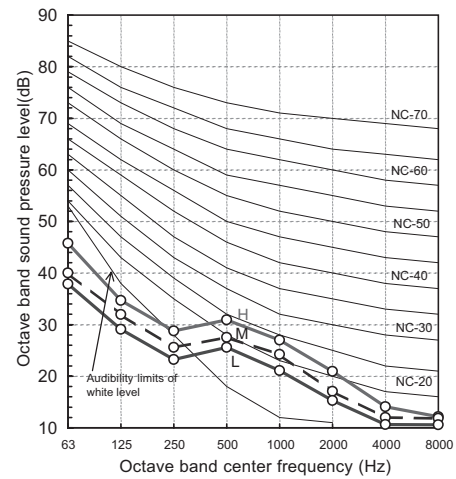


8. Sound level data (NC CURVE)

MMD-AP0074BH-E, AP0094BH-E

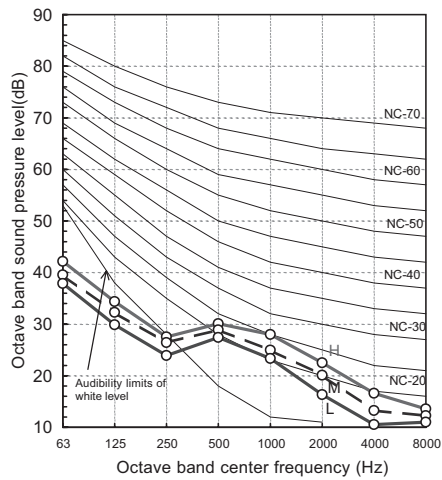


Fan Tap	H	M	L
Sound pressure level (dB(A))	30	28	26



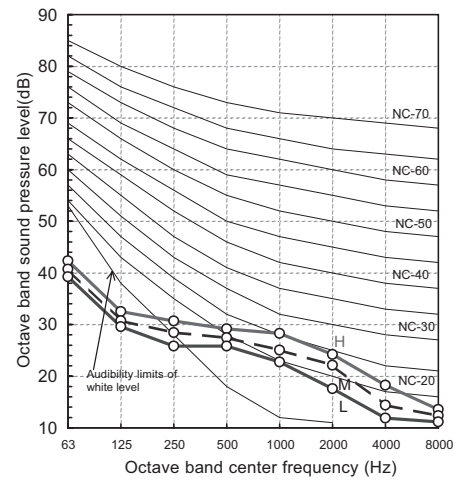
MMD-AP0124BH-E

Fan Tap	H	M	L
Sound pressure level (dB(A))	31	29	27



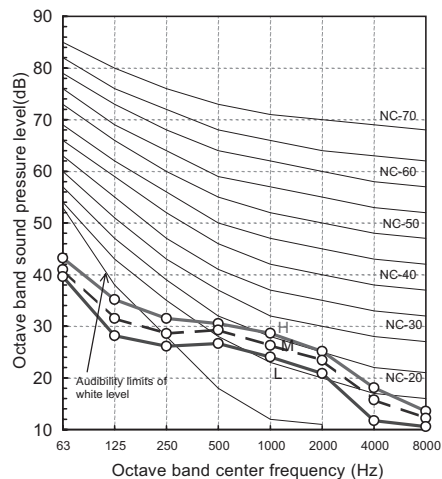
MMD-AP0154BH-E

Fan Tap	H	M	L
Sound pressure level (dB(A))	31	29	27



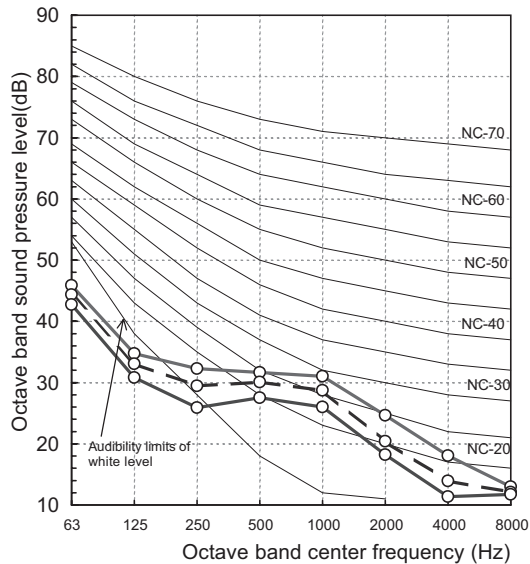
MMD-AP0184BH-E

Fan Tap	H	M	L
Overall level dB(A)	32	30	28



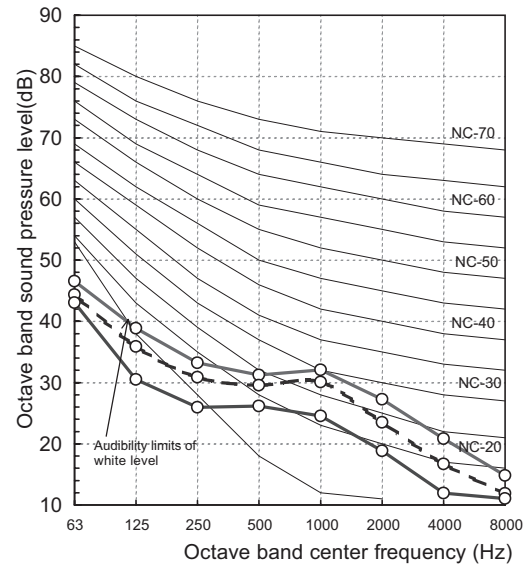
MMD-AP0244BH-E, AP0274BH-E

Fan Tap	H	M	L
Sound pressure level (dB(A))	33	31	29



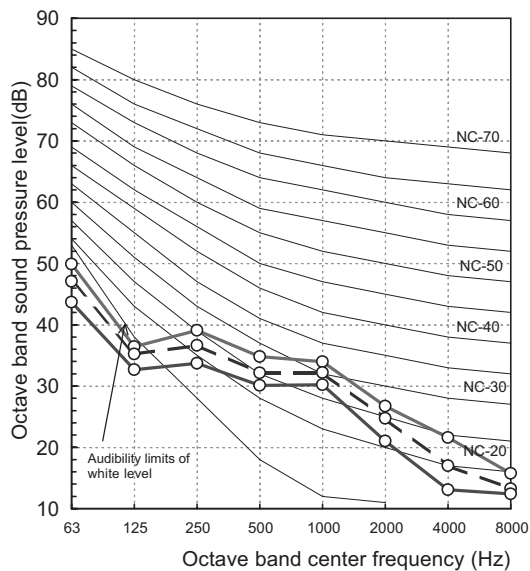
MMD-AP0304BH-E

Fan Tap	H	M	L
Sound pressure level (dB(A))	34	32	29



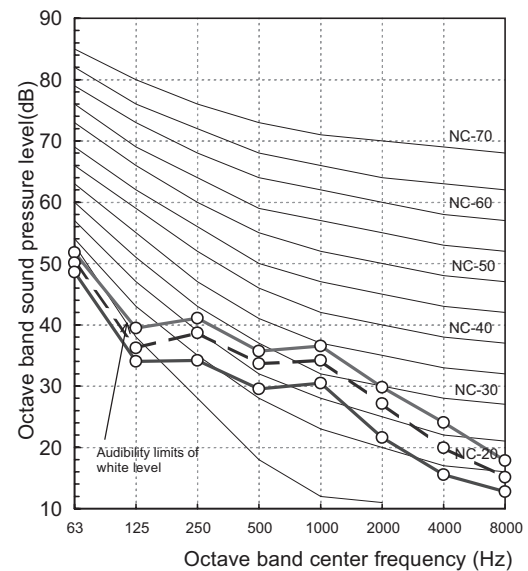
MMD-AP0364BH-E

Fan Tap	H	M	L
Sound pressure level (dB(A))	36	34	32



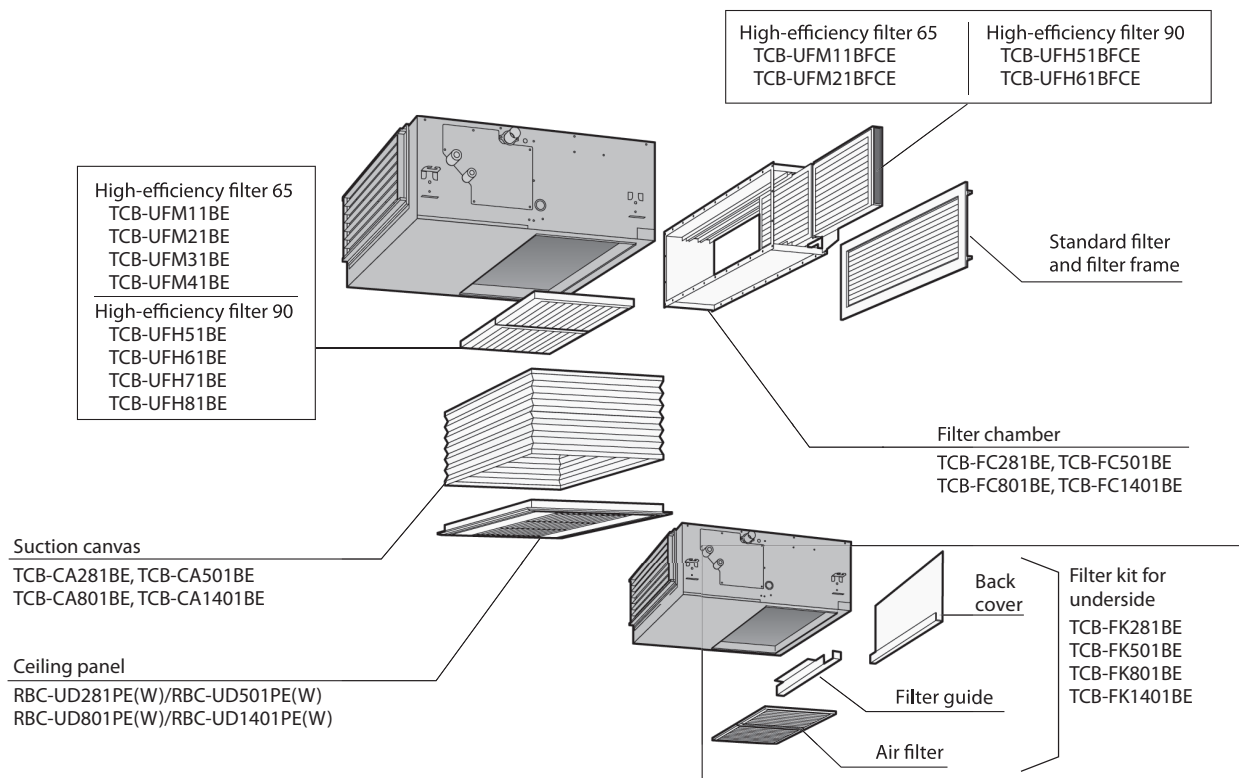
MMD-AP0484BH-E, AP0564BH-E

Fan Tap	H	M	L
Sound pressure level (dB(A))	38	36	32



9. Accessories

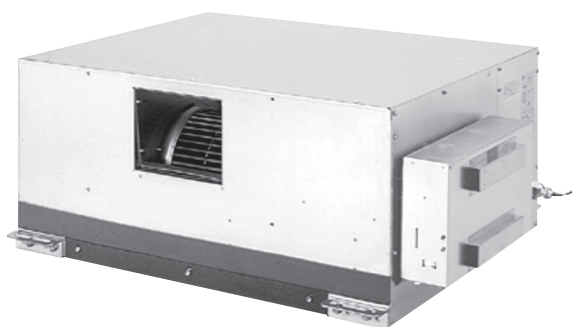
Parts name	Model name	Applied model	Note	Remarks
High-efficiency filter 65 (for rear suction)	TCB-UFM11BFCE	MMD-AP0074/0094/0124BH-E	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FC281BE
	TCB-UFM21BFCE	MMD-AP0154/0184BH-E		Use with TCB-FC501BE
	TCB-UFM11BFCE (2 pcs.)	MMD-AP0244/0274/0304BH-E		Use with TCB-FC801BE
	TCB-UFM21BFCE (2 pcs.)	MMD-AP0364/0484/0564BH-E		Use with TCB-FC1401BE
High-efficiency filter 90 (for rear suction)	TCB-UFH51BFCE	MMD-AP0074/0094/0124BH-E	Dust collecting effect: 90% (NBS Colorimetric method)	Use with TCB-FC281BE
	TCB-UFH61BFCE	MMD-AP0154/0184BH-E		Use with TCB-FC501BE
	TCB-UFH51BFCE (2 pcs.)	MMD-AP0244/0274/0304BH-E		Use with TCB-FC801BE
	TCB-UFH61BFCE (2 pcs.)	MMD-AP0364/0484/0564BH-E		Use with TCB-FC1401BE
Filter chamber (for rear suction)	TCB-FC281BE	MMD-AP0074/0094/0124BH-E	For high-efficiency filter	
	TCB-FC501BE	MMD-AP0154/0184BH-E		
	TCB-FC801BE	MMD-AP0244/0274/0304BH-E		
	TCB-FC1401BE	MMD-AP0364/0484/0564BH-E		
High-efficiency filter 65 (for underside suction)	TCB-UFM11BE	MMD-AP0074/0094/0124BH-E	Dust collecting effect: 65% (NBS Colorimetric method)	
	TCB-UFM21BE	MMD-AP0154/0184BH-E		
	TCB-UFM31BE	MMD-AP0244/0274/0304BH-E		
	TCB-UFM41BE	MMD-AP0364/0484/0564BH-E		
High-efficiency filter 90 (for underside suction)	TCB-UFH51BE	MMD-AP0074/0094/0124BH-E	Dust collecting effect: 90% (NBS Colorimetric method)	
	TCB-UFH61BE	MMD-AP0154/0184BH-E		
	TCB-UFH71BE	MMD-AP0244/0274/0304BH-E		
	TCB-UFH81BE	MMD-AP0364/0484/0564BH-E		
Ceiling panel (half panel for underside suction)	RBC-UD281PE(W)	MMD-AP0074/0094/0124BH-E		
	RBC-UD501PE(W)	MMD-AP0154/0184BH-E		
	RBC-UD801PE(W)	MMD-AP0244/0274/0304BH-E		
	RBC-UD1401PE(W)	MMD-AP0364/0484/0564BH-E		
Suction canvas (for underside suction)	TCB-CA281BE	MMD-AP0074/0094/0124BH-E	Adjustment height of the suction canvas is between 40 mm and 100 mm	
	TCB-CA501BE	MMD-AP0154/0184BH-E		
	TCB-CA801BE	MMD-AP0244/0274/0304BH-E		
	TCB-CA1401BE	MMD-AP0364/0484/0564BH-E		
Filter kit for underside	TCB-FK281BE	MMD-AP0074/0094/0124BH-E	Kit of underside prefilter & shielding plate of rear suction	
	TCB-FK501BE	MMD-AP0154/0184BH-E		
	TCB-FK801BE	MMD-AP0244/0274/0304BH-E		
	TCB-FK1401BE	MMD-AP0364/0484/0564BH-E		



11-2-6. Concealed Duct High Static Pressure Type

Concealed Duct High Static Pressure Type

MMD-AP0184H-E / MMD-AP0244H-E
MMD-AP0274H-E / MMD-AP0364H-E
MMD-AP0484H-E / MMD-AP0724H-E
MMD-AP0964H-E



Contents

1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. Fan characteristics
8. Sound characteristics (NC-Curve)
9. Accessories



1. Specifications

Concealed Duct High Static Pressure Type

Model name		MMD-	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E	AP0724H-E	AP0964H-E
Cooling/Heating capacity (Note 1)		(kW)	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	22.4/25.0	28.0/31.5
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Separate power supply for indoor units is required.)						
	Running current (A)		0.81	1.35		1.63	1.84	5.25	5.52
	Power consumption (kW)		0.184	0.299		0.368	0.414	1.200	1.260
	Power factor (%)		99	96		98	98	99	99
	Starting current (A)		1.3	3.5		4.1	4.8	13.6	14.8
Appearance			Zinc hot dipping steel plate						
Outer dimension	Height x Width x Depth (mm)		380 x 850 x 660				380 x 1,200 x 660	470 x 1,380 x 1,250	
Total weight (kg)			50	52		56	67	150	
Heat exchanger			Finned tube						
Soundproof/Heat-insulating material			Non-flammable insulation						
Fan unit	Fan		Centrifugal fan						
	Standard air flow (m³/h)		900	1,320		1,600	2,100	3,600	4,200
	Motor output (W)		160			260		370 x 3	
	External static pressure (Factory setting) (Pa)		137						
	External static pressure (Pa)		68.6-137-196						
	Air flow limit Lower limit/Upper limit (m³/h)		720/1,080	1,060/1,580		1,280/1,920	1,680/2,520	2,880/4,320	3,360/5,040
Air filter			Option or field supply						
Controller			Remote controller						
Connecting pipe	Gas side (mm)		ø 12.7	ø 15.9				ø 22.2	
	Liquid side (mm)		ø 6.4	ø 9.5				ø 12.7	
	Drain port (Nominal dia. mm)		25 (One side of male screw)						
Sound pressure level(Note 2) (High/Mid./Low) (dB(A))			37	40				49	50

Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

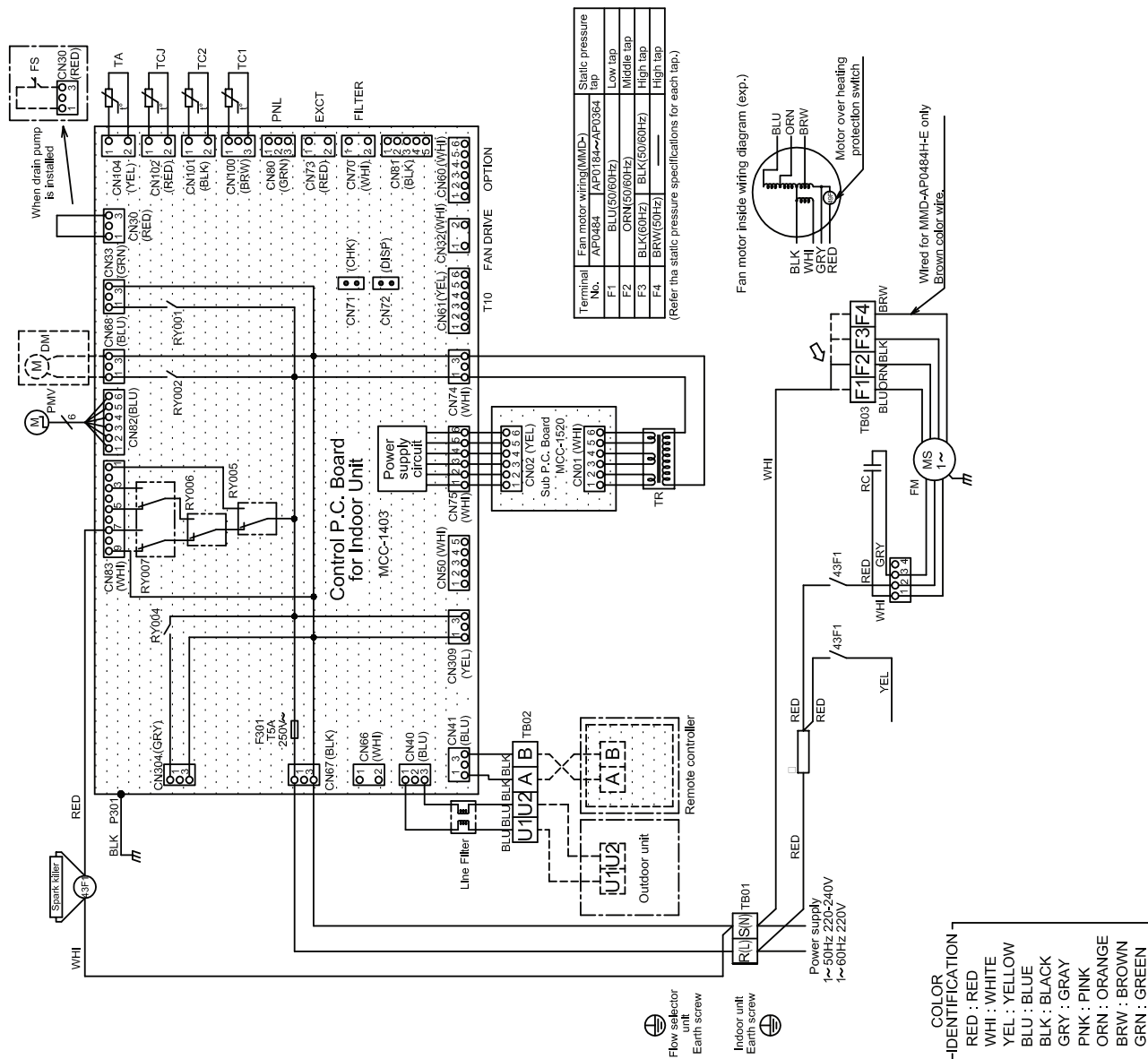
MMD-AP0184H-E, AP0244H-E, AP0274H-E, AP0364H-E



(Unit: mm)

(Unit: mm)

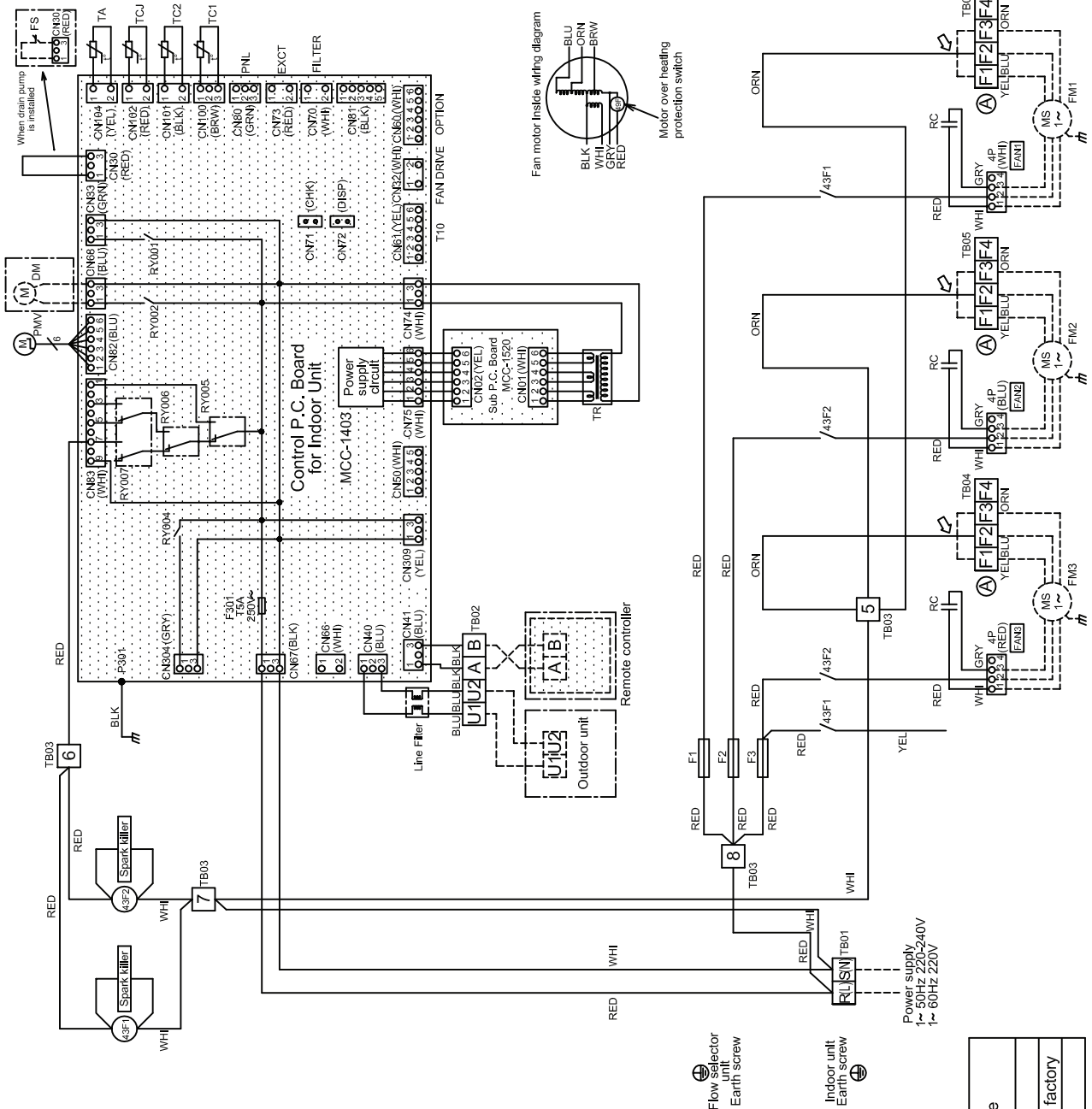
MMD-AP0184H-E, AP0244H-E, AP0274H-E, AP0364H-E, AP0484H-E



Symbol	Parts Name
43F1,F2	Fan motor Control Relay
CN**	Connector
F	Fuse
F301	Fuse
FM	Fan Motor
PMV	Pulse Motor Valve
RC	Running Capacitor
RY002	Drain Control Relay
RY005,006,007	Fan Motor Control Relay
TA	Indoor temp sensor
TB01,02,03	Terminal Block
TC1,TC2,TCJ	Temp sensor
TR	Transformer
DM	Drain Pump Motor
FS	Float Switch

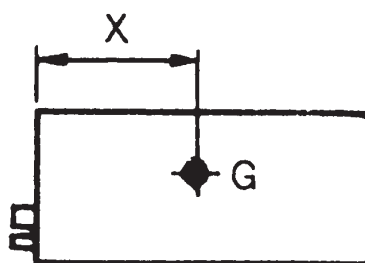
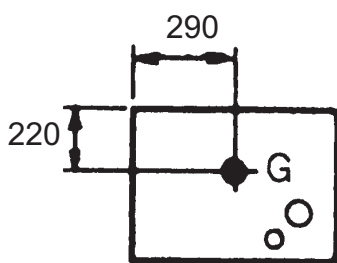
1. Broken line indicates the wiring at site.
Long dashed short dashed line indicates the accessories.
2.  indicates the terminal block.
—○— indicates the connection terminal.
3.  indicates the protection ground.
4.  indicates the control P.C. board.
5. When installing the drain pump connect the float switch connector to CN30 connector.
6.  position is connected to terminal block when change to static pressure.
exchange the lead wire of arrow(↗) position after check the terminal number as figure and lead wire's color of fan motor.
7. Be careful when modify the static pressure, the static pressure of high tap is different by 50Hz or 60Hz.

AP0724H-E, AP0964H-E



4. Center of gravity

Model name	X (mm)	Total weight(kg)
MMD-AP0184H-E	520	50
MMD-AP0244H-E		52
MMD-AP0274H-E		
MMD-AP0364H-E	400	56
MMD-AP0484H-E	565	67
MML-AP0724H-E	660	150
MML-AP0964H-E		150



Y=540, Z=205(mm)

5. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
Concealed Duct High Static Pressure Type	MMD-AP0184H-E	230-1-50	198	264	0.160	0.93	1.16	15
	MMD-AP0244H-E	230-1-50	198	264	0.160	1.55	1.94	15
	MMD-AP0274H-E	230-1-50	198	264	0.160	1.55	1.94	15
	MMD-AP0364H-E	230-1-50	198	264	0.260	1.87	2.34	15
	MMD-AP0484H-E	230-1-50	198	264	0.260	2.12	2.65	15
	MMD-AP0724H-E	230-1-50	198	264	0.370 x 3	6.04	7.55	15
	MMD-AP0964H-E	230-1-50	198	264	0.370 x 3	6.35	7.94	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

6. Sensible capacity table

Concealed Duct High Static Pressure Type (MMD-AP***4H-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	10.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	12.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	14.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	16.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	18.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	20.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	21.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	23.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	25.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	27.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	29.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	31.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	33.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
024	35.0	4.6	3.6	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	37.0	4.5	3.5	4.9	3.7	5.3	3.9	5.4	3.9	5.6	3.9	5.9	3.9	6.2	3.8
	39.0	4.3	3.4	4.8	3.6	5.1	3.8	5.3	3.8	5.4	3.8	5.7	3.8	6.0	3.7
	10.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	12.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	14.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	16.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	18.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	20.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	21.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	23.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	25.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	27.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
027	29.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	31.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	33.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	35.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	37.0	5.6	4.3	6.2	4.6	6.7	4.9	6.9	4.8	7.1	4.8	7.5	4.8	7.8	4.7
	39.0	5.5	4.2	6.1	4.4	6.5	4.7	6.7	4.7	6.9	4.7	7.3	4.7	7.6	4.6
	10.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	12.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	14.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	16.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	18.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	20.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	21.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	23.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	25.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	27.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	29.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	31.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	33.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	35.0	6.6	4.8	7.3	5.1	7.8	5.4	8.0	5.4	8.2	5.4	8.7	5.3	9.1	5.2
	37.0	6.4	4.6	7.0	4.9	7.5	5.2	7.7	5.2	8.0	5.2	8.4	5.2	8.8	5.1
	39.0	6.2	4.5	6.8	4.8	7.3	5.1	7.5	5.1	7.8	5.1	8.2	5.0	8.6	4.9
036	10.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	12.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	14.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	16.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	18.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	20.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	21.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	23.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	25.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	27.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	29.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	31.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	33.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	35.0	9.2	6.9	10.2	7.4	10.9	7.8	11.2	7.8	11.5	7.8	12.2	7.7	12.8	7.5
	37.0	8.9	6.7	9.8	7.1	10.5	7.6	10.8	7.6	11.2	7.5	11.8	7.5	12.4	7.3
	39.0	8.7	6.5	9.6	6.9	10.2	7.4	10.5	7.3	10.9	7.3	11.5	7.3	12.0	7.1

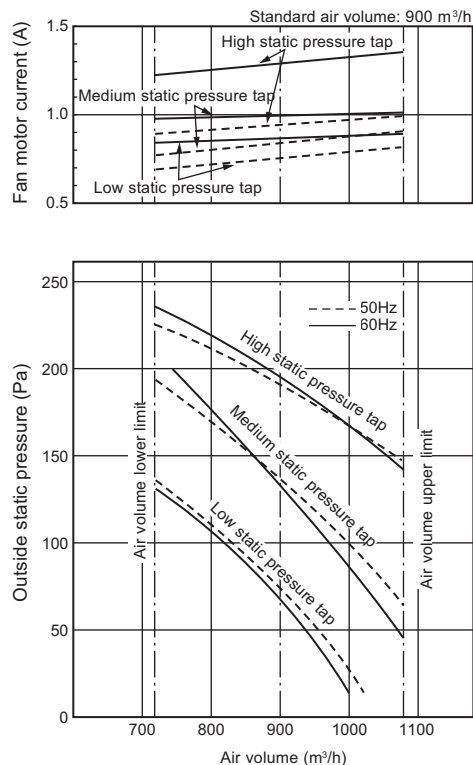
Concealed Duct High Static Pressure Type (MMD-AP***4H-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

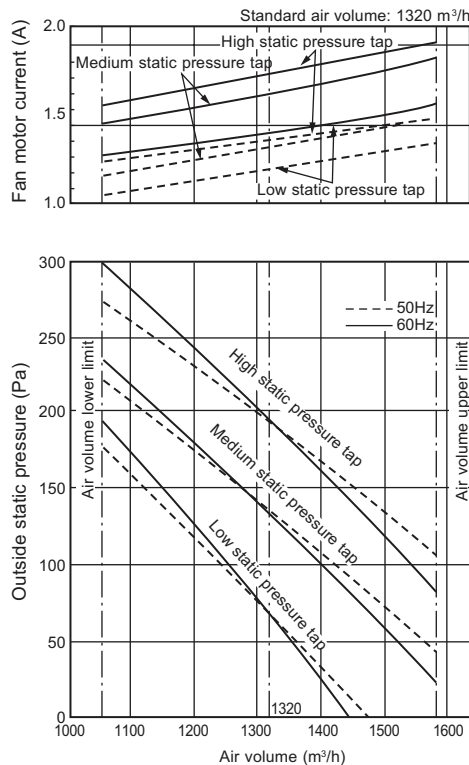
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
048	10.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	12.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	14.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	16.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	18.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	20.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	21.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	23.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	25.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	27.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	29.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	31.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	33.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	35.0	11.5	8.4	12.7	9.0	13.6	9.5	14.0	9.5	14.4	9.5	15.3	9.4	16.0	9.2
	37.0	11.1	8.2	12.3	8.7	13.1	9.2	13.6	9.2	14.0	9.2	14.8	9.1	15.4	8.9
	39.0	10.8	7.9	12.0	8.4	12.8	9.0	13.2	8.9	13.6	8.9	14.4	8.9	15.0	8.7
072	10.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	12.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	14.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	16.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	18.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	20.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	21.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	23.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	25.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	27.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	29.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	31.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	33.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	35.0	18.4	13.2	20.3	14.1	21.7	14.9	22.4	14.9	23.1	14.9	24.4	14.8	25.5	14.4
	37.0	17.8	12.8	19.7	13.6	21.0	14.5	21.7	14.4	22.3	14.4	23.6	14.3	24.7	14.0
	39.0	17.3	12.4	19.1	13.2	20.4	14.1	21.1	14.0	21.7	14.0	23.0	13.9	24.0	13.6
096	10.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	12.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	14.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	16.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	18.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	20.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	21.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	23.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	25.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	27.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	29.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	31.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	33.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	35.0	23.0	16.2	25.4	17.3	27.2	18.4	28.0	18.3	28.8	18.3	30.5	18.1	31.9	17.7
	37.0	22.3	15.7	24.6	16.7	26.3	17.8	18.3	17.7	27.9	17.7	29.5	17.6	30.9	17.1
	39.0	21.6	15.3	23.9	16.3	25.6	17.3	26.3	17.2	27.1	17.2	28.7	17.1	30.0	16.7

7. Fan characteristic

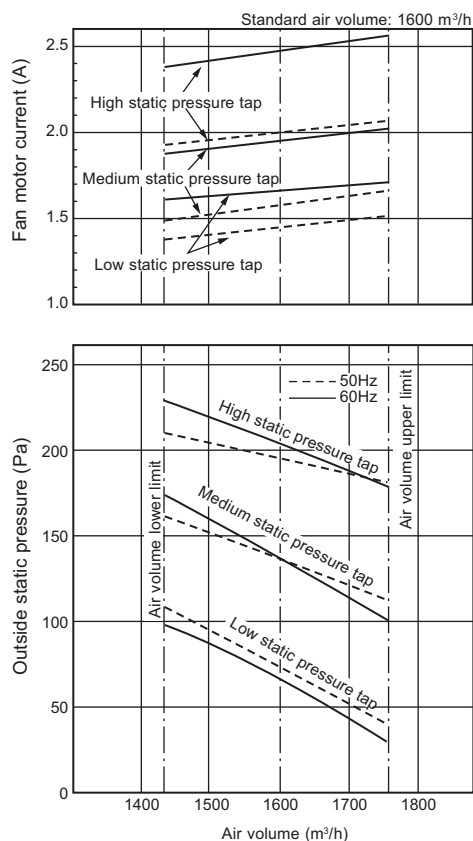
MMD-AP0184H-E



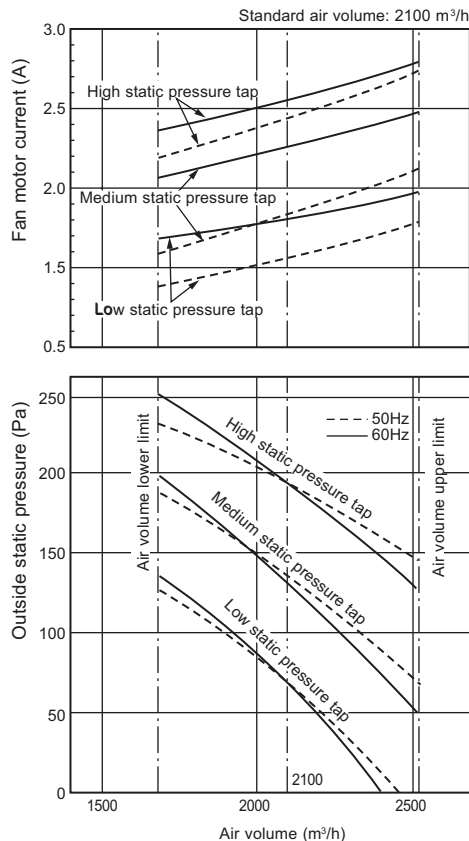
MMD-AP0244H-E, AP0274H-E



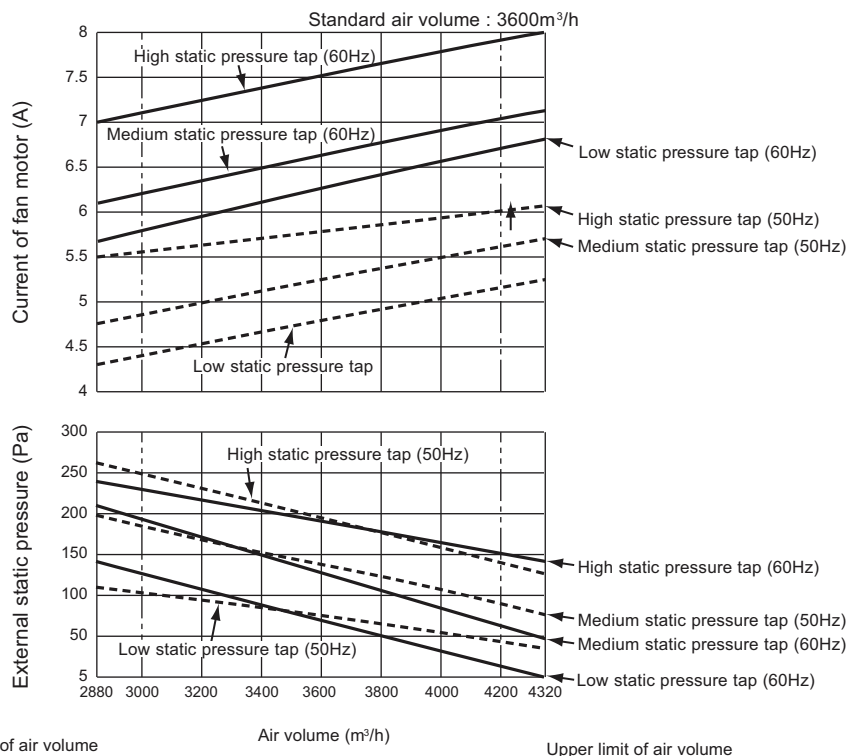
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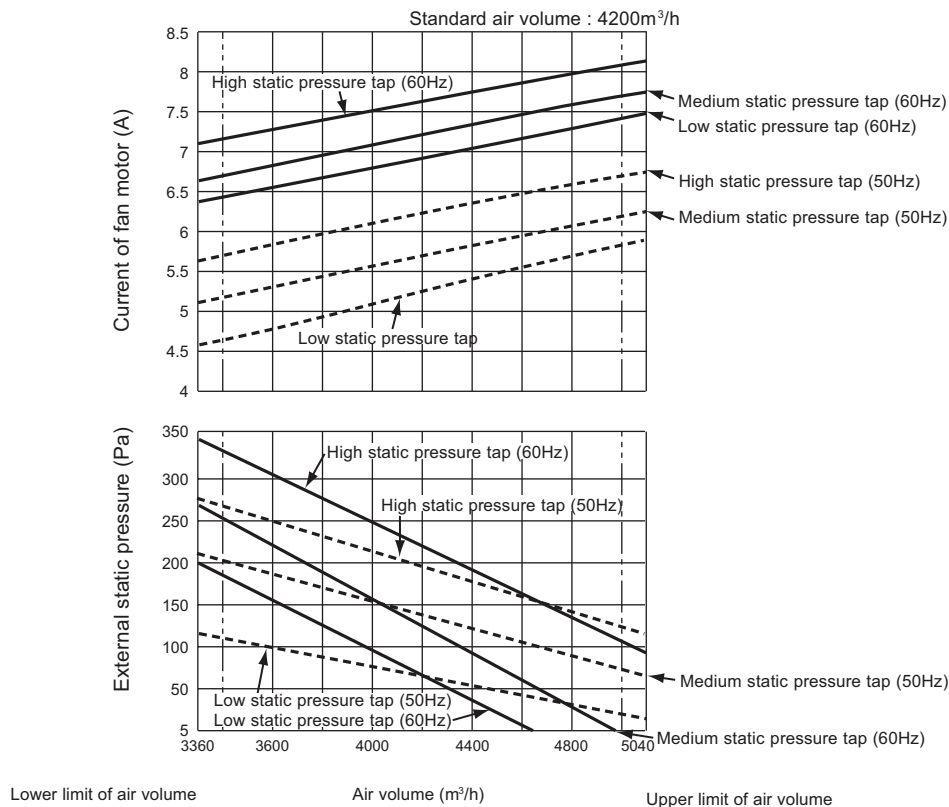
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MMD-AP0724H-E



MMD-AP0964H-E

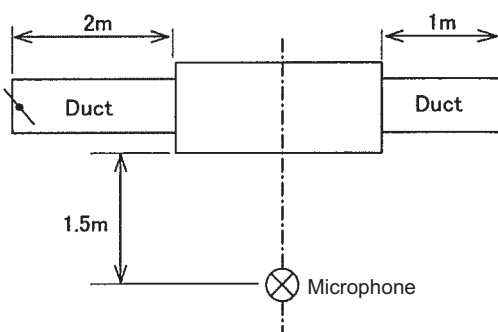


REQUIREMENT

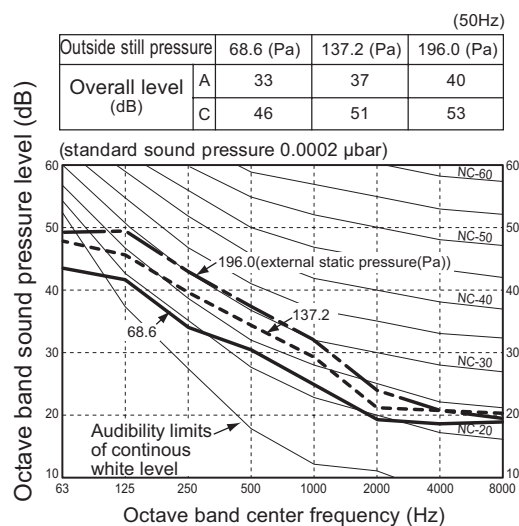
Add a air volume damper to the supplied air duct, and adjust the air volume from 80% to 120% of the standard air volume.

8. Sound level data (NC CURVE)

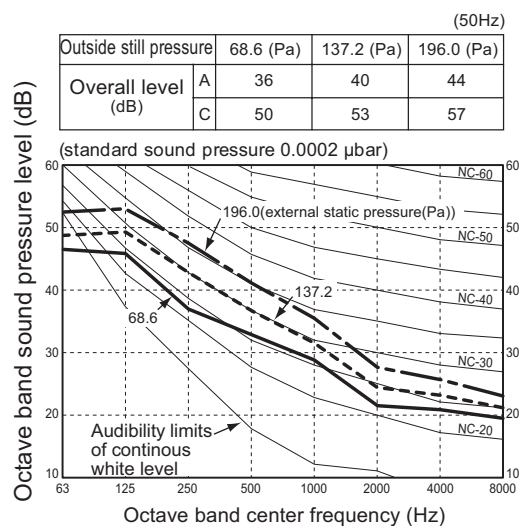
Sound level values shown are based on a measurement in a non resonant room.



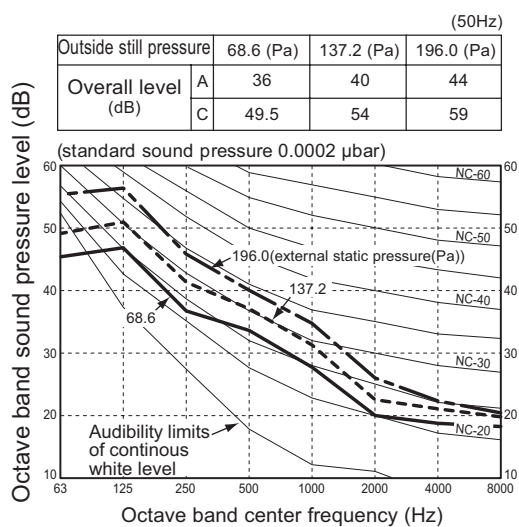
MMD-AP0184H-E



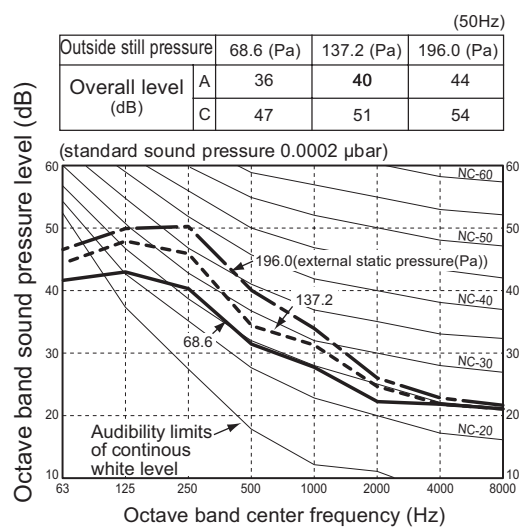
MMD-AP0244H-E, AP0274H-E



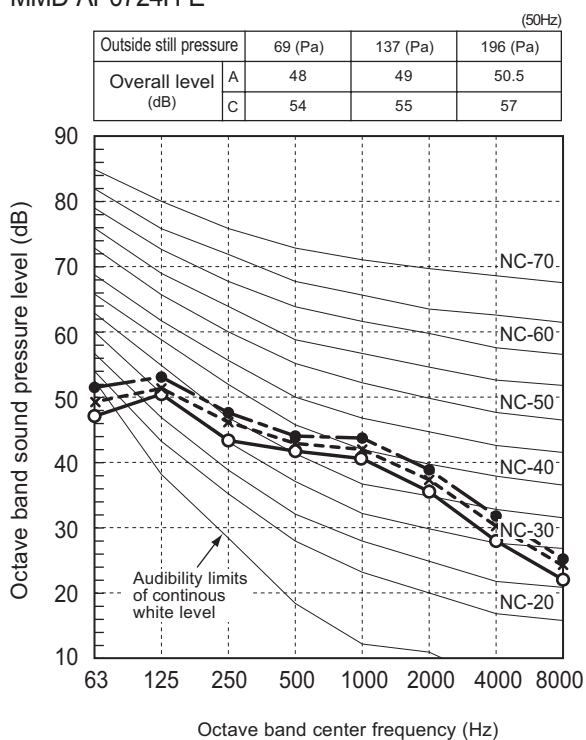
MMD-AP0364H-E



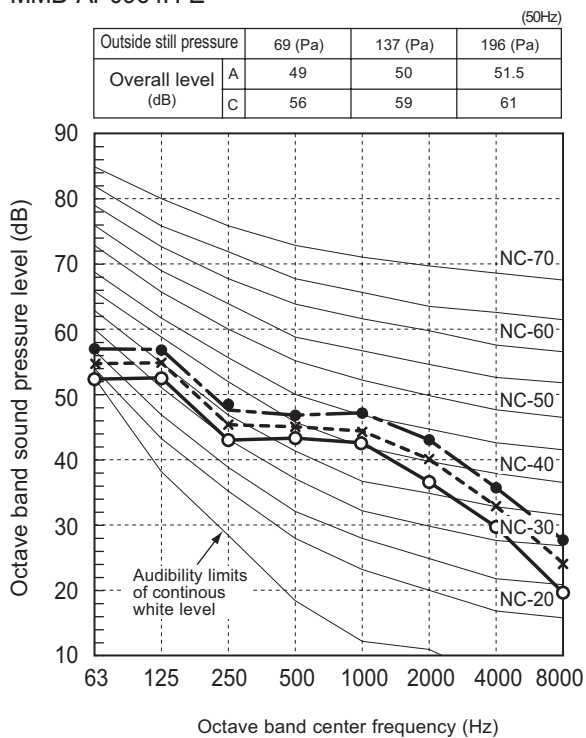
MMD-AP0484H-E



MMD-AP0724H-E

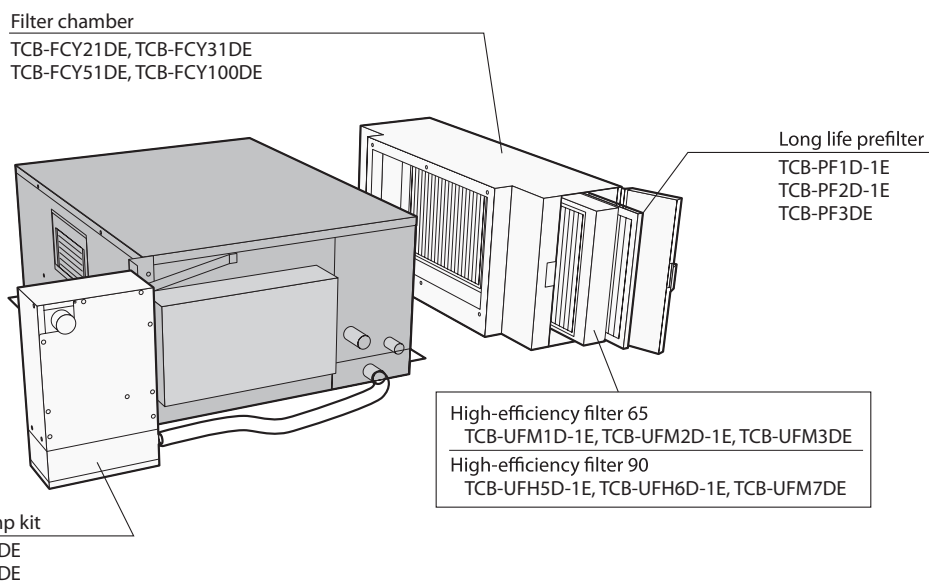


MMD-AP0964H-E



9. Accessories

Parts name	Model name	Applied model	Note	Remarks
High-efficiency filter 65	TCB-UFM1D-1E	MMD-AP0184H-E	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FCY21DE
	TCB-UFM2D-1E (2 pcs.)	MMD-AP0244/0274/0364H-E		Use with TCB-FCY31DE
	TCB-UFM1D-1E (2 pcs.)	MMD-AP0484H-E		Use with TCB-FCY51DE
	TCB-UFM3DE	MMD-AP0724/0964H-E		Use with TCB-FCY100DE
High-efficiency filter 90	TCB-UFH5D-1E	MMD-AP0184H-E	Dust collecting effect: 90% (NBS Colorimetric method)	Use with TCB-FCY21DE
	TCB-UFH6D-1E (2 pcs.)	MMD-AP0244/0274/0364H-E		Use with TCB-FCY31DE
	TCB-UFH5D-1E (2 pcs.)	MMD-AP0484H-E		Use with TCB-FCY51DE
	TCB-UFH7DE	MMD-AP0724/0964H-E		Use with TCB-FCY100DE
Long life prefilter	TCB-PF1D-1E	MMD-AP0184H-E	Dust collecting effect: 50% (Weight method)	Use with TCB-FCY21DE
	TCB-PF2D-1E (2 pcs.)	MMD-AP0244/0274/0364H-E		Use with TCB-FCY31DE
	TCB-PF1D-1E (2 pcs.)	MMD-AP0484H-E		Use with TCB-FCY51DE
	TCB-PF3DE	MMD-AP0724/0964H-E		Use with TCB-FCY100DE
Filter chamber	TCB-FCY21DE	MMD-AP0184H-E	For high-efficiency filter or long life prefilter	
	TCB-FCY31DE	MMD-AP0244/0274/0364H-E		
	TCB-FCY51DE	MMD-AP0484H-E		
	TCB-FCY100DE	MMD-AP0724/0964H-E		
Drain pump kit	TCB-DP31DE	MMD-AP0184H-E to 0484H-E	Stand-up 330 or less (from bottom face of ceiling)	
	TCB-DP32DE	MMD-AP0724/0964H-E		



11-2-7. Slim Duct Type

Slim Duct Type

Indoor Unit

MMD-AP0074SPH-E
MMD-AP0094SPH-E
MMD-AP0124SPH-E
MMD-AP0154SPH-E
MMD-AP0184SPH-E



Contents

1. Specifications
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3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. Fan characteristics
8. Sound characteristics (NC-Curve)
9. Fresh air intake (Design guide)
10. Accessories



1. Specification

50Hz

Model name		MMD-	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E	AP0154SPH-E	AP0184SPH-E
Cooling/Heating capacity (Note 1) (kW)			2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3
Electrical characteristics	Power supply		1 phase 50Hz 230V (220-240V)				
	Running current (A)		0.29	0.29	0.31	0.32	0.39
	Power consumption (kW)		0.039	0.039	0.043	0.045	0.054
	Starting current (A)		0.51	0.51	0.54	0.56	0.68
Appearance			Zinc hot dipping steel plate				
Dimension	Height (mm)		210				
	Width (mm)		845				
	Depth (mm)		645				
Total weight (kg)			22	22	22	23	23
Heat exchanger			Finned tube				
Soundproof / Heat-insulating material			Polyethylene foam + Polyurethane foam				
Fan			Centrifugal fan (Sirocco fan)				
Standard air flow	High (m³/h)		540		600	690	780
	(Mid./Low) (m³/h)		470/400		520/450	600/520	680/580
Motor output (W)			60				
External static pressure (Pa)			6 (Factory setting) -16-31-46 4steps		5 (Factory setting) -15-30-45 4steps		4 (Factory setting) -14-29-44 4steps
	Air filter pressure loss (Pa)		4		5		6
Controller			Remote controller				
Air filter			Standard filter supplied (Long life filter)				
Connecting pipe	Gas pipe (mm)		Φ9.5			Φ12.7	
	Liquid pipe (mm)		Φ6.4				
	Drain pipe (Nominal dia.mm)		25 (Polyvinyl chloride tube : External dia.32 Internal dia.25)				
Sound pressure level (Note 2) High/Mid./Low	Under air inlet (dB(A))		36/33/30		38/35/32	39/36/33	40/38/36
	Back air inlet (dB(A))		28/26/24		29/27/25	32/30/28	33/31/29

Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

MMD-AP0074SPH-E, AP0094SPH-E, AP0124SPH-E, AP0154SPH-E, AP0184SPH-E

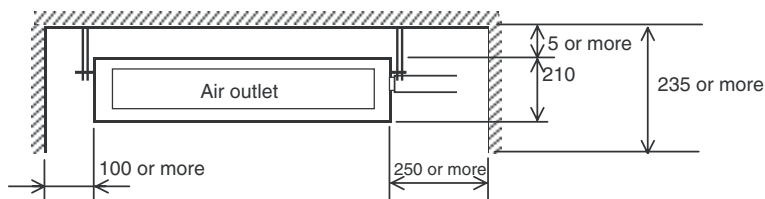


Technical drawing of the front view of the 1200x600x400 mm cabinet. The drawing shows a symmetrical layout with a central section and side sections. Key dimensions include a total width of 805 mm, a total depth of 266.5 mm, and a total height of 45.3 mm. The front panel features a central section with two large doors and a side section with a single door. The mounting holes are specified as n=24 M5 (Ø4.2 mounting hole).

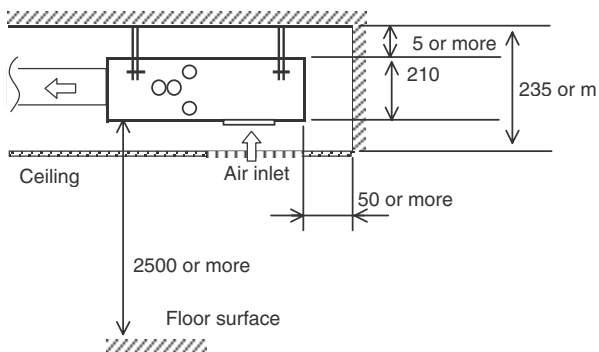
Technical drawing of the front view of the device. The drawing shows a rectangular unit with a total width of 805 mm and a total height of 188.6 mm. The mounting holes are spaced at 100 mm intervals along the bottom edge, with a total length of 825 mm for the hole pattern. The mounting holes are labeled as n=22 M5 (Ø4.2 mounting hole). The drawing also shows internal components like the motor and gears.

Installation space

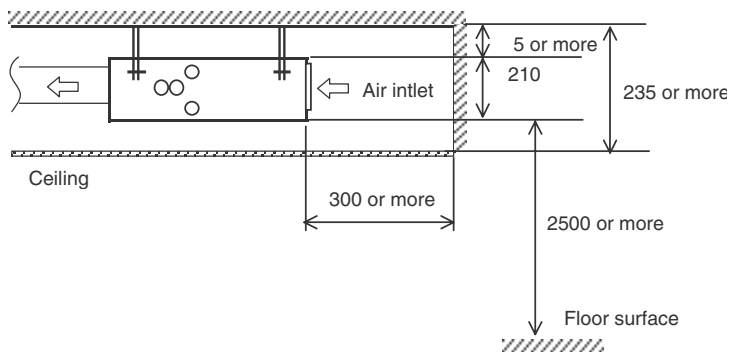
(length:mm)



Under air inlet

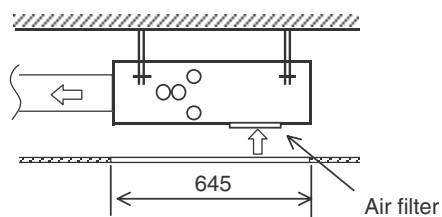
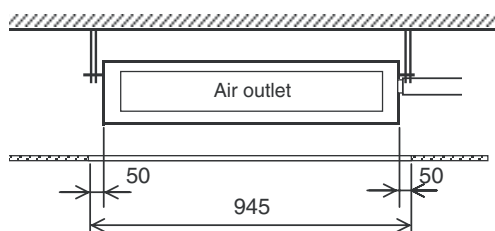


Rear air inlet

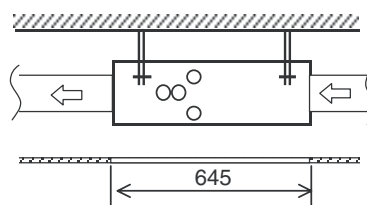
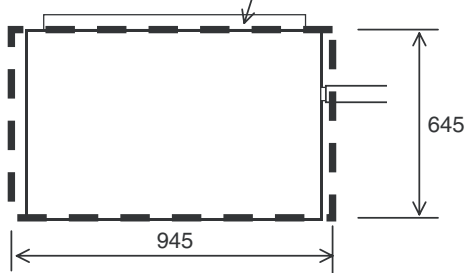


Service space

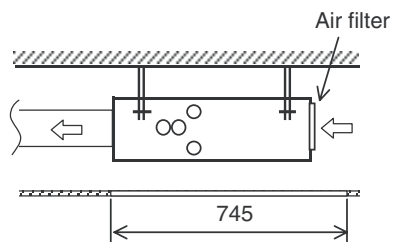
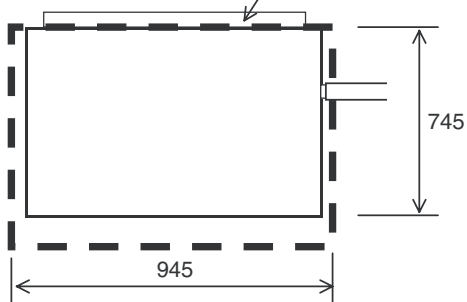
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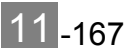
Service door (Ceiling opening)



Service door (Ceiling opening)

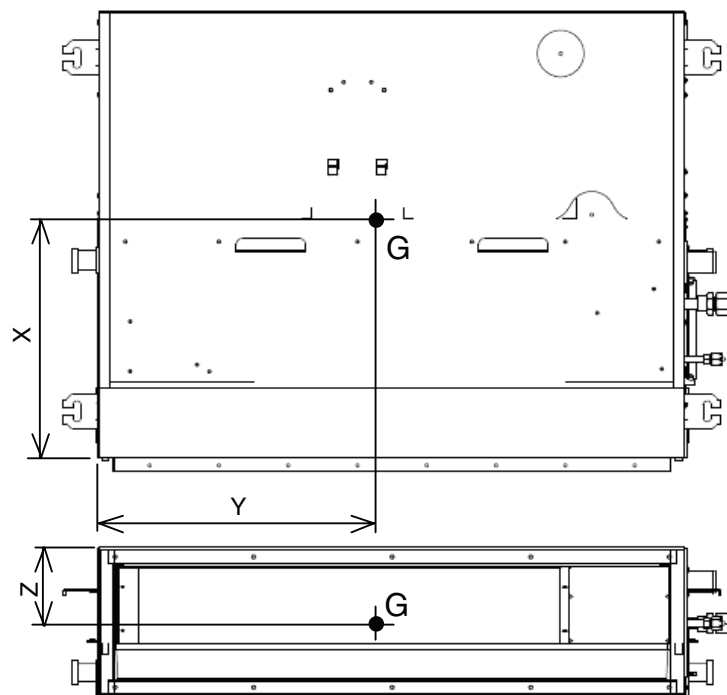


MMD-AP0074SPH-E, AP0094SPH-E, AP0124SPH-E, AP0154SPH-E, AP0184SPH-E



4. Center of Gravity

Model name	X (mm)	Y (mm)	Z (mm)	Total weight(kg)
MMD-AP0074SPH-E	315	470	110	22
MMD-AP0094SPH-E				
MMD-AP0124SPH-E				
MMD-AP0154SPH-E	320	460	110	23
MMD-AP0184SPH-E				



5. Electrical characteristics

Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
		Min	Max	kW	FLA	MCA	MOCP
MMD-AP0074SPH-E	230-1-50	198	264	0.060	0.35	0.44	15
MMD-AP0094SPH-E	230-1-50	198	264	0.060	0.35	0.44	15
MMD-AP0124SPH-E	230-1-50	198	264	0.060	0.37	0.47	15
MMD-AP0154SPH-E	230-1-50	198	264	0.060	0.38	0.48	15
MMD-AP0184SPH-E	230-1-50	198	264	0.060	0.47	0.59	15

6. Sensible capacity table

■ Slim Duct Type (MMD-AP***4SPH-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

Unit size	Outdoor air temp. CDB	Indoor air temp.													
		14.0CWB		16.0CWB		18.0CWB		19.0CWB		20.0CWB		22.0CWB		24.0CWB	
		20CDB		23CDB		26CDB		27CDB		28CDB		30CDB		32CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	12.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	14.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	16.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	18.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	20.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	21.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	23.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	25.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	27.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	29.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	31.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	33.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	35.0	1.8	1.6	2.0	1.7	2.1	1.8	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
	37.0	1.7	1.5	1.9	1.6	2.1	1.7	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7
	39.0	1.7	1.5	1.9	1.6	2.0	1.7	2.1	1.7	2.1	1.7	2.3	1.7	2.4	1.6
009	10.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	12.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	14.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	16.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	18.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	20.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	21.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	23.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	25.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	27.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	29.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	31.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	33.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	35.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	37.0	2.2	1.8	2.5	1.9	2.6	2.0	2.7	2.0	2.8	2.0	3.0	2.0	3.1	2.0
	39.0	2.2	1.8	2.4	1.9	2.6	2.0	2.6	2.0	2.7	2.0	2.9	2.0	3.0	1.9
012	10.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	12.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	14.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	16.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	18.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	20.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	21.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	23.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	25.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	27.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	29.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	31.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	33.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	35.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	37.0	2.9	2.1	3.2	2.3	3.4	2.4	3.5	2.4	3.6	2.4	3.8	2.4	4.0	2.3
	39.0	2.8	2.1	3.1	2.2	3.3	2.4	3.4	2.4	3.5	2.4	3.7	2.3	3.9	2.3

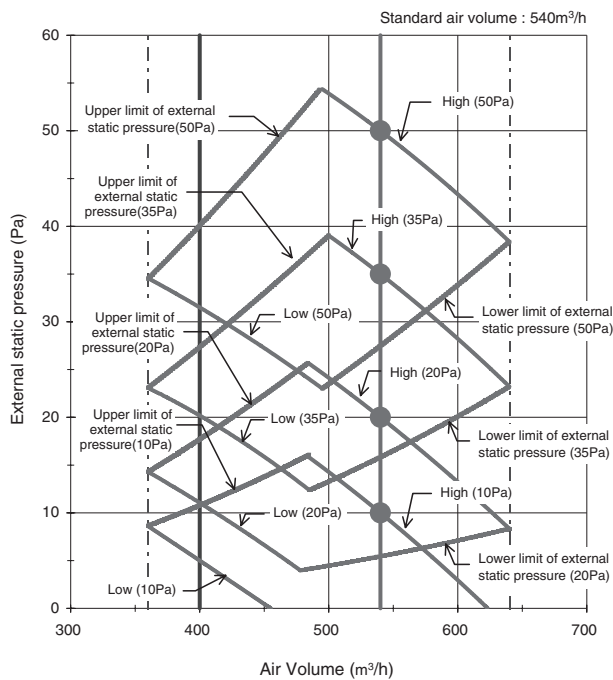
■ Slim Duct Type (MMD-AP***4SPH-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

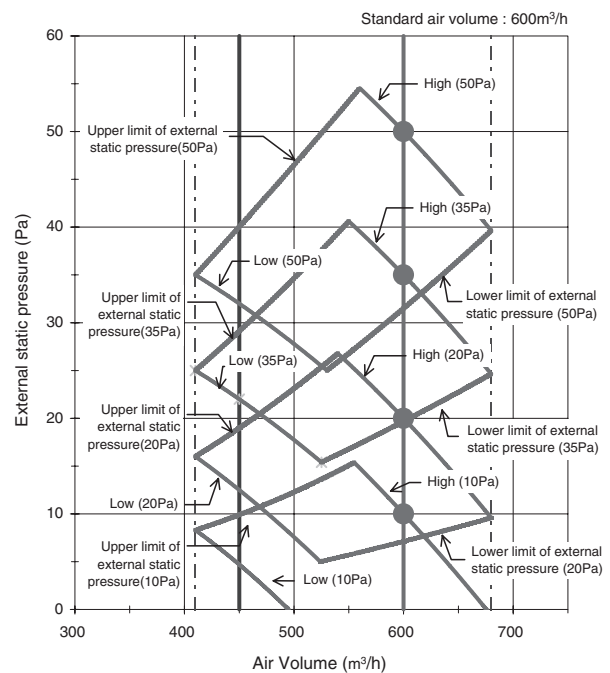
Unit size	Outdoor air temp. CDB	Indoor air temp.													
		14.0CWB		16.0CWB		18.0CWB		19.0CWB		20.0CWB		22.0CWB		24.0CWB	
		20CDB		23CDB		26CDB		27CDB		28CDB		30CDB		32CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	10.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	12.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	14.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	16.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	18.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	20.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	21.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	23.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	25.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	27.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	29.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	31.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	33.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	35.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	37.0	3.6	2.7	4.0	2.9	4.2	3.1	4.4	3.1	4.5	3.1	4.7	3.1	5.0	3.0
	39.0	3.5	2.7	3.8	2.8	4.1	3.0	4.2	3.0	4.4	3.0	4.6	3.0	4.8	2.9
018	10.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	12.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	14.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	16.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	18.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	20.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	21.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	23.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	25.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	27.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	29.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	31.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	33.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	35.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	37.0	4.5	3.3	4.9	3.6	5.3	3.8	5.4	3.8	5.6	3.8	5.9	3.7	6.2	3.7
	39.0	4.3	3.3	4.8	3.5	5.1	3.7	5.3	3.7	5.4	3.7	5.7	3.6	6.0	3.6

7. Fan characteristics

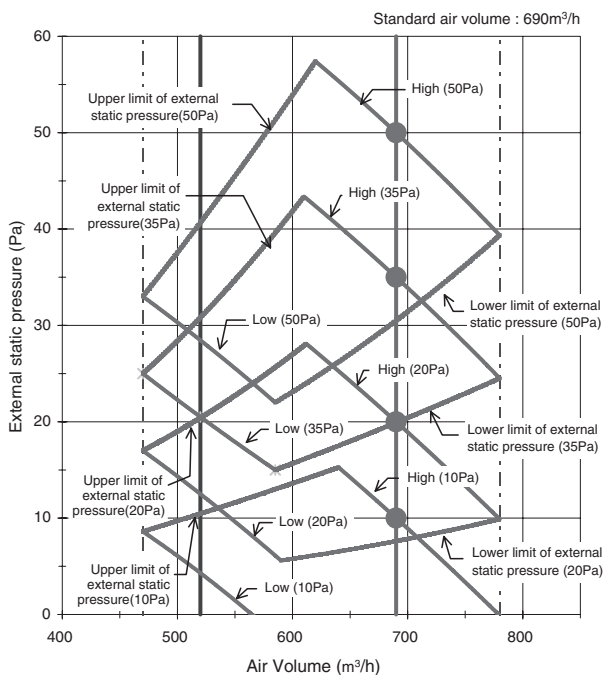
MMD-AP0074SPH-E
MMD-AP0094SPH-E



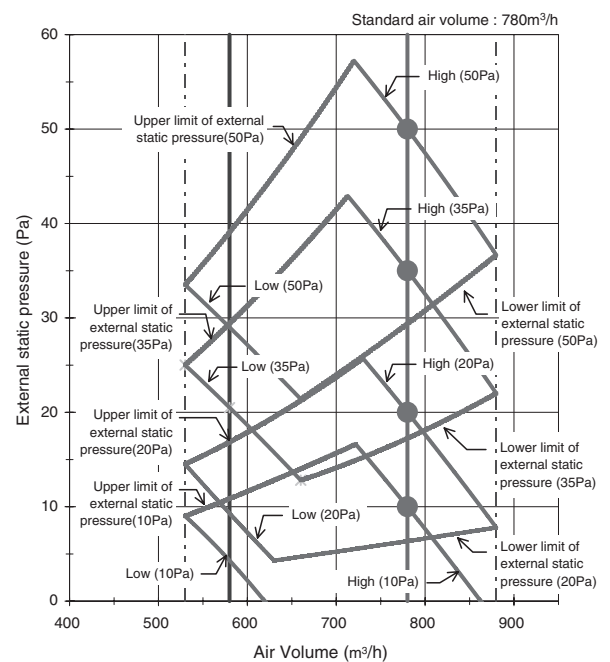
MMD-AP0124SPH-E



MMD-AP0154SPH-E



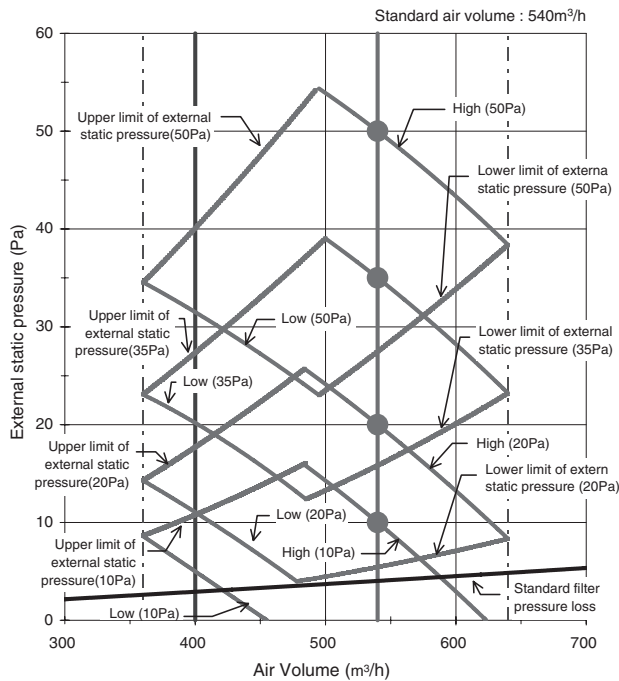
MMD-AP0184SPH-E



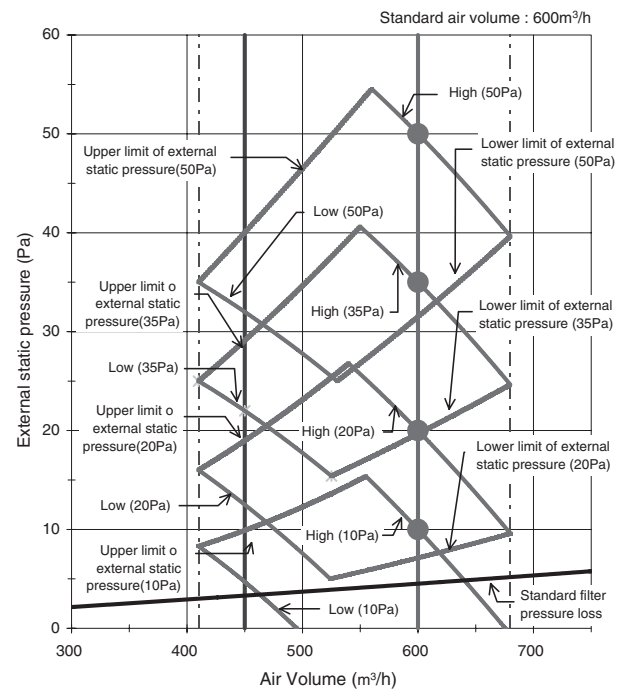
(Filter attached)

MMD-AP0074SPH-E

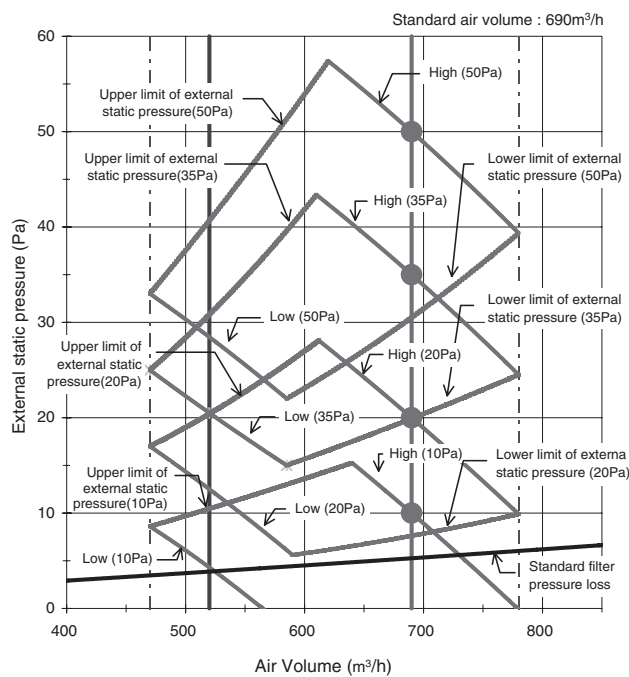
MMD-AP0094SPH-E



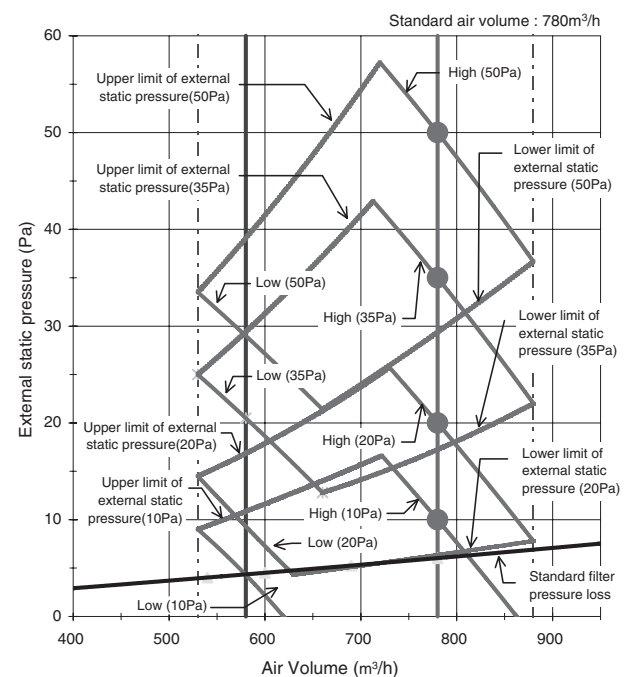
MMD-AP0124SPH-E



MMD-AP0154SPH-E



MMD-AP0184SPH-E



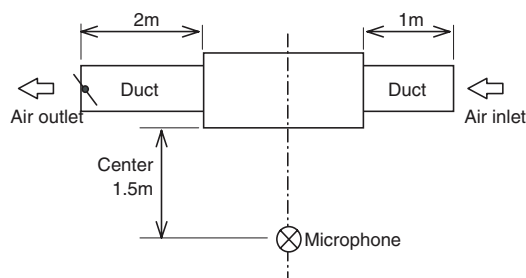
8. Sound Characteristics (NC Curve)

MMD-AP0074SPH-E

MMD-AP0094SPH-E

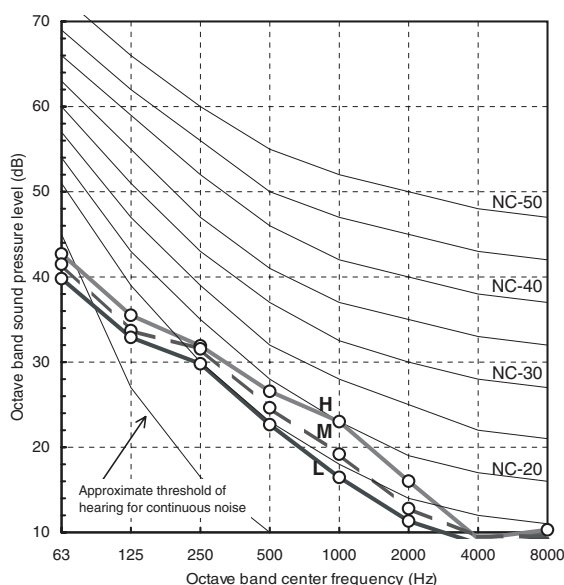
Measuring location

Rear air intake



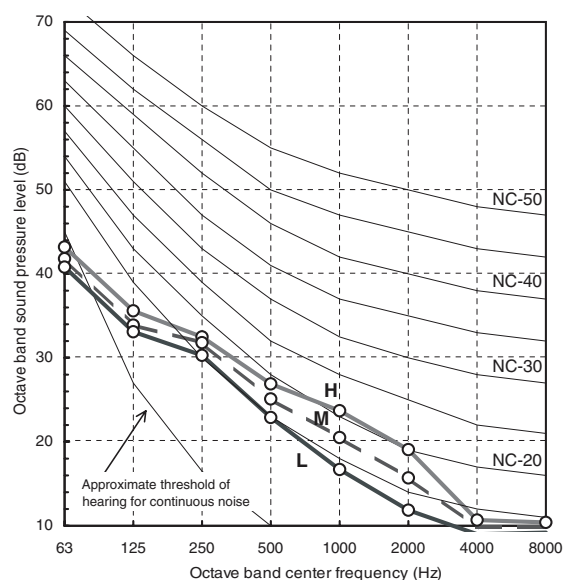
External static pressure 10Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	28	26	24



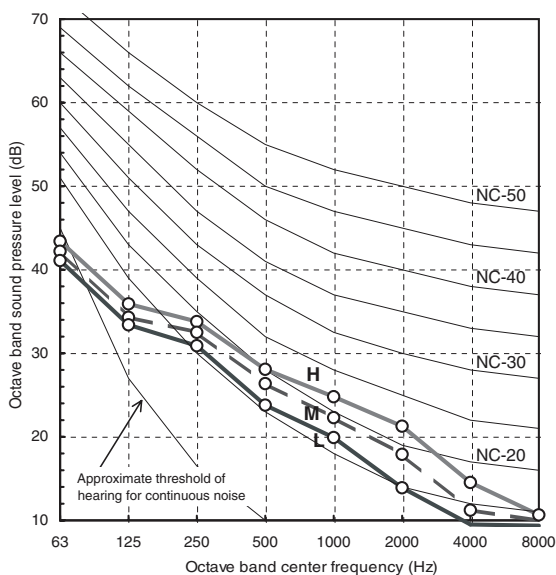
External static pressure 20Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	29	27	25



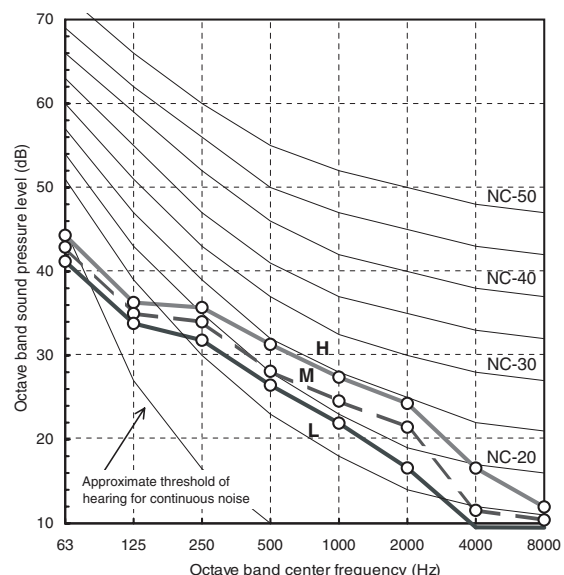
External static pressure 35Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	30	28	26



External static pressure 50Pa

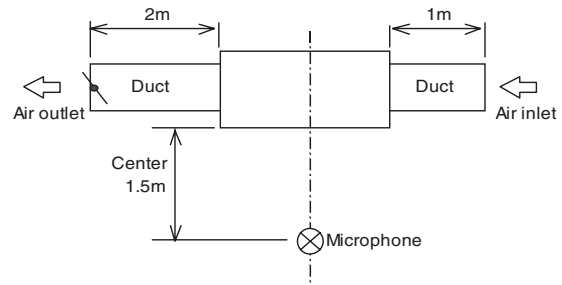
Fan tap	H	M	L
Sound pressure level (dB(A))	32	29	27



MMD-AP0124SPH-E

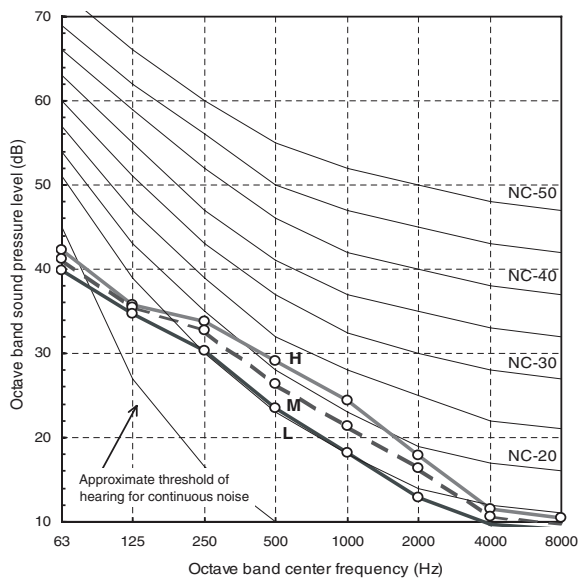
Measuring location

Rear air intake



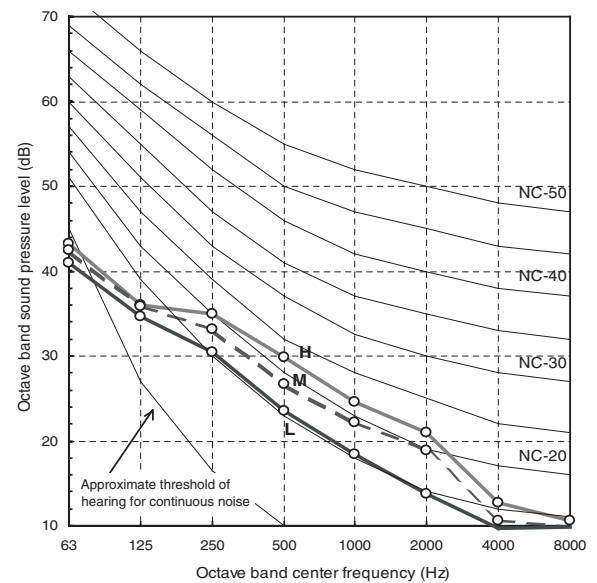
External static pressure 10Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	29	27	25



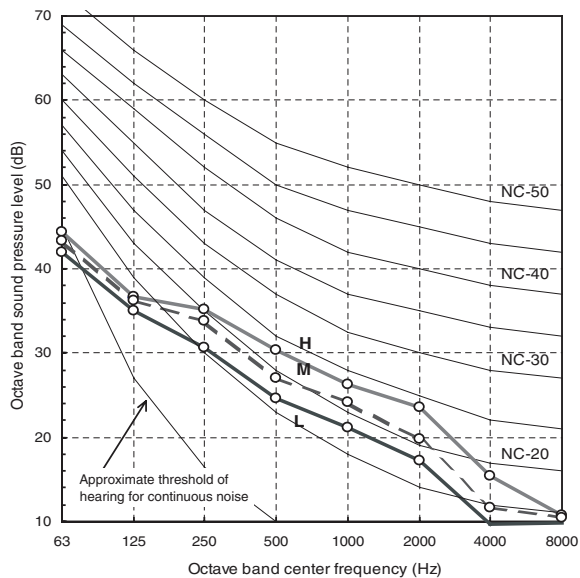
External static pressure 20Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	30	28	26



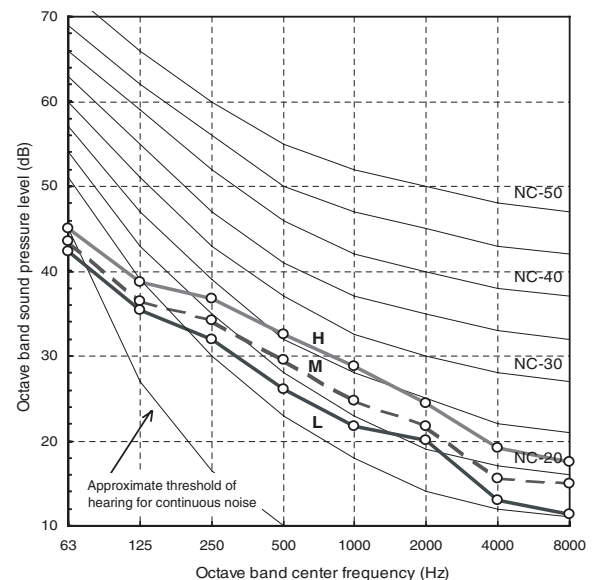
External static pressure 35Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	31	29	27



External static pressure 50Pa

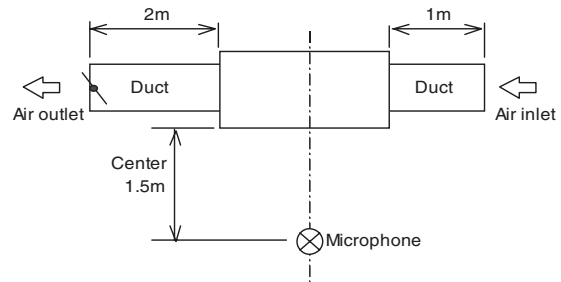
Fan tap	H	M	L
Sound pressure level (dB(A))	32	30	28



MMD-AP0154SPH-E

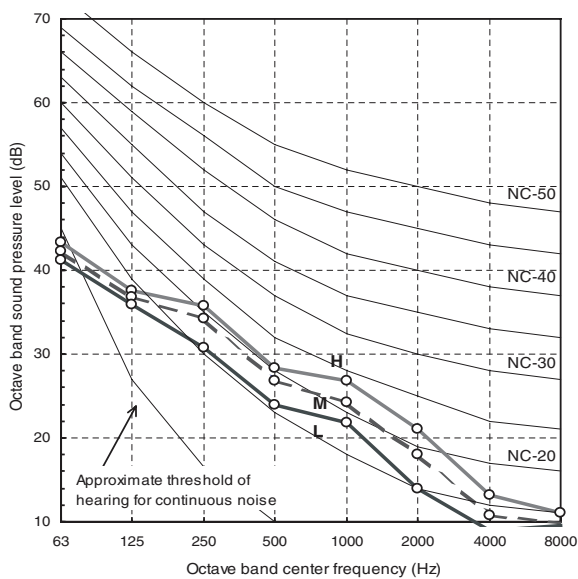
Measuring location

Rear air intake



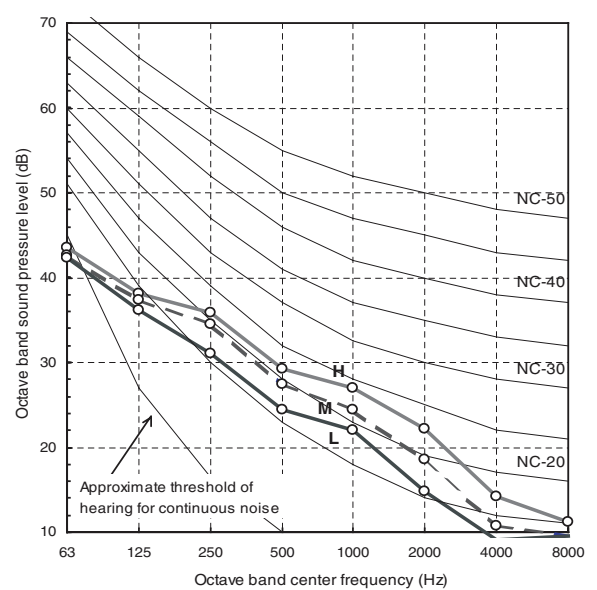
External static pressure 10Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	32	30	28



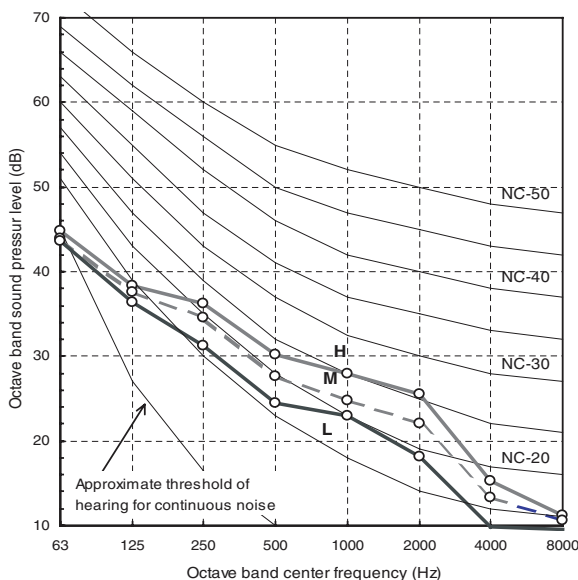
External static pressure 20Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	33	31	29



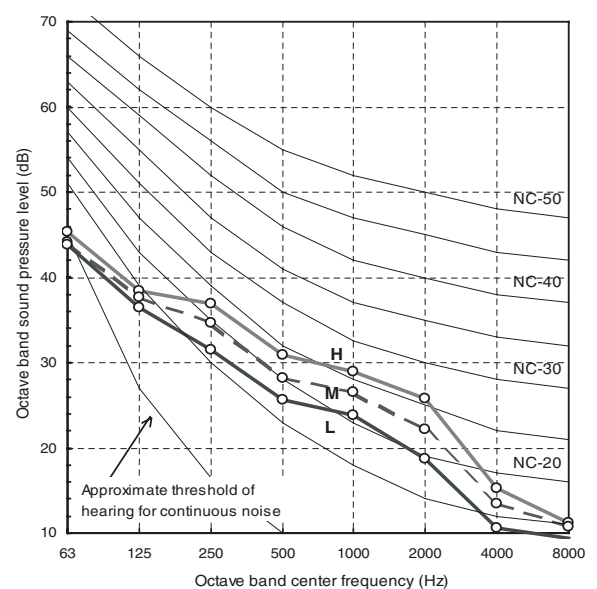
External static pressure 35Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	34	32	30



External static pressure 50Pa

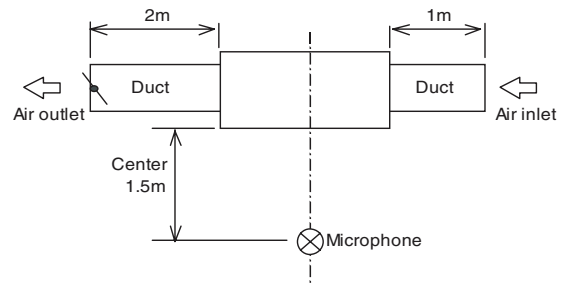
Fan tap	H	M	L
Sound pressure level (dB(A))	35	33	31



MMD-AP0184SPH-E

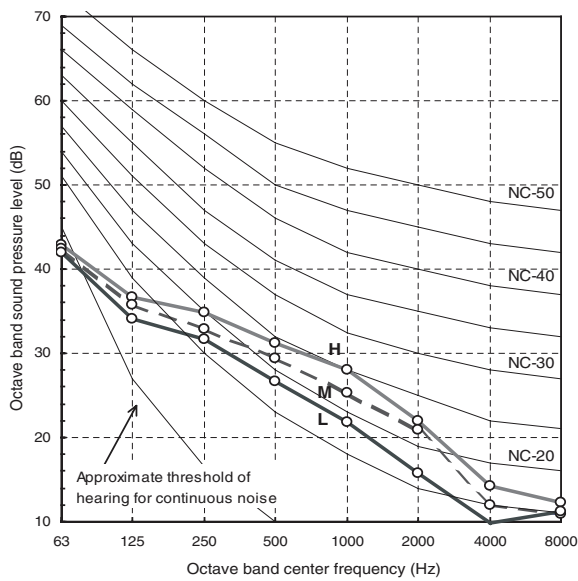
Measuring location

Rear air intake



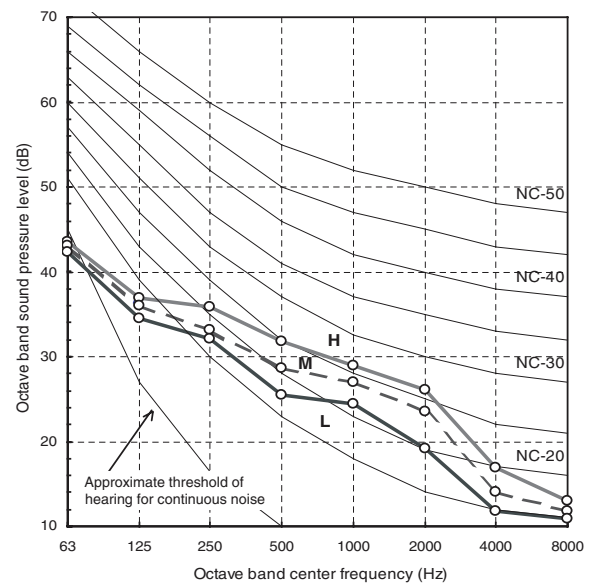
External static pressure 10Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	33	31	29



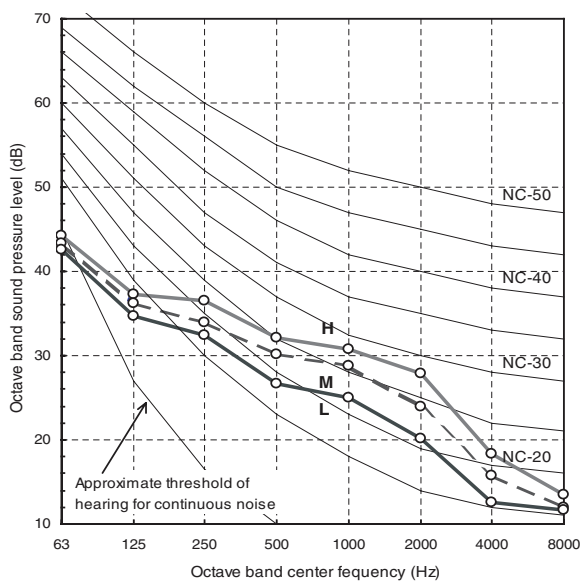
External static pressure 20Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	34	32	30



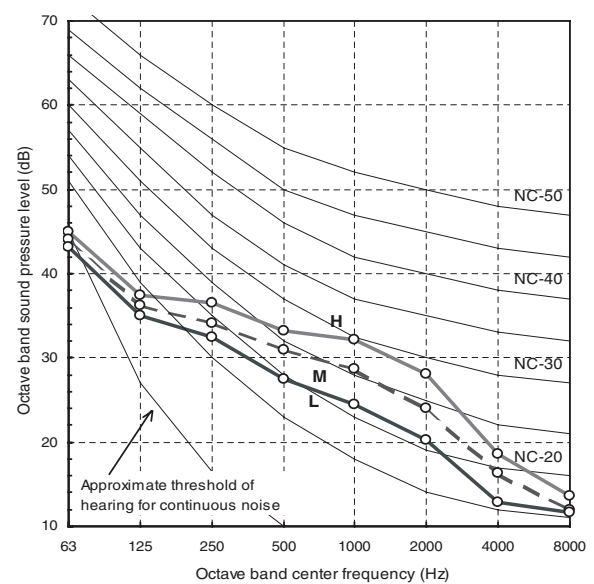
External static pressure 35Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	35	33	31



External static pressure 50Pa

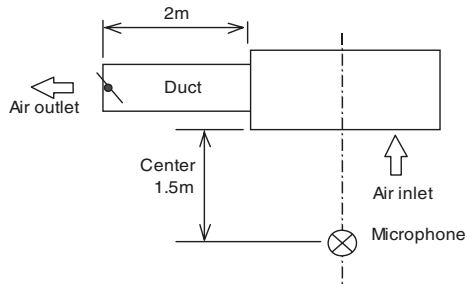
Fan tap	H	M	L
Sound pressure level (dB(A))	36	34	32



MMD-AP0074SPH-E MMD-AP0094SPH-E

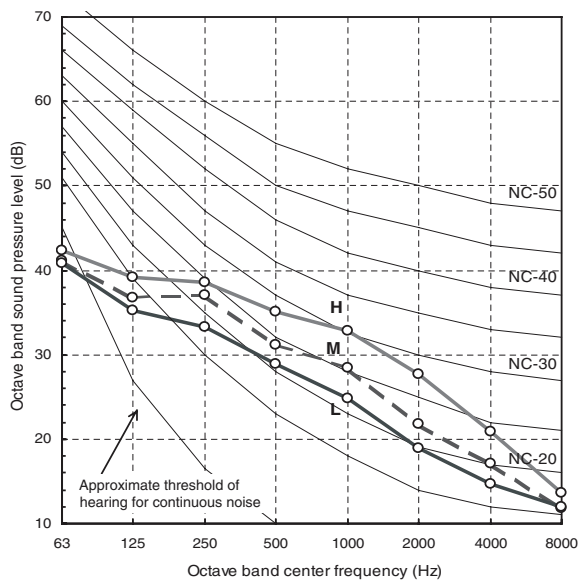
Measuring location

Under air intake



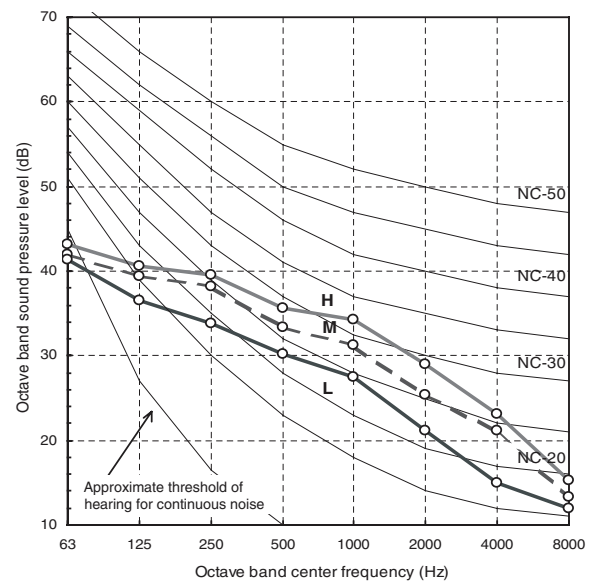
External static pressure 10Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	36	33	30



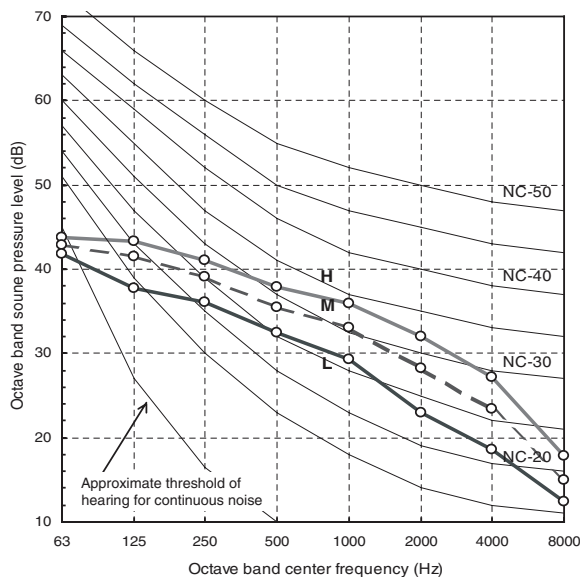
External static pressure 20Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	37	34	31



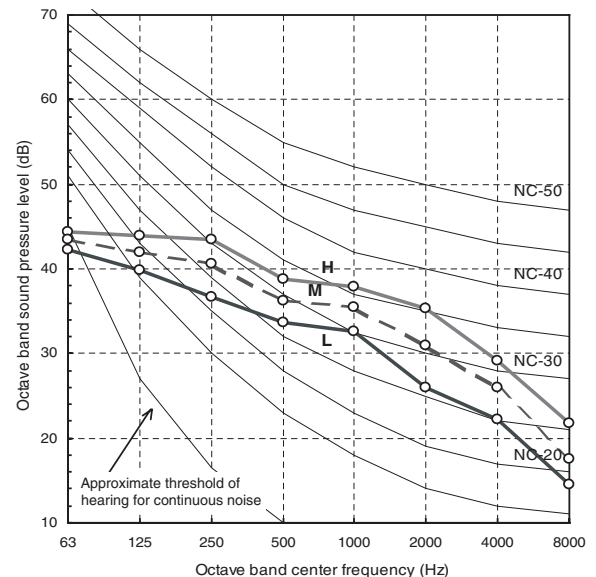
External static pressure 35Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	33



External static pressure 50Pa

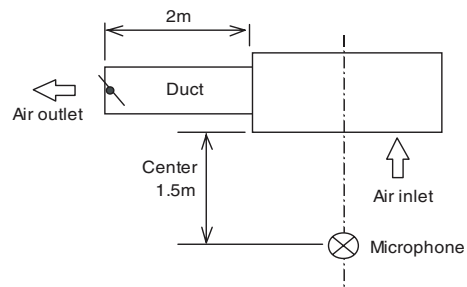
Fan tap	H	M	L
Sound pressure level (dB(A))	41	38	35



MMD-AP0124SPH-E

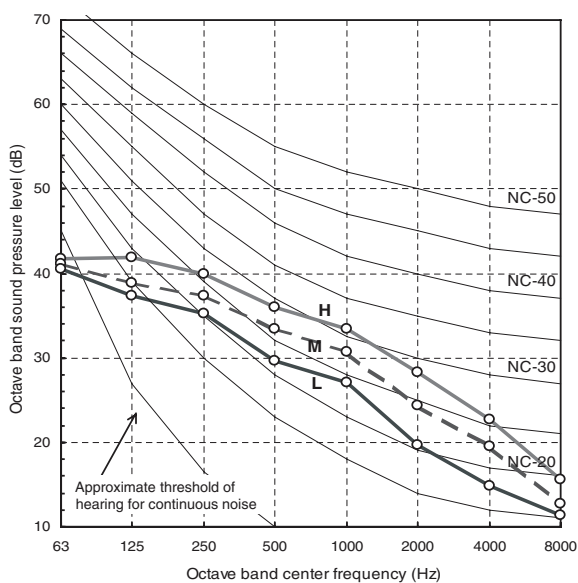
Measuring location

Under air intake



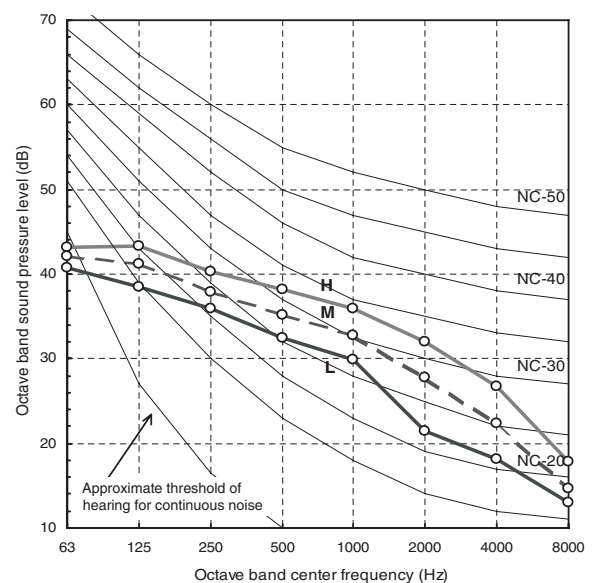
External static pressure 10Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	38	35	32



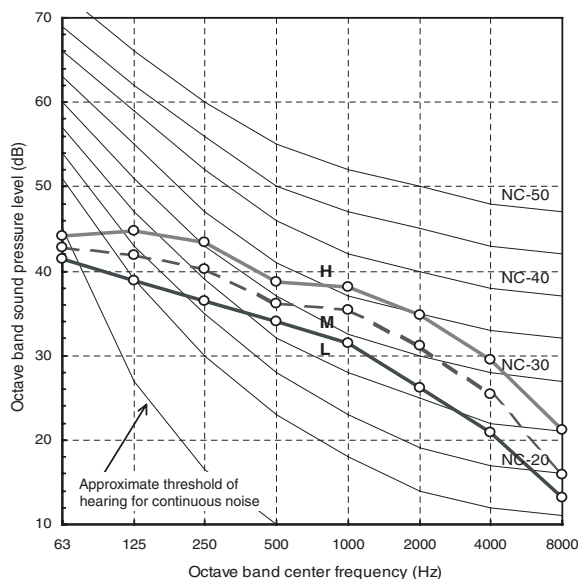
External static pressure 20Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	33



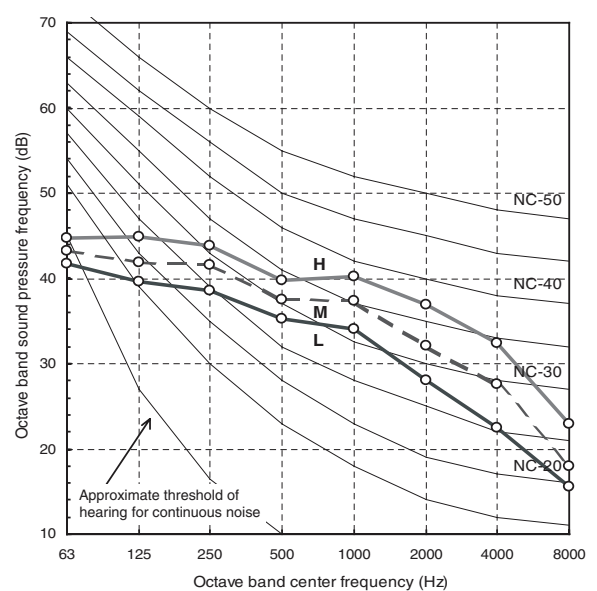
External static pressure 35Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	41	38	35



External static pressure 50Pa

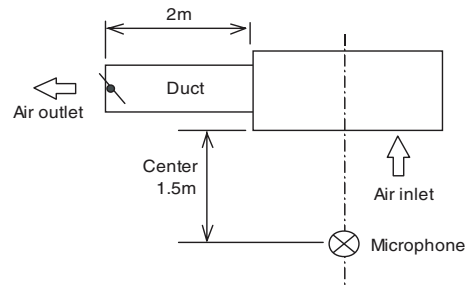
Fan tap	H	M	L
Sound pressure level (dB(A))	43	40	37



MMD-AP0154SPH-E

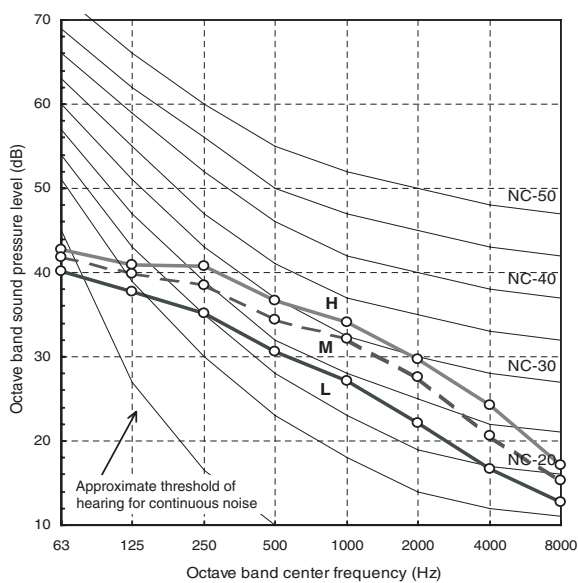
Measuring location

Under air intake



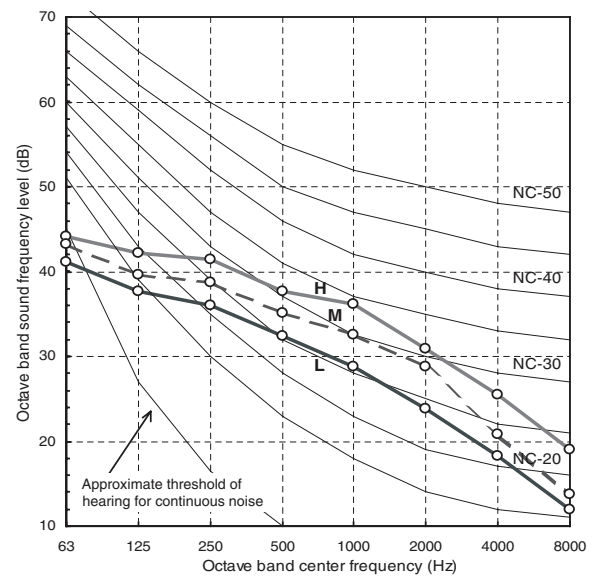
External static pressure 10Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	33



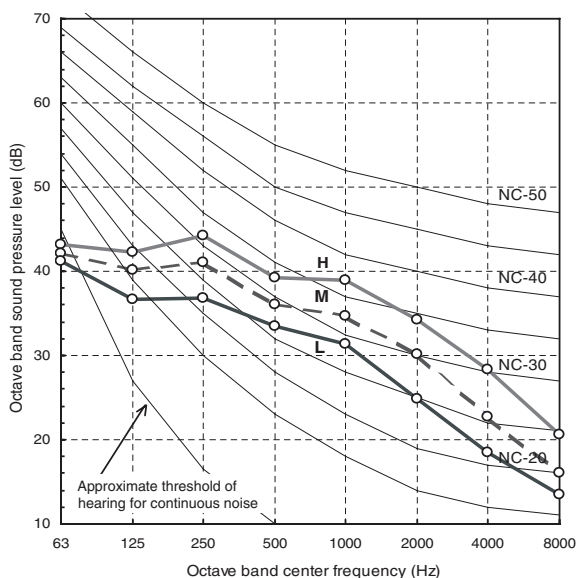
External static pressure 20Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	40	37	34



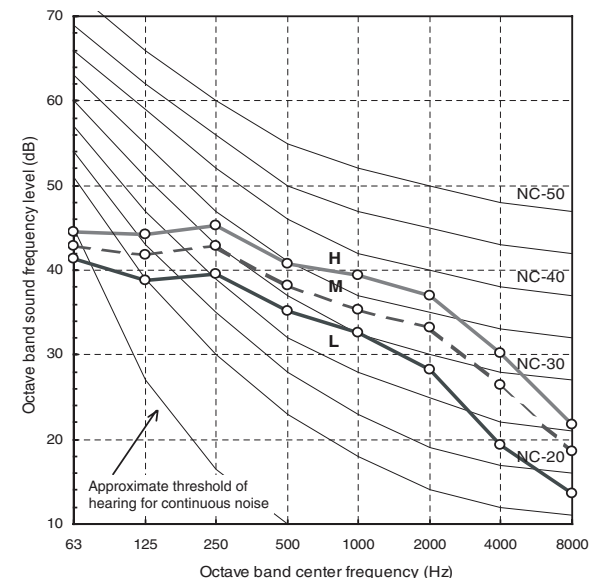
External static pressure 35Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	41	38	35



External static pressure 50Pa

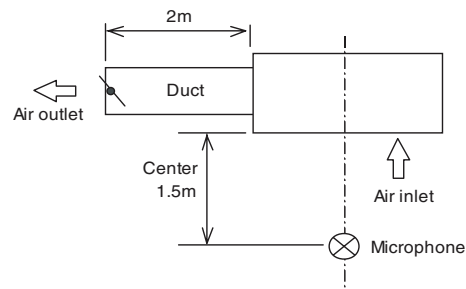
Fan tap	H	M	L
Sound pressure level (dB(A))	43	40	37



MMD-AP0184SPH-E

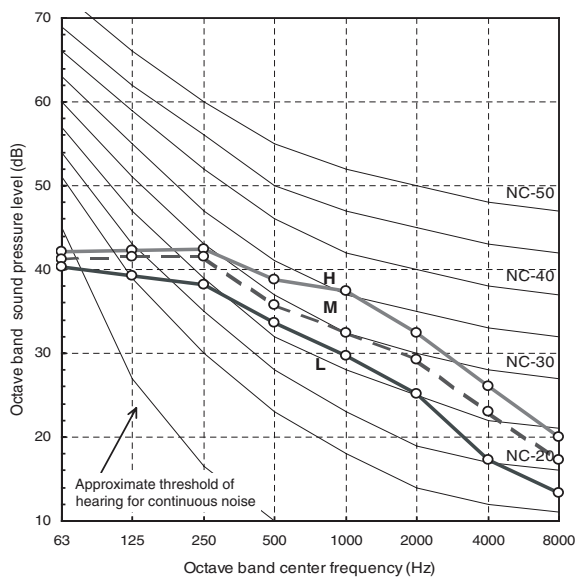
Measuring location

Under air intake



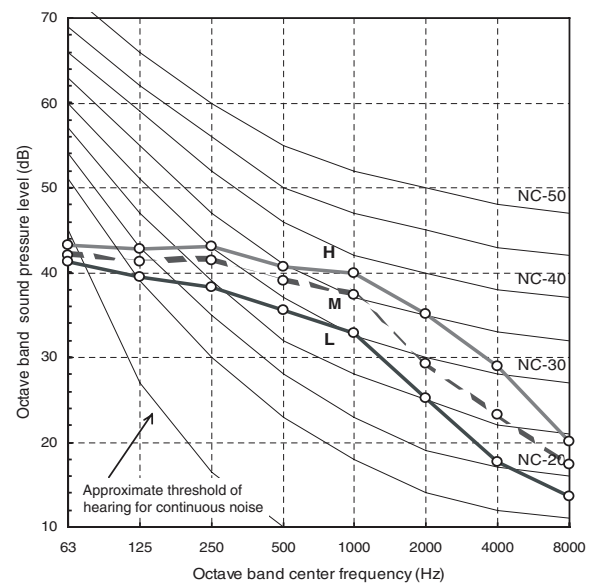
External static pressure 10Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	40	38	36



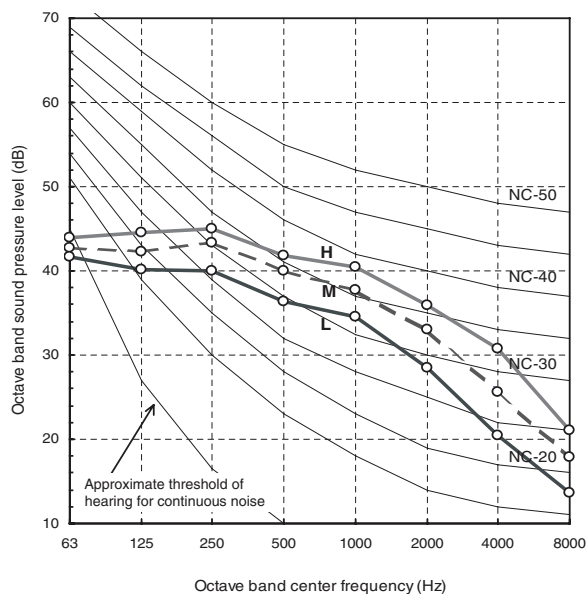
External static pressure 20Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	42	40	37



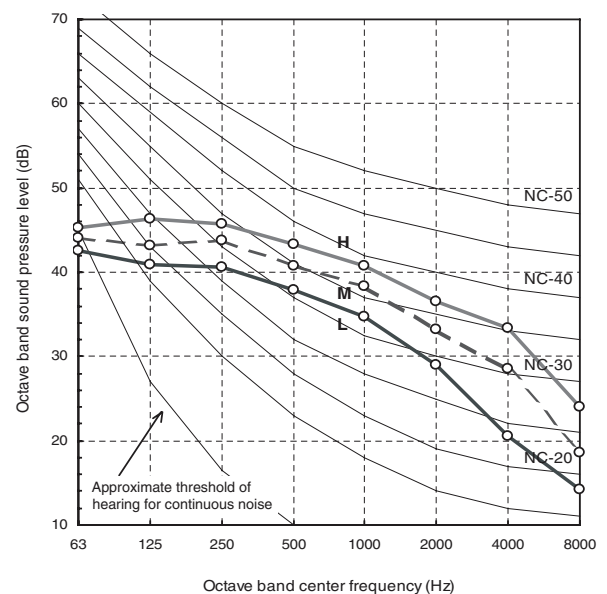
External static pressure 35Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	43	41	38



External static pressure 50Pa

Fan tap	H	M	L
Sound pressure level (dB(A))	44	42	39



9. Fresh air intake (Design guide)

■ Slim Duct Type

MMD-AP0074SPH-E, AP0094SPH-E, AP0124SPH-E

Caution

The fresh air shall be conditioned by heat reclaim ventilator or similar.

Ensure the fresh air volume is determined so that mixed suction air and fresh air maintain the operating temperature.

*1. Recommended conditioned air temperature is 12 °C to 30 °C.

However, make a fresh air volume within 20% of standard.

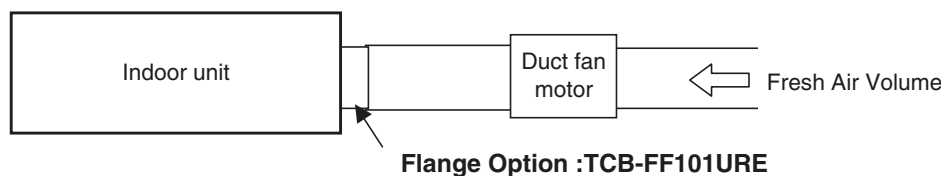
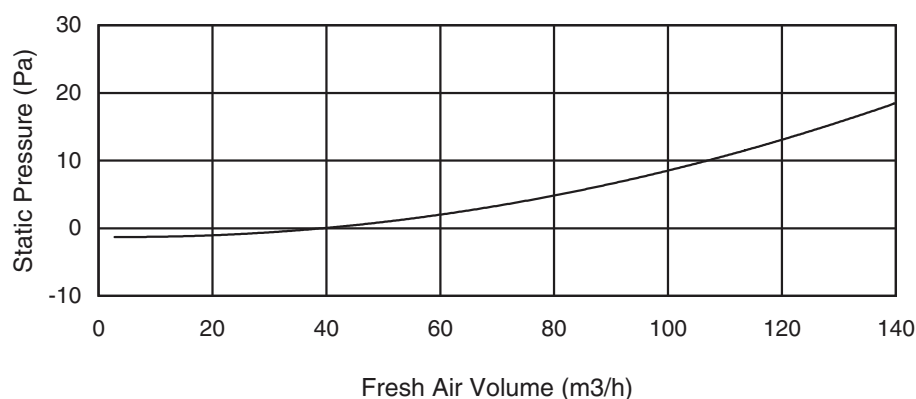
Model name	MMD-	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E
Standard air flow	(m ³ /h)	540	540	600

Install a air filter within the fresh air duct.

(Fresh air does not pass through the filter of Indoor unit.)

Insulate the fresh air duct.

Electrically connect the fan of the Heat exchanger unit and the Indoor unit to a single isolator.



Inter - lock circuit

Connect the driving relay of the duct fan (DC 12V) between 1 and 6 on the indoor P.C. board.

(Rated current of the relay for duct fan should be up to 75mA.)

After installation, carry out a trial operation to check that the duct fan of the indoor unit start/stop simultaneously.

(Carry out the trial operation following the installation manual of the indoor unit.)

Slim Duct Type

MMD-AP0154SPH-E, AP0184SPH-E

Caution

The fresh air shall be conditioned by heat reclaim ventilator or similar.

Ensure the fresh air volume is determined so that mixed suction air and fresh air maintain the operating temperature.

*1. Recommended conditioned air temperature is 12 °C to 30 °C.

However, Make a fresh air volume within 20% of standard.

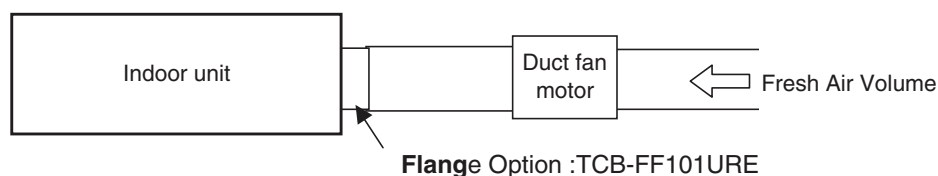
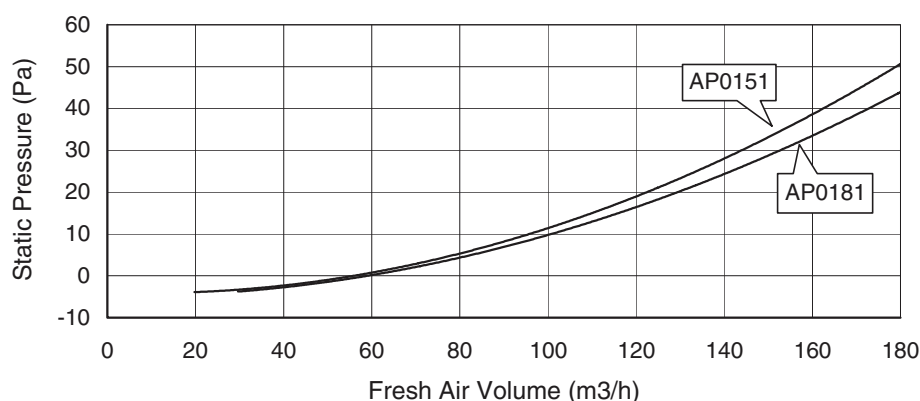
Model name	MMD-	AP0154SPH-E	AP0184SPH-E
Standard air flow	(m ³ /h)	690	780

Install a air filter within the fresh air duct.

(Fresh air does not pass through the filter of Indoor unit.)

Insulate the fresh air duct.

Electrically connect the fan of the Heat exchanger unit and the Indoor unit to a single isolator.



Inter - lock circuit

Connect the driving relay of the duct fan (DC 12V) between 1 and 6 on the indoor P.C. board.

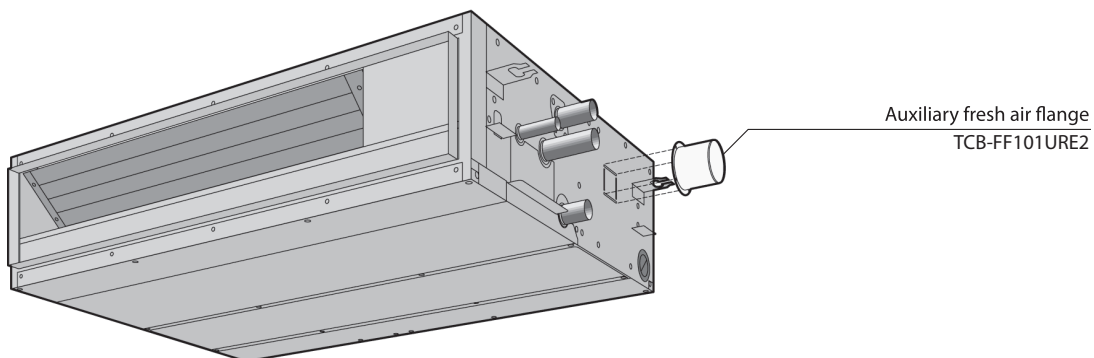
(Rated current of the relay for duct fan should be up to 75mA.)

After installation, carry out a trial operation to check that the duct fan of the indoor unit start/stop simultaneously.

(Carry out the trial operation following the installation manual of the indoor unit.)

10. Accessories

Parts name	Model name	Applied model	Note	Remarks
Auxiliary fresh air flange	TCB-FF101URE2	MMD-AP***4SPH-E	For fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	



11-2-8. Ceiling Type

Ceiling Type

MMC-AP0154H-E / MMC-AP0184H-E
MMC-AP0244H-E / MMC-AP0274H-E
MMC-AP0364H-E / MMC-AP0484H-E



Contents

1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. Air throw distance chart
8. Sound characteristics (NC-Curve)
9. Accessories



1. Specifications

Ceiling Type

Model name		MMC-	AP0154H-E	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E	
Cooling/Heating capacity (Note 1)			(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 — 240V) (Separate power supply for indoor units is required.)						
	Running current (A)		0.29	0.32	0.42		0.78	0.84	
	Power consumption (kW)		0.033	0.038	0.050		0.091	0.110	
	Starting current (A)		0.43	0.48	0.62		1.17	1.25	
Appearance			White (Munsell 10Y 9.3/0.4)						
Outer dimension	Height x Width x Depth (mm)		210 x 910 x 680		210 x 1,180 x 680		210 x 1,595 x 680		
Total weight (kg)			22		26		34		
Heat exchanger			Finned tube						
Soundproof/Heating-insulating material			Non-flammable insulation						
Fan unit	Fan		Centrifugal fan						
	Standard air flow (High/Mid./Low) (m³/h)		720/600/540	780/660/540	1,110/900/840		1,650/1,380/1,200	1,800/1,560/1,320	
	Motor output (W)		30		40		80		
Controller			Remote controller						
Room thermostat			Attached						
Air filter			Standard filter (Long life filter)						
Connecting pipe	Gas side (mm)		ø 12.7		ø 15.9				
	Liquid side (mm)		ø 6.4		ø 9.5				
	Drain port (Nominal dia. mm)		20 (Polyvinyl chloride tube)						
Sound pressure level(Note 2) (High/Mid./Low) (dB(A))			35/32/30	36/33/30	38/36/33		41/38/35	43/40/37	

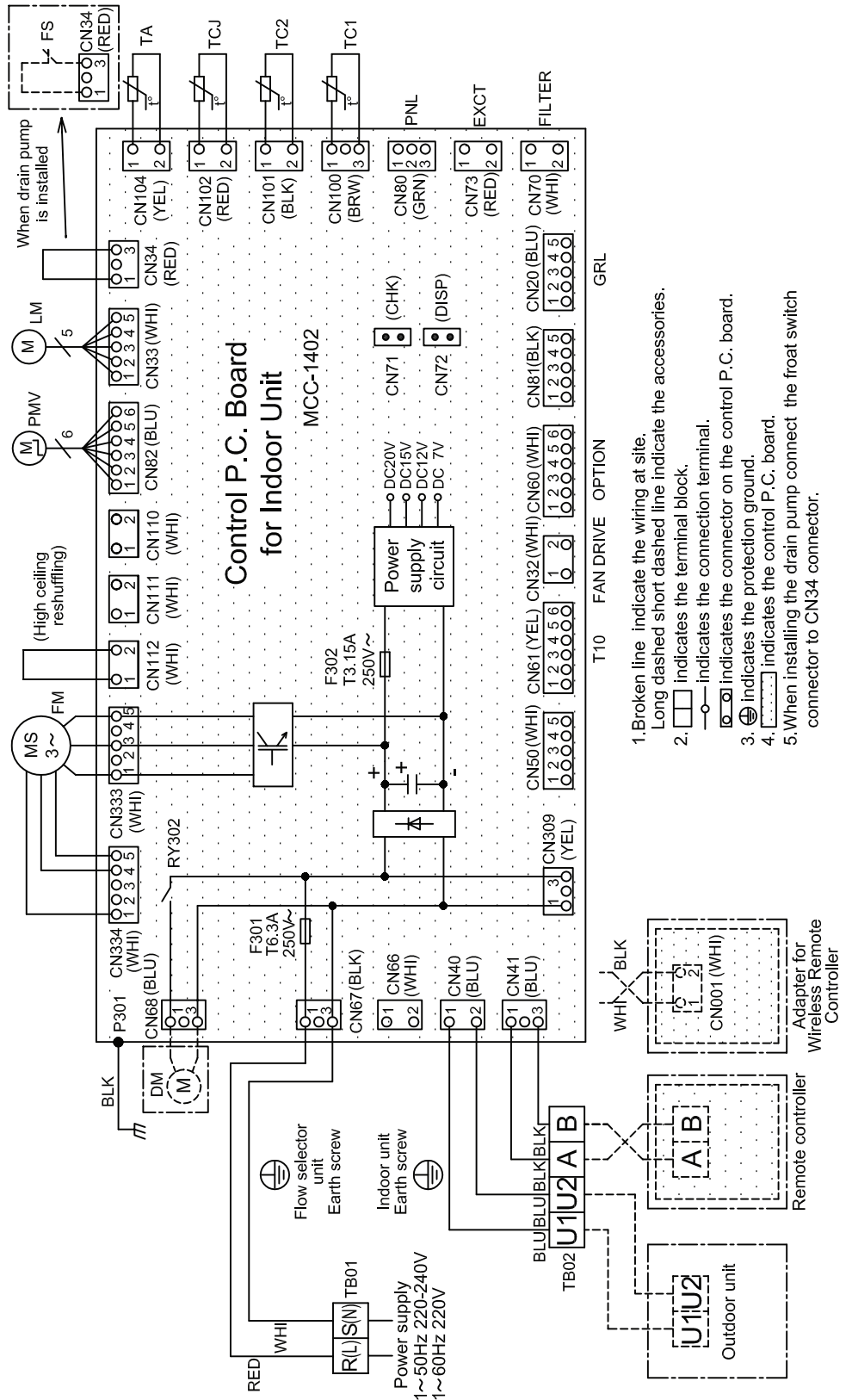
Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

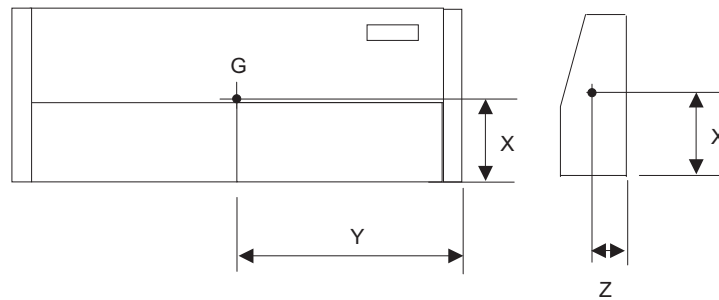
3. Wiring diagram

MMC-AP0154H-E, AP0184H-E, AP0244H-E, AP0274H-E, AP0364H-E, AP0484H-E



4. Center of gravity

Model name	X (mm)	Y (mm)	Z (mm)	Total weight(kg)
MMC-AP0154H-E	320	460	90	22
MMC-AP0184H-E				
MMC-AP0244H-E	320	570	90	26
MMC-AP0274H-E				
MMC-AP0364H-E	320	770	90	34
MMC-AP0484H-E				



5. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
Ceiling Type	MMC-AP0154H-E	230-1-50	198	264	0.030	0.33	0.41	15
	MMC-AP0184H-E	230-1-50	198	264	0.030	0.37	0.46	15
	MMC-AP0244H-E	230-1-50	198	264	0.040	0.48	0.60	15
	MMC-AP0274H-E	230-1-50	198	264	0.040	0.48	0.60	15
	MMC-AP0364H-E	230-1-50	198	264	0.080	0.90	1.13	15
	MMC-AP0484H-E	230-1-50	198	264	0.080	0.96	1.20	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

6. Sensible capacity table

Ceiling Type (MMC-AP***4H-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	10.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	12.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	14.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	16.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	18.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	20.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	21.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	23.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	25.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	27.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	29.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	31.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	33.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	35.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
018	10.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	12.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	14.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	16.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	18.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	20.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	21.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	23.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	25.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	27.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	29.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	31.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	33.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	35.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
024	10.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	12.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	14.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	16.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	18.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	20.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	21.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	23.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	25.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	27.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	29.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	31.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	33.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
	35.0	5.8	4.5	6.4	4.8	6.9	5.1	7.1	5.1	7.3	5.1	7.7	5.1	8.1	4.9
027	10.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	12.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	14.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	16.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	18.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	20.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	21.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	23.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	25.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	27.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	29.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	31.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	33.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	35.0	6.6	5.0	7.3	5.3	7.8	5.6	8.0	5.6	8.2	5.6	8.7	5.5	9.1	5.4
	37.0	6.4	4.8	7.0	5.1	7.5	5.4	7.7	5.4	8.0	5.4	8.4	5.4	8.8	5.2
	39.0	6.2	4.7	6.8	5.0	7.3	5.3	7.5	5.3	7.8	5.3	8.2	5.2	8.6	5.1

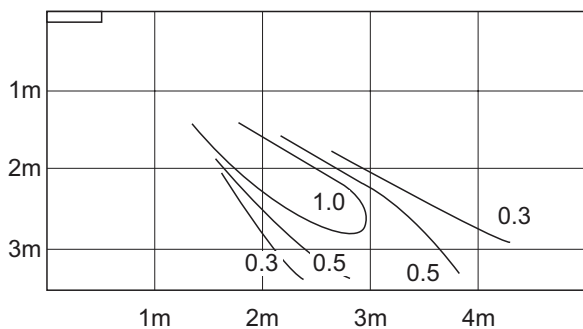
Ceiling Type (MMC-AP***4H-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

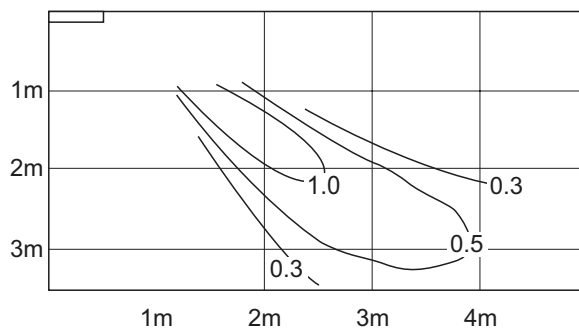
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
036	10.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	12.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	14.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	16.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	18.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	20.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	21.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	23.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	25.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	27.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	29.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	31.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	33.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
	35.0	9.2	6.7	10.2	7.2	10.9	7.6	11.2	7.6	11.5	7.6	12.2	7.5	12.8	7.4
048	37.0	8.9	6.5	9.8	6.9	10.5	7.4	10.8	7.4	11.2	7.4	11.8	7.3	12.4	7.1
	39.0	8.7	6.3	9.6	6.8	10.2	7.2	10.5	7.2	10.9	7.2	11.5	7.1	12.0	6.9
	10.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	12.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	14.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	16.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	18.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	20.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	21.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	23.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	25.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	27.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	29.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	31.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	33.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	35.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	37.0	11.1	8.4	12.3	9.0	13.1	9.5	13.6	9.5	14.0	9.5	14.8	9.4	15.4	9.2
	39.0	10.8	8.2	12.0	8.7	12.8	9.2	13.2	9.2	13.6	9.2	14.4	9.1	15.0	8.9

7. Air throw distance chart

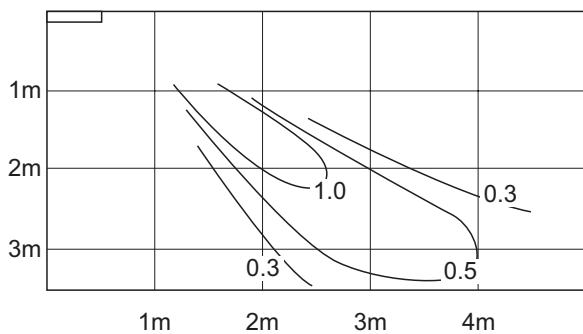
MMC-AP0184H-E, AP0484H-E



MMC-AP0364H-E



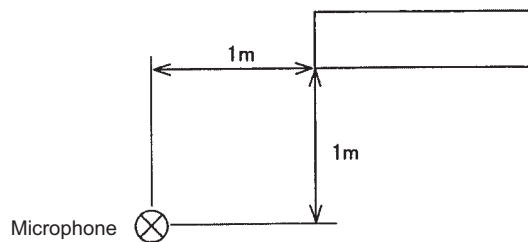
MMC-AP0154H-E, AP0244H-E, AP0274H-E



unit : [m/s]

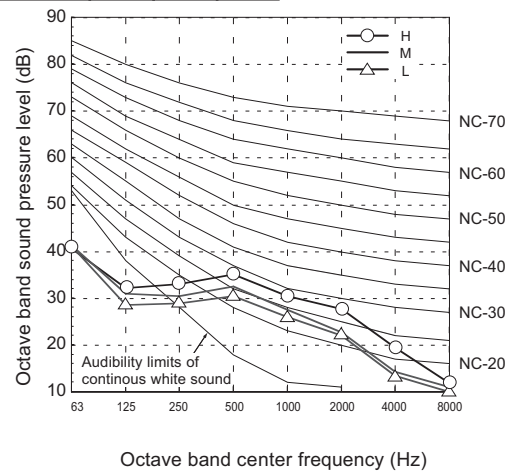
8. Sound level data (NC CURVE)

Sound level values shown are based on a measurement in a non resound room.



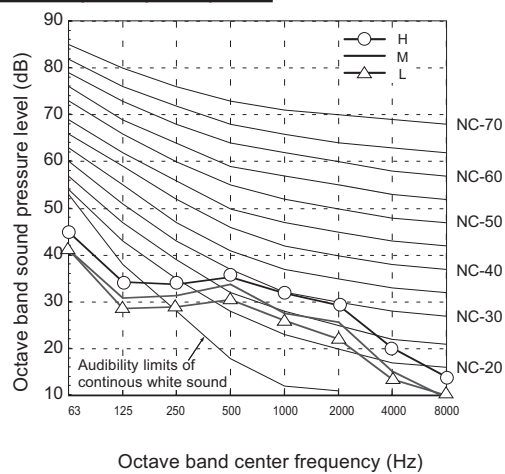
MMC-AP0154H-E

Fan Tap	H	M	L
Sound pressure level(dB(A))	35	32	30



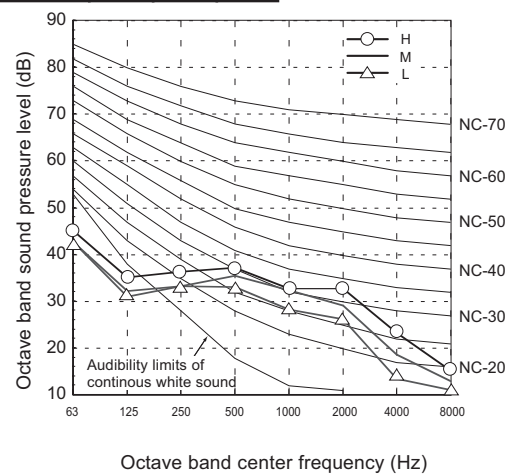
MMC-AP0184H-E

Fan Tap	H	M	L
Sound pressure level(dB(A))	36	33	30



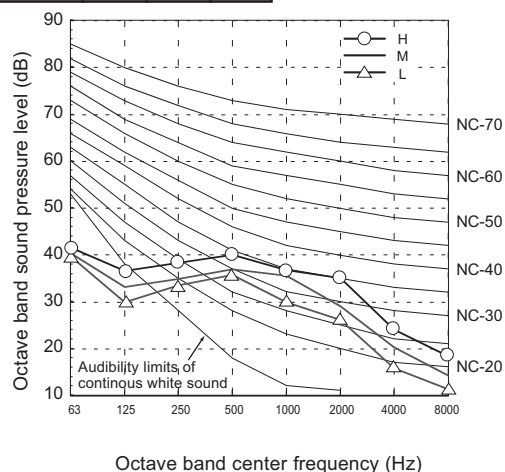
MMC-AP0244H-E, AP0274H-E

Fan Tap	H	M	L
Sound pressure level(dB(A))	38	36	33



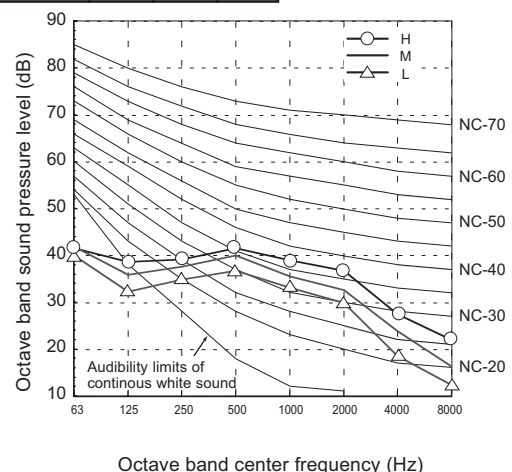
MMC-AP0364H-E

Fan Tap	H	M	L
Sound pressure level(dB(A))	41	38	35



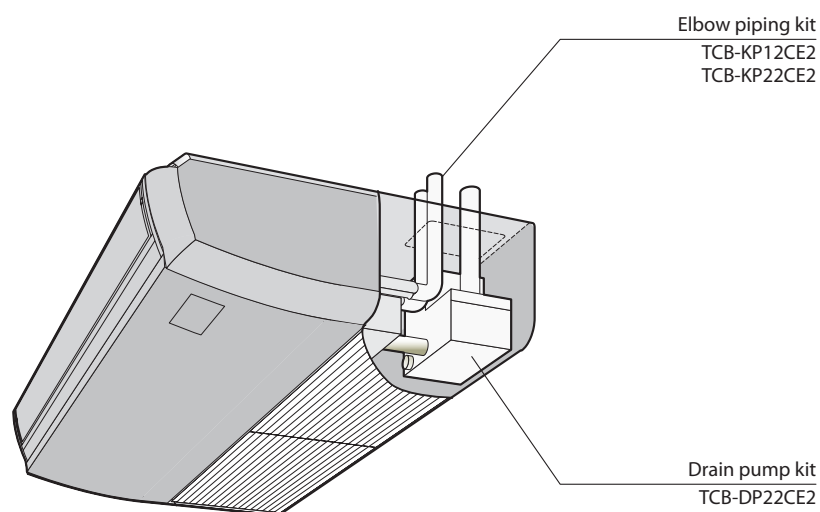
MMC-AP0484H-E

Fan Tap	H	M	L
Sound pressure level(dB(A))	43	40	37



9. Accessories

Parts name	Model name	Applied model	Note	Remarks
Drain pump kit	TCB-DP22CE2	MMC-AP0154/0184H-E	Stand-up 600 or less (from bottom face of ceiling)	Use with TCB-KP12CE2
		MMC-AP0244 to 0484H-E		Use with TCB-KP22CE2
Elbow piping kit	TCB-KP12CE2	MMC-AP0154/0184H-E	Needed when drain pump kit is used	
	TCB-KP22CE2	MMC-AP0244 to 0484H-E		

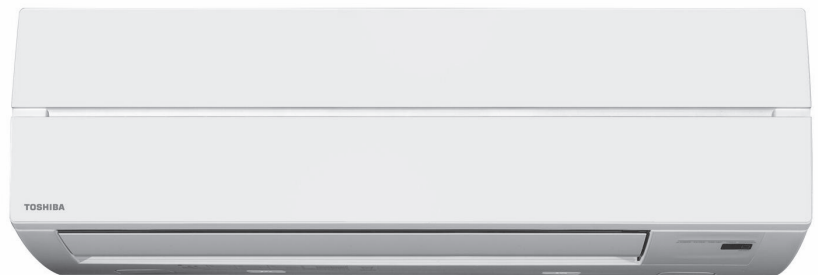


11-2-9.High-wall Type(3 series)

High-wall Type (3 series)

Model name:

MMK-AP0073H
MMK-AP0093H
MMK-AP0123H
MMK-AP0153H
MMK-AP0183H
MMK-AP0243H



Contents

- 1** Specifications
- 2** Dimensions
- 3** Wiring diagram
- 4** Center of Gravity
- 5** Electrical characteristics
- 6** Sensible capacity table
- 7** Fan characteristics
- 8** Sound characteristics (NC Curve)
- 9** Accessories



1 Specifications

Model name		MMK-	AP0073H	AP0093H	AP0123H	AP0153H	AP0183H	AP0243H
Cooling / Heating capacity (Note 1)		(kW)	2.2 / 2.5	2.8 / 3.2	3.6 / 4.0	4.5 / 5.0	5.6 / 6.3	7.1 / 8.0
Electrical Characteristics	Power Supply		1 phase 50Hz 230V (220-240V)(Separate power supply for indoor units is required.)					
	Running current (A)		0.17	0.19	0.19	0.32	0.32	0.37
	Power consumption (kW)		0.018	0.021	0.021	0.043	0.043	0.050
	Starting current (A)		0.22	0.24	0.24	0.41	0.41	0.47
Appearance	Suction grille and side panel		Moon white(Munsell 2.5GY9.0/0.5)					
	Discharge-grille		Moon white(Munsell 2.5GY9.0/0.5)					
	Bottom surface		Moon white(Munsell 2.5GY9.0/0.5)					
Outer dimension	Height x Width x Depth (mm)		320 x 1050 x 228					
Total weight		(kg)	15					
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Cross-flow fan					
	Standard air flow (High/Mid/Low) (m3/h)		570 / 450 /390	600 / 480 / 390	600 / 480 / 390	840 / 660 /540	840 / 660 /540	1020 / 750 / 570
	Motor outlet (W)		30					
Air filter			Standard filter attached					
Controller			Wireless remote controller (packed with indoor unit)					
Connecting pipe	Gas side (mm)		Ø9.5			Ø12.7		Ø15.9
	Liquid side (mm)		Ø6.4					Ø9.5
	Drain port (Nominal dia.)		16 (polypropylene tube)					
Sound pressure level (Note 2) (High / Mid / Low)		(dB(A))	35-31-28	37-32-28	37-32-28	41-36-33	41-36-33	46-39-34

Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

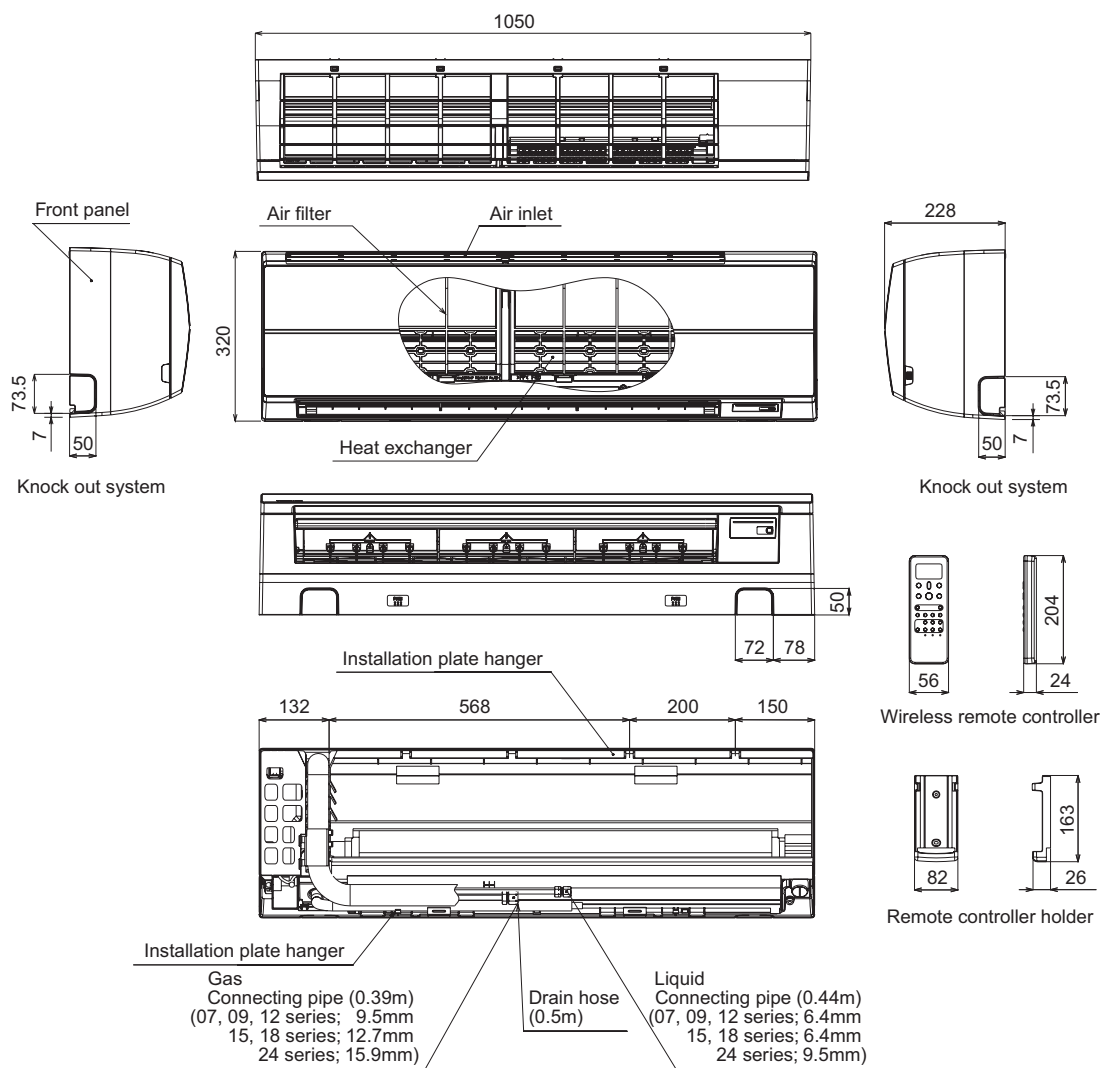
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616.

Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

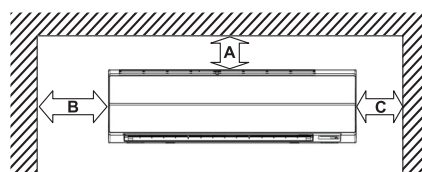
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

2 Dimensions

Model : MMK-AP0073H, AP0093H, AP0123H, AP0153H , AP0183H, AP0243H

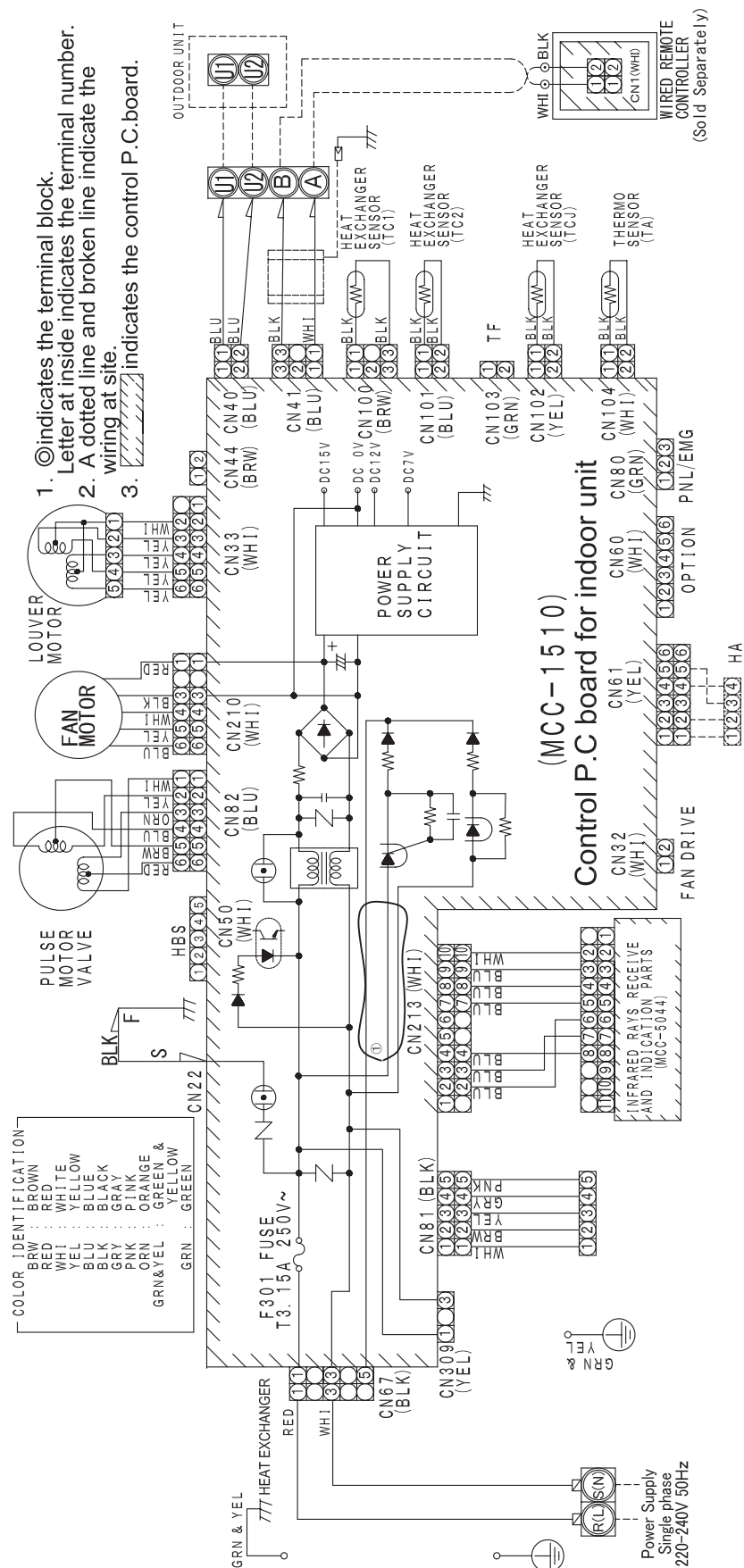


Space required for installation and servicing



	Distance	Comments
A	110 or more	
B	850 or more	For exchange of cross flow fan
C	170 or more	

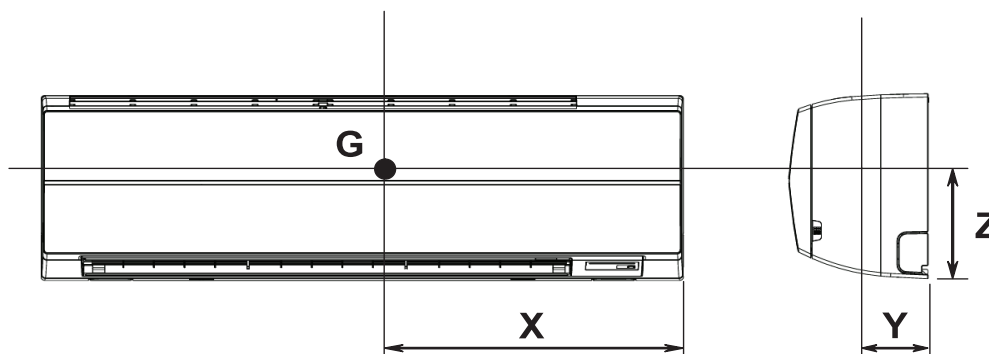
Models: MMK-AP0073H, AP0093H, AP0123H, AP0153H, AP0183H, AP0243H



4 Center of gravity

Model : MMK-AP0073H, AP0093H, AP0123H, AP0153H, AP0183H, AP0243H

	Distance to center of gravity (mm)
X	445
Y	105
Z	170



5 Electrical characteristics

	Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
				Min	Max	kW	FLA	MCA	MOCP
50Hz	High Wall Type	MMK-AP0073H	230-1-50	198	264	0.030	0.20	0.22	15
		MMK-AP0093H	230-1-50	198	264	0.030	0.22	0.24	15
		MMK-AP0123H	230-1-50	198	264	0.030	0.22	0.24	15
		MMK-AP0153H	230-1-50	198	264	0.030	0.37	0.40	15
		MMK-AP0183H	230-1-50	198	264	0.030	0.37	0.40	15
		MMK-AP0243H	230-1-50	198	264	0.030	0.43	0.47	15

MCA : Minimum Circuit Amps

FLA : Full load Amps

MOCP : Maximum Overcurrent Protection(Amps)

kW : Fan Motor Rated Output (kW)

6 Sensible capacity table

High-wall Type (MMK-AP***3H)

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	12.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	14.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	16.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	18.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	20.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	21.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	23.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	25.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	27.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	29.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	31.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	33.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	35.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
009	37.0	1.7	1.5	1.9	1.6	2.1	1.7	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6
	39.0	1.7	1.4	1.9	1.5	2.0	1.6	2.1	1.6	2.1	1.6	2.3	1.6	2.4	1.5
	10.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	12.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	14.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	16.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	18.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	20.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	21.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	23.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	25.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	27.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	29.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	31.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
012	33.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	35.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	37.0	2.2	1.7	2.5	1.8	2.6	1.9	2.7	1.9	2.8	1.9	3.0	1.9	3.1	1.9
	39.0	2.2	1.7	2.4	1.8	2.6	1.9	2.6	1.9	2.7	1.9	2.9	1.9	3.0	1.8
	10.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	12.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	14.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	16.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	18.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	20.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	21.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	23.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	25.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	27.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	29.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	31.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	33.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	35.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	37.0	2.9	2.1	3.2	2.3	3.4	2.4	3.5	2.4	3.6	2.4	3.8	2.4	4.0	2.3
	39.0	2.8	2.1	3.1	2.2	3.3	2.4	3.4	2.4	3.5	2.4	3.7	2.3	3.9	2.3

High-wall Type (MMK-AP***3H)

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	10.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	12.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	14.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	16.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	18.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	20.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	21.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	23.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	25.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	27.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	29.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	31.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	33.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	35.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
	37.0	3.6	2.5	4.0	2.7	4.2	2.8	4.4	2.8	4.5	2.8	4.7	2.8	5.0	2.7
	39.0	3.5	2.4	3.8	2.6	4.1	2.7	4.2	2.7	4.4	2.7	4.6	2.7	4.8	2.6
018	10.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	12.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	14.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	16.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	18.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	20.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	21.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	23.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	25.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	27.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	29.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	31.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	33.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	35.0	4.6	3.2	5.1	3.4	5.4	3.6	5.6	3.6	5.8	3.6	6.1	3.6	6.4	3.5
	37.0	4.5	3.1	4.9	3.3	5.3	3.5	5.4	3.5	5.6	3.5	5.9	3.5	6.2	3.4
	39.0	4.3	3.0	4.8	3.2	5.1	3.4	5.3	3.4	5.4	3.4	5.7	3.4	6.0	3.3
024	10.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	12.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	14.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	16.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	18.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	20.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	21.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	23.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	25.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	27.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	29.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	31.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	33.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	35.0	5.8	4.2	6.4	4.4	6.9	4.7	7.1	4.7	7.3	4.7	7.7	4.7	8.1	4.5
	37.0	5.6	4.0	6.2	4.3	6.7	4.6	6.9	4.5	7.1	4.5	7.5	4.5	7.8	4.4
	39.0	5.5	3.9	6.1	4.2	6.5	4.4	6.7	4.4	6.9	4.4	7.3	4.4	7.6	4.3

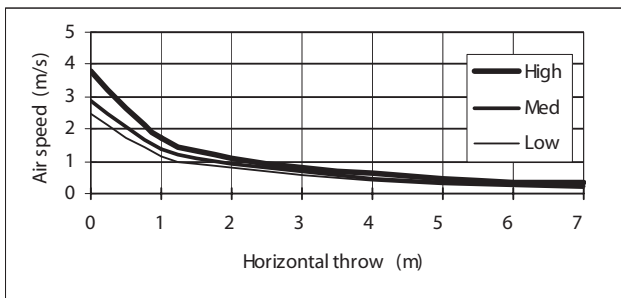
7 Fan characteristics

Discharge Air Speed and Air Throw

High Wall Type (3 series)

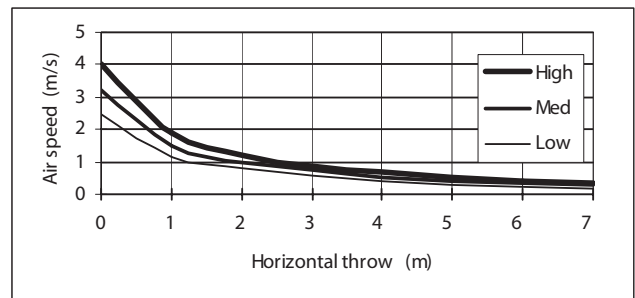
Model : MMK-AP0073H

Horizontal discharge initial speed High wind : 3.8m/s
 Med wind : 2.9m/s
 Low wind : 2.5m/s



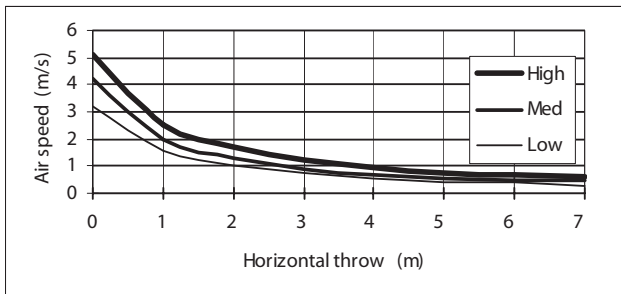
Model : MMK-AP0093H, AP0123H

Horizontal discharge initial speed High wind : 4.0m/s
 Med wind : 3.2m/s
 Low wind : 2.5m/s



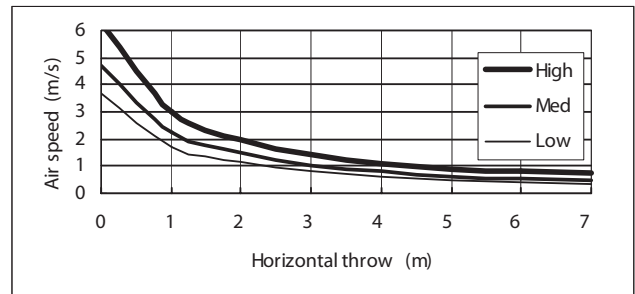
Model : MMK-AP0153H, AP0183H

Horizontal discharge initial speed High wind : 5.1m/s
 Med wind : 4.2m/s
 Low wind : 3.2m/s



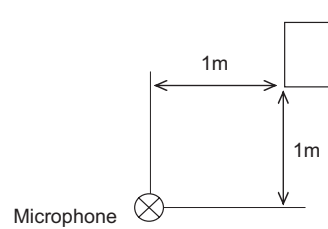
Model : MMK-AP0243H

Horizontal discharge initial speed High wind : 6.2m/s
 Med wind : 4.7m/s
 Low wind : 3.7m/s



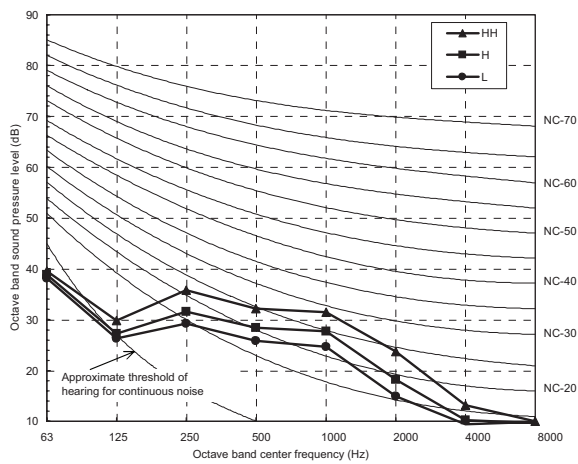
8 Sound characteristics (NC Curve)

High Wall Type (3 series)



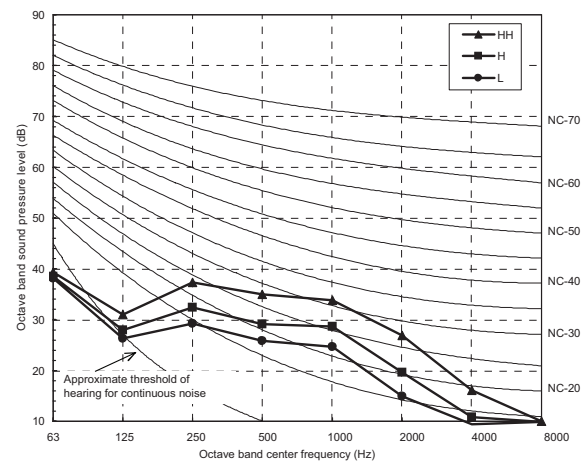
MMK-AP0073H

Sound pressure level (dB(A))	HH - H - L
	35 - 31 - 28



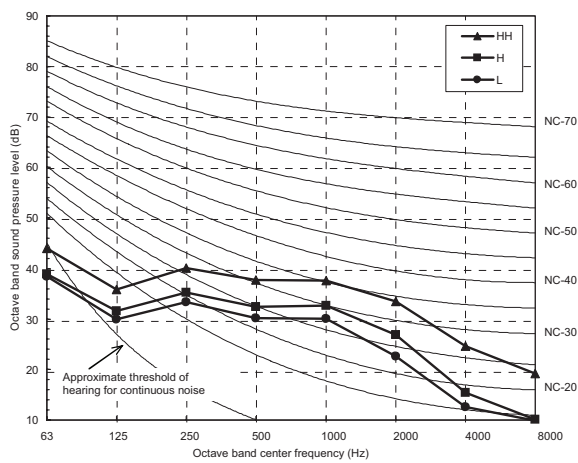
MMK-AP0093H/AP0123H

Sound pressure level (dB(A))	HH - H - L
	37 - 32 - 28



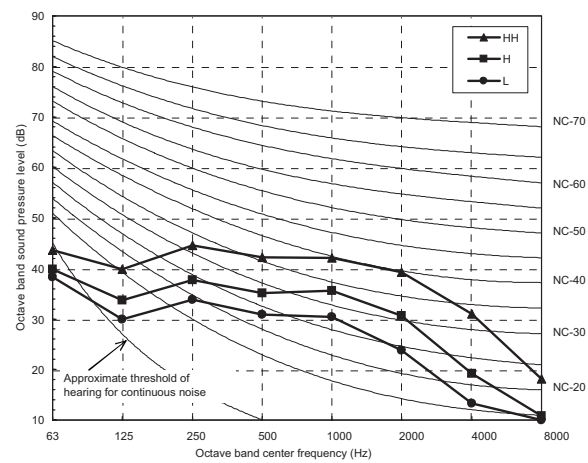
MMK-AP0153H/AP0183H

Sound pressure level (dB(A))	HH - H - L
	41 - 36 - 33



MMK-AP0243H

Sound pressure level (dB(A))	HH - H - L
	46 - 39 - 34



9 Accessories

Remote controller

Packed with the indoor unit

Name	Model name	Appearance	Application	Function
Wireless remote controller	WH-L11SE		 	• Start / Stop • Changing mode • Temperature setting • Air flow changing (5 steps) • Louver setting • Clock • Timer function - ON/OFF timer (10 min. step) - Everyday timer - Sleep timer - COMFORT SLEEP timer • High power mode • QUIET mode • One-touch pre-set memory

High-wall Type (4 series)

Indoor Unit

MMK-AP0074MH-E

MMK-AP0094MH-E

MMK-AP0124MH-E



1. Specifications
2. Dimensions
3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. Fan characteristics
8. Sound characteristics (NC-Curve)
9. Accessories

1. Specifications

High-wall type (4 series)



Model name		MMK-	AP0074MH-E	AP0094MH-E	AP0124MH-E
Cooling / Heating capacity (Note 1)		(kW)	2.2 / 2.5	2.8 / 3.2	3.6 / 4.0
Electrical Characteristics	Power Supply		1 phase 50Hz 230V (220-240V) (Power exclusive for indoor is required.)		
	Running current (A)		0.17	0.18	0.19
	Power consumption (kW)		0.017	0.018	0.019
	Starting current (A)		0.22	0.23	0.24
Appearance	Suction grille and side panel		Moon white (Munsell 2.5GY9.0/0.5)		
	Discharge grille		Moon white (Munsell 2.5GY9.0/0.5)		
	Bottom surface		Moon white (Munsell 2.5GY9.0/0.5)		
Outer dimension	Height x Width x Depth (mm)		275 x 790 x 208		
Total weight		(kg)	11		
Heat exchanger		Finned tube			
Soundproof/Heat-insulating material		Non-flammable insulation			
Fan unit	Fan		Cross-flow fan		
	Standard air flow (High/Mid/Low) (m3/h)		480 / 420 / 360	510 / 450 / 360	540 / 450 / 360
	Motor output		30		
Air filter		Standard filter attached (Simple filter)			
Controller (Note 3)		Wireless remote controller (WH-H2UE, Packed with indoor unit)			
Connecting pipe	Gas side (mm)		9.5		
	Liquid side (mm)		6.4		
	Drain port (Outer dia.)		16 (Polyvinyl chloride tube)		
Sound pressure level (Note 2) (High / Mid / Low) (dB(A))		35-32-29		36-33-29	37-33-29

Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

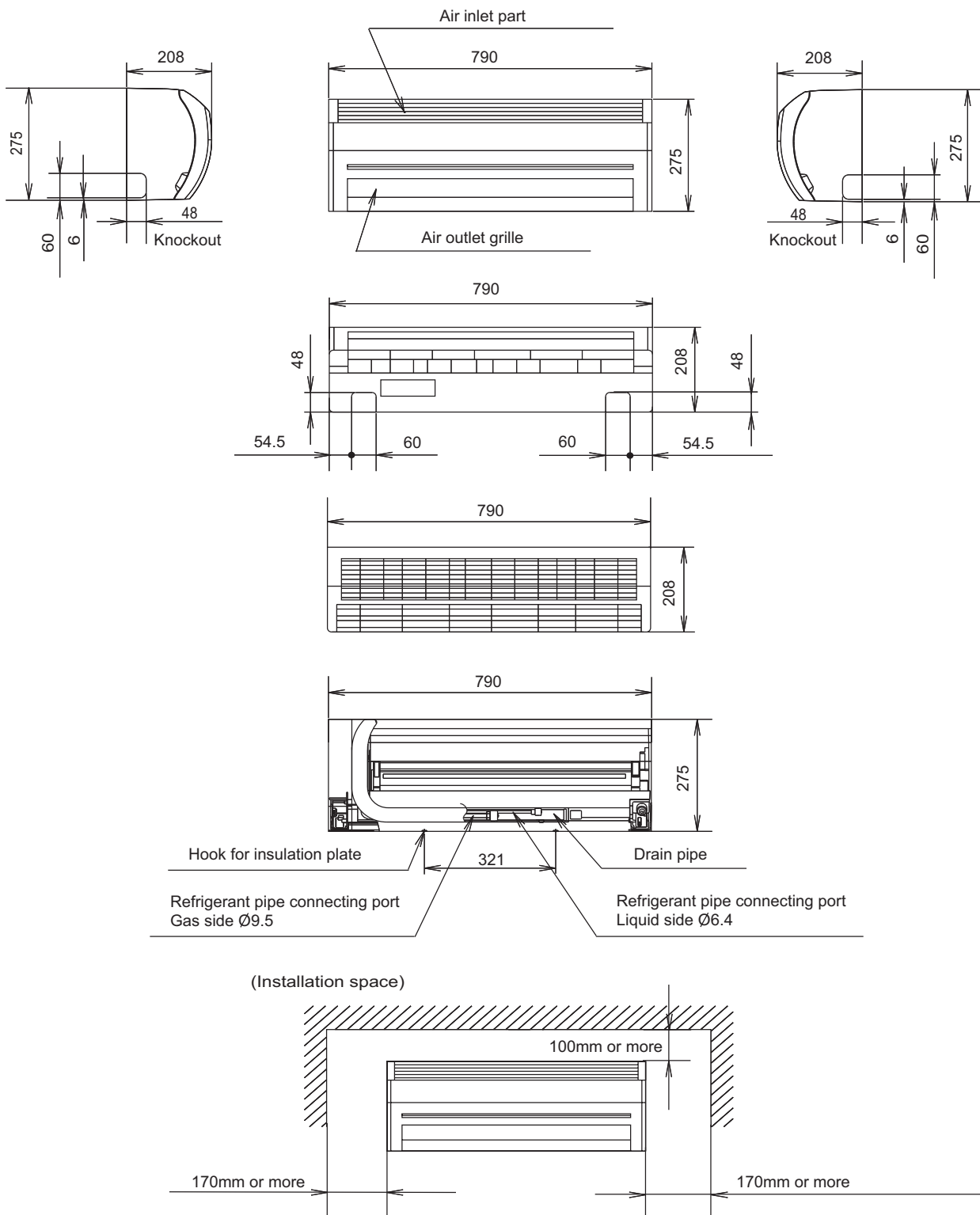
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

Note 3 : Wireless remote controller is packed with indoor unit.
Wired remote controller can be also connected.

Note 4 : Rated conditions Cooling : Indoor air temperature 27°CDB/19°CWB, Outdoor air temperature 35°CDB
Heating: Indoor air temperature 20°CDB/, Outdoor air temperature 7°CDB/6°CWB

2. Dimensions

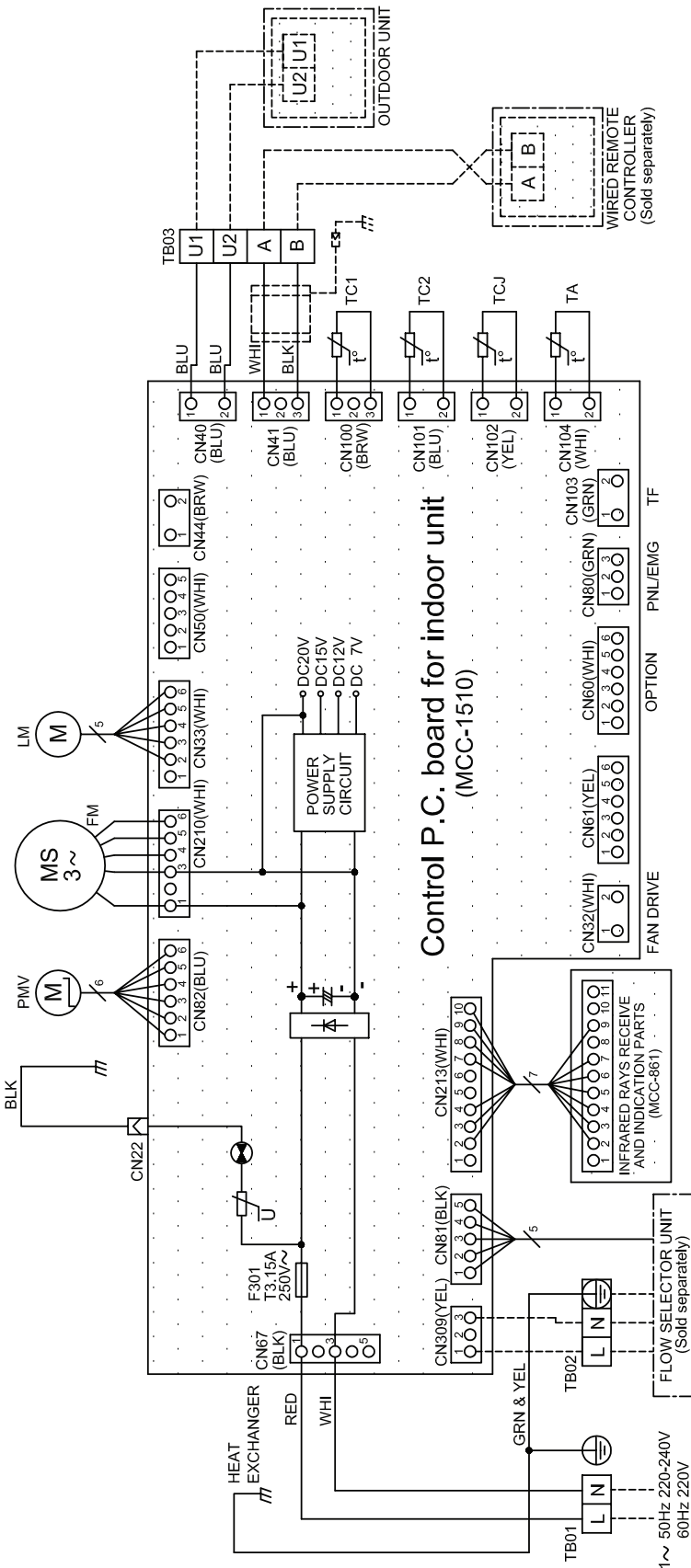
Model : AP0074MH-E, AP0094MH-E, AP0124MH-E



Note : All dimensions are in mm.

3. Wiring Diagram

Model : MMK-AP0074MH-E, AP0094MH-E, AP0124MH-E



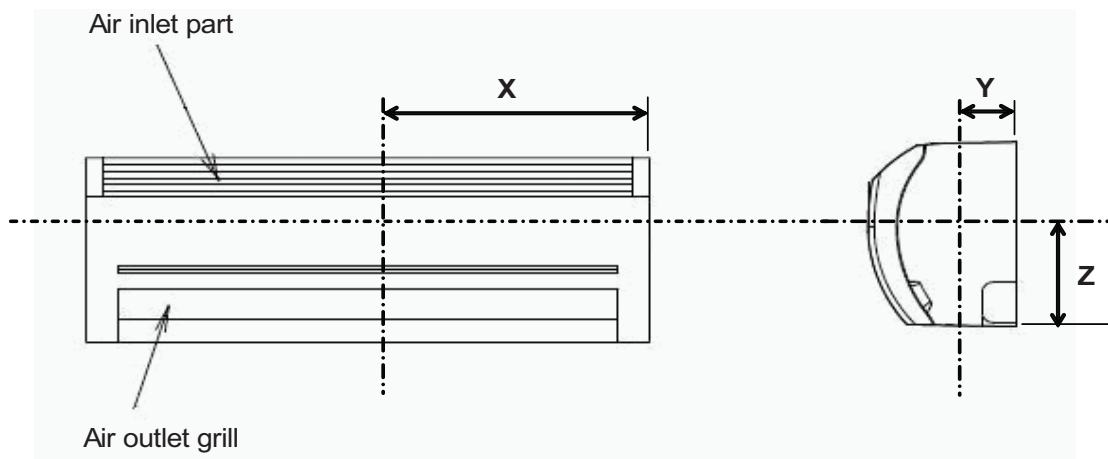
1. Broken line indicate the wiring at site. Long dashed short dashed line indicate the accessories.
2. indicates the terminal block.
3. indicates the connector on the control P.C. board.
4. indicates the protection ground.

COLOR IDENTIFICATION	
RED	: RED
WHI	: WHITE
YEL	: YELLOW
BLU	: BLUE
BLK	: BLACK
GRY	: GRAY
PNK	: PINK
ORN	: ORANGE
BRW	: BROWN
GRN	: GREEN
GRN&YEL	: GREEN&YELLOW

Symbol	Parts Name
CN**	Connector
F301	Fuse
FM	Fan Motor
LM	Lower Motor
TA	Indoor temp sensor
TB01,02,03	Terminal Block
TC1,TC2,TCJ	Temp sensor

4. Center of Gravity

Model name	X(mm)	Y(mm)	Z(mm)	Total weight(kg)
MMY-AP0074MH-E MMY-AP0094MH-E MMY-AP0124MH-E	320	102	155	11



5. Electrical characteristics

Model	Nominal Voltage (V-Ph-Hz)	Voltage		Fan Motor		Power Supply	
		Min	Max	kW	FLA	MCA	MOCP
MMK-AP0074MH-E	230-1-50	198	264	0.03	0.20	0.24	15
MMK-AP0094MH-E	230-1-50	198	264	0.03	0.21	0.26	15
MMK-AP0124MH-E	230-1-50	198	264	0.03	0.22	0.27	15

Legend MCA : Minimum Circuit Amps FLA : Full Load Amps
 MOCP : Maximum Overcurrent Protection (Amps) kW : Fan Motor Rated Output (kW)

6. Sensible Capacity Table

High-wall Type (MMK-AP***4MH-E) 4 series

TC : Total capacity [kW]

SHC : Sensible capacity [kW]

unit size	outdoor air temp. CDB	Indoor Air Temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	12.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	14.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	16.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	18.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	20.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	21.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	23.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	25.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	27.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	29.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	31.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	33.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	35.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
009	37.0	1.7	1.5	1.9	1.6	2.1	1.7	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6
	39.0	1.7	1.4	1.9	1.5	2.0	1.6	2.1	1.6	2.1	1.6	2.3	1.6	2.4	1.5
	10.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	12.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	14.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	16.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	18.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	20.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	21.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	23.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	25.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	27.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	29.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	31.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
012	33.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	35.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	37.0	2.2	1.7	2.5	1.8	2.6	1.9	2.7	1.9	2.8	1.9	3.0	1.9	3.1	1.9
	39.0	2.2	1.7	2.4	1.8	2.6	1.9	2.6	1.9	2.7	1.9	2.9	1.9	3.0	1.8
	10.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	12.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	14.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	16.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	18.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	20.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	21.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	23.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	25.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	27.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	29.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	31.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	33.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	35.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	37.0	2.9	2.1	3.2	2.3	3.4	2.4	3.5	2.4	3.6	2.4	3.8	2.4	4.0	2.3
	39.0	2.8	2.1	3.1	2.2	3.3	2.4	3.4	2.4	3.5	2.4	3.7	2.3	3.9	2.3

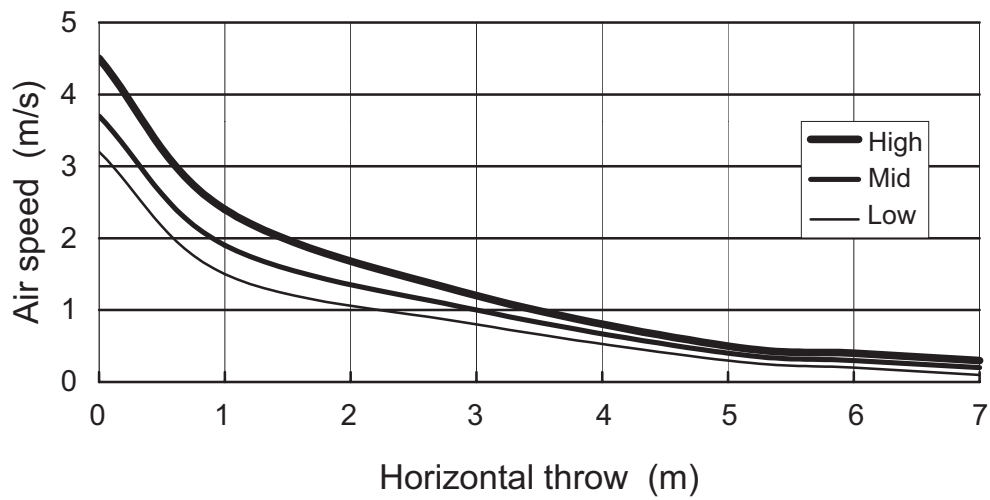
7. Fan Characteristics

Discharge Air Speed and Air Throw

High-wall Type (4 series)

Model : MMK-AP0074MH-E, AP0094MH-E, AP0124MH-E

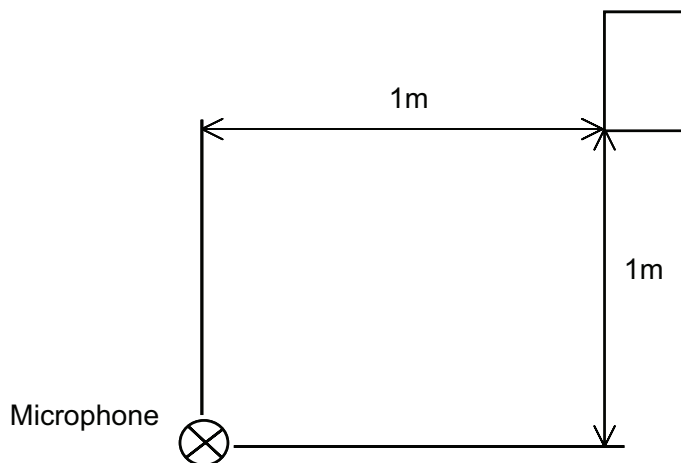
Horizontal discharge Initial speed High wind : 4.5m/s
 Med wind : 3.7m/s
 Low wind : 3.2m/s



8. Sound Characteristics (NC curve)

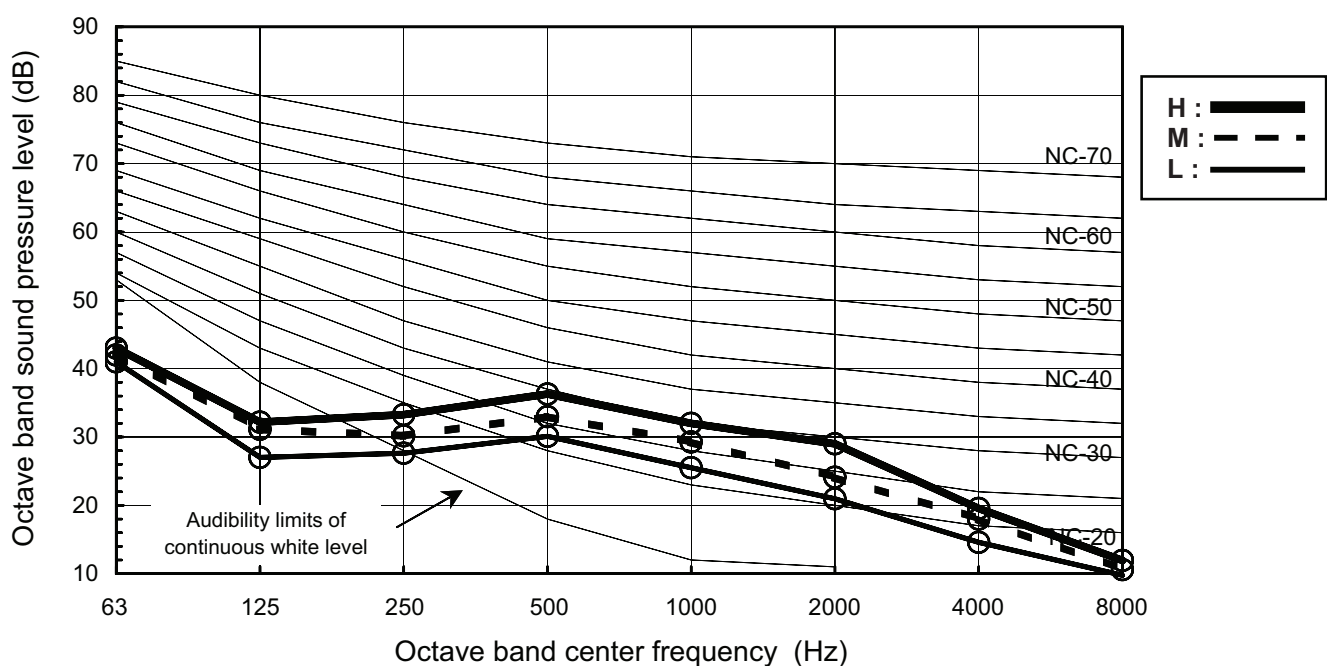
High-wall Type (4 series)

Model : MMK-AP0074MH-E, AP0094MH-E, AP0124MH-E



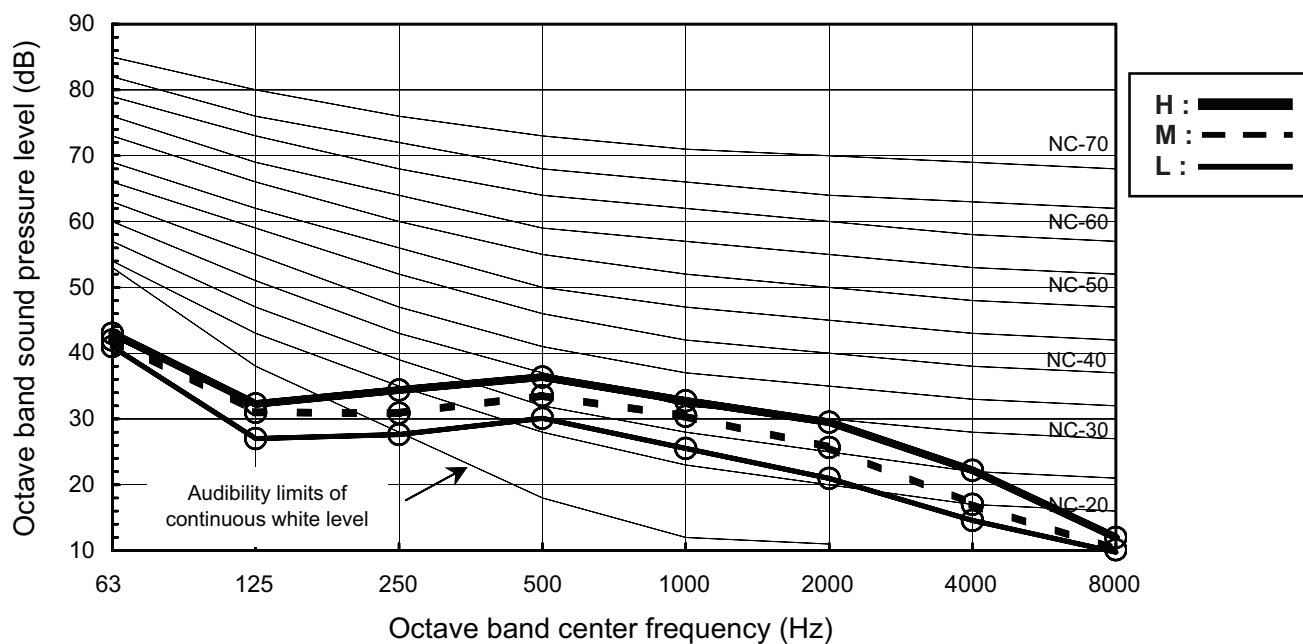
MMK-AP0074MH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	35	32	29



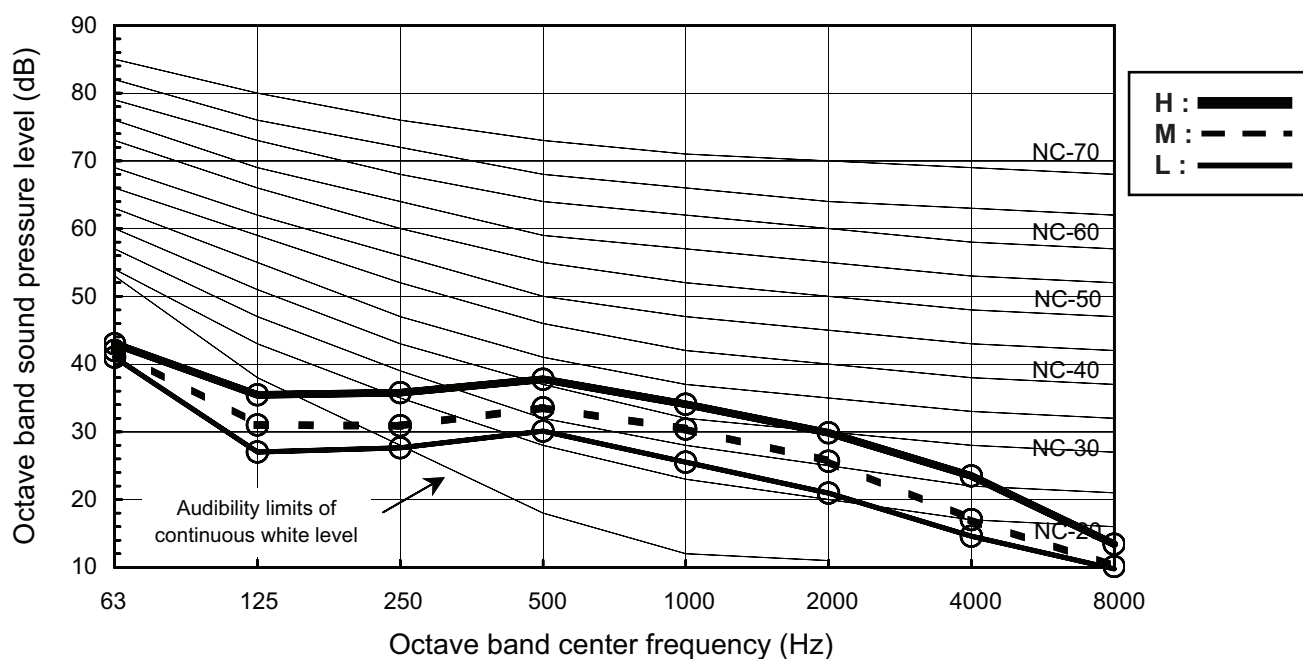
MMK-AP0094MH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	36	33	29



MMK-AP0124MH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	37	33	29



9. Accessories

Remote controller

(Packed with the indoor unit)

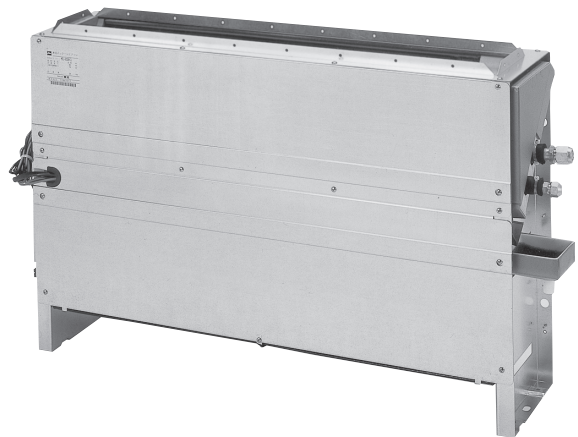
Name	Model name	Appearance	Application	Function
Wireless remote controller	WH-H2UE			Start / Stop Changing mode Temperature setting Air flow changing (5 step) Clock Timer function - ON/OFF timer (10 min. step) - Everyday timer High power mode ECO mode (Sleep timer with ECO-logic) One-touch pre-set memory One-touch Auto (*1)

(Note.1) SMMS-i cannot accept "AUTO" mode, Super HRM can accept "AUTO" mode.

11-2-11. Floor Standing Concealed Type

Floor Standing Concealed Type

MML-AP0074BH-E / MML-AP0094BH-E
MML-AP0124BH-E / MML-AP0154BH-E
MML-AP0184BH-E / MML-AP0244BH-E



Contents

1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. Sound characteristics (NC-Curve)



1. Specifications

Floor Standing Concealed Type

Model name		MML-	AP0074BH-E	AP0094BH-E	AP0124BH-E	AP0154BH-E	AP0184BH-E	AP0244BH-E
Cooling/Heating capacity (Note 1)		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Separate power supply for indoor units is required.)					
	Running current (A)		0.25			0.45		0.46
	Power consumption (kW)		0.056			0.090		0.095
	Power factor (%)		97			87		90
	Starting current (A)		0.60			0.80		1.00
Appearance			Zinc hot dipping steel plate					
Outer dimension	Height x Width x Depth (mm)		600 x 745 x 220			600 x 1,045 x 220		
Total weight		(kg)	21			29		
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)		460/400/300			740/600/490		950/790/640
	Motor output (W)		19			70		
	Static pressure range (kPa)		0					
Air filter			Standard filter (Simple filter)					
Controller			Remote controller					
Connecting pipe	Gas side (mm)		ø 9.5			ø 12.7		ø 15.9
	Liquid side (mm)		ø 6.4					ø 9.5
	Drain port (Nominal dia. mm)		20 (One side of male screw)					
Sound pressure level(Note 2)(High/Mid./Low)(dB(A))			36/34/32					42/37/33

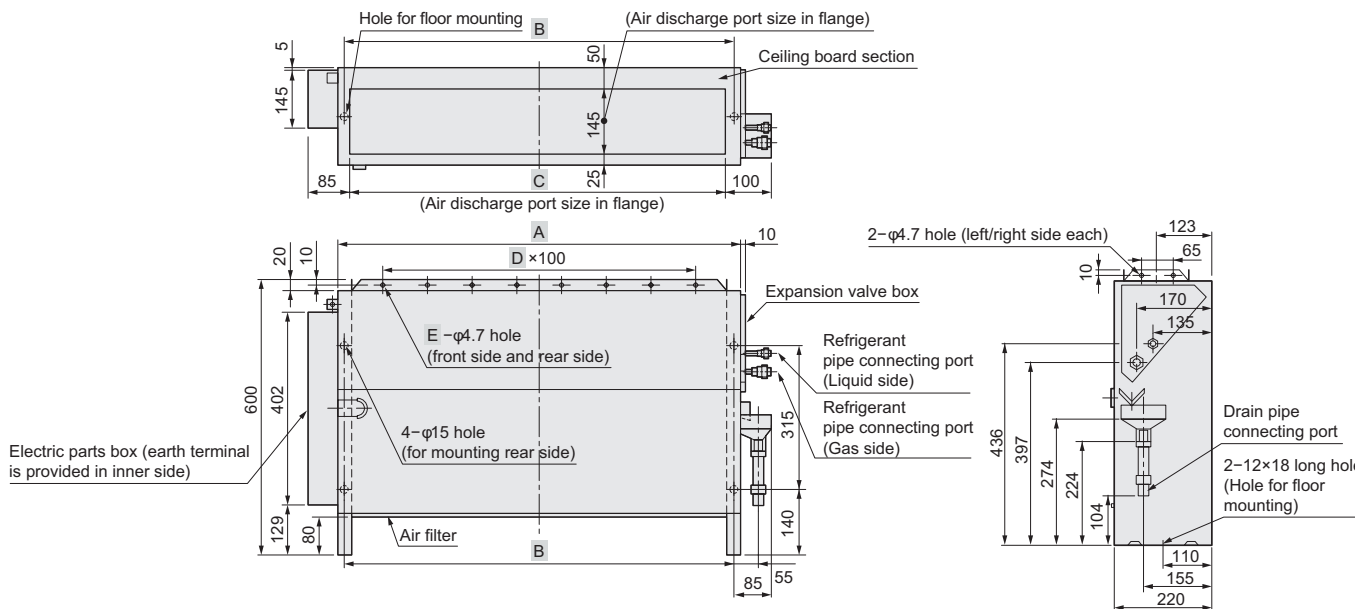
Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

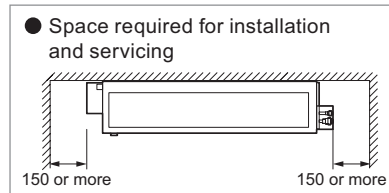
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

2. Dimension

MML-AP0074BH-E, AP094BH-E, AP0124BH-E, AP0154BH-E, AP0184BH-E, AP0244BH-E



Model	MML-	A	B	C	D	E
AP0074BH-E to AP0124BH-E		610	580	550	4	5
AP0154BH-E to AP0244BH-E		910	880	850	7	8



(Unit: mm)

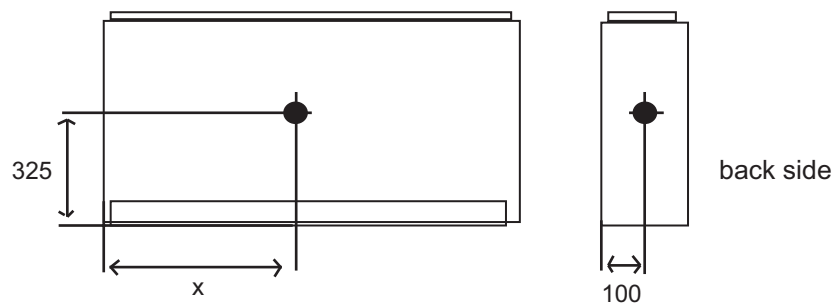
MML-AP0074BH-E, AP0094BH-E, AP0124BH-E, AP0154BH-E, AP0184BH-E, AP0244BH-E

1. Broken line indicates the wiring at site.
 Long dashed short dashed line indicates the accessories.
 2.  indicates the terminal block.
 —○— indicates the connection terminal.
 3.  indicates the connector on the control P.C. board.
 4.  indicates the protection ground.
 5.  indicates the control P.C. board.

Symbol	Parts Name	COLOR IDENTIFICATION
CN**	Connector	RED : RED
F301	Fuse	WHI : WHITE
FM	Fan Motor	YEL : YELLOW
PMV	Pulse Motor Valve	BLU : BLUE
RC	Running Capacitor	BLK : BLACK
RY005,006,007	Fan Motor Control Relay	GRY : GRAY
TA	Indoor temp sensor	PNK : PINK
TB01,02,03	Terminal Block	ORN : ORANGE
TC1,TC2,TCJ	Temp sensor	BRW : BROWN
TR	Transformer	GRN : GREEN

4. Center of gravity

Model name	X (mm)	Total weight(kg)
MML-AP0074BH-E	340	21
MML-AP0094BH-E		
MML-AP0124BH-E		
MML-AP0154BH-E	470	29
MML-AP0184BH-E		
MML-AP0244BH-E		



5. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
Floor Standing Concealed Type	MML-AP 0094 BH-E	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP 0124 BH-E	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP 0154 BH-E	230-1-50	198	264	0.070	0.52	0.65	15
	MML-AP 0184 BH-E	230-1-50	198	264	0.070	0.52	0.65	15
	MML-AP 0244 BH-E	230-1-50	198	264	0.070	0.53	0.66	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

6. Sensible capacity table

Floor Standing Concealed Type (MML-AP*4BH-E)** TC : Total capacity [kW] SHC : Sensible capacity [kW]

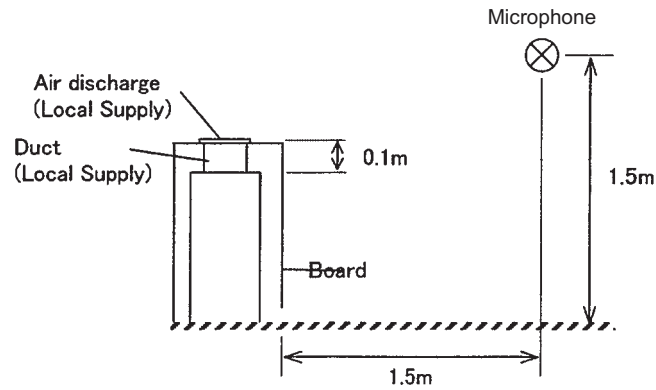
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	12.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	14.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	16.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	18.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	20.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	21.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	23.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	25.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	27.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	29.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	31.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	33.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	35.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
009	37.0	1.7	1.2	1.9	1.3	2.1	1.4	2.1	1.4	2.2	1.4	2.3	1.3	2.4	1.3
	39.0	1.7	1.2	1.9	1.2	2.0	1.3	2.1	1.3	2.1	1.3	2.3	1.3	2.4	1.3
	10.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	12.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	14.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	16.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	18.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	20.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	21.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	23.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	25.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	27.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	29.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	31.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
012	33.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	35.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	37.0	2.2	1.4	2.5	1.5	2.6	1.6	2.7	1.5	2.8	1.5	3.0	1.5	3.1	1.5
	39.0	2.2	1.3	2.4	1.4	2.6	1.5	2.6	1.5	2.7	1.5	2.9	1.5	3.0	1.5
	10.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	12.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	14.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	16.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	18.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	20.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	21.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	23.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	25.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	27.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
015	29.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	31.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	33.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	35.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	37.0	2.9	1.9	3.2	2.0	3.4	2.1	3.5	2.1	3.6	2.1	3.8	2.1	4.0	2.1
	39.0	2.8	1.8	3.1	2.0	3.3	2.1	3.4	2.1	3.5	2.1	3.7	2.1	3.9	2.0
	10.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	12.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	14.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	16.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	18.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	20.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	21.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	23.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	25.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	27.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	29.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	31.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	33.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	35.0	3.7	2.5	4.1	2.7	4.4	2.8	4.5	2.8	4.6	2.8	4.9	2.8	5.1	2.7
	37.0	3.6	2.4	4.0	2.6	4.2	2.7	4.4	2.7	4.5	2.7	4.7	2.7	5.0	2.6
	39.0	3.5	2.3	3.8	2.5	4.1	2.7	4.2	2.6	4.4	2.6	4.6	2.6	4.8	2.6

Floor Standing Concealed Type (MML-AP***4BH-E) TC : Total capacity [kW] SHC : Sensible capacity [kW]

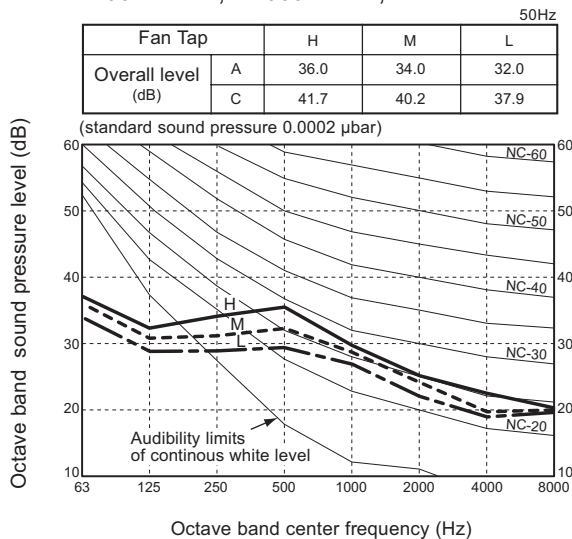
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	10.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	12.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	14.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	16.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	18.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	20.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	21.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	23.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	25.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	27.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	29.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	31.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	33.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	35.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
024	37.0	4.5	3.0	4.9	3.2	5.3	3.4	5.4	3.4	5.6	3.4	5.9	3.4	6.2	3.3
	39.0	4.3	2.9	4.8	3.1	5.1	3.3	5.3	3.3	5.4	3.3	5.7	3.3	6.0	3.2
	10.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	12.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	14.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	16.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	18.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	20.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	21.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	23.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	25.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	27.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	29.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	31.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	33.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	35.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	37.0	5.6	3.9	6.2	4.1	6.7	4.4	6.9	4.4	7.1	4.4	7.5	4.3	7.8	4.2
	39.0	5.5	3.8	6.1	4.0	6.5	4.2	6.7	4.2	6.9	4.2	7.3	4.2	7.6	4.1

7. Sound level data (NC CURVE)

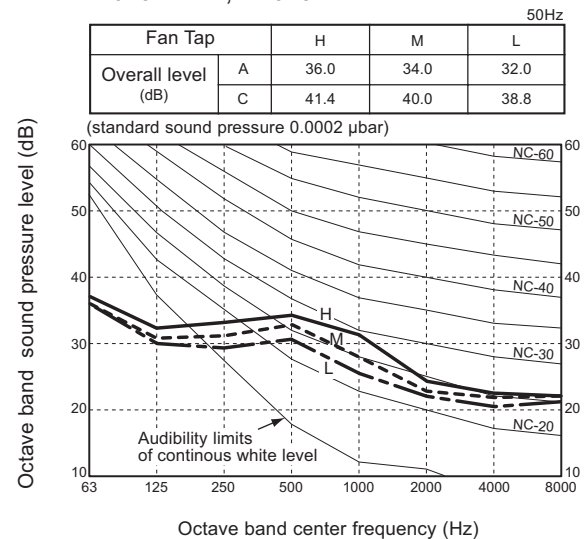
Sound level values shown are based on a measurement in a non resonant room.



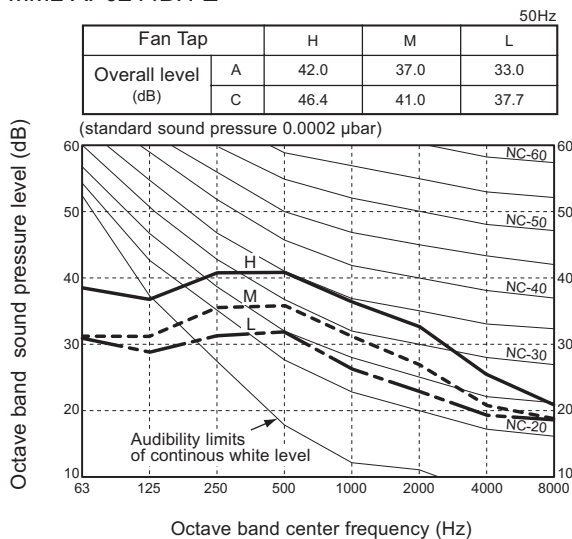
MML-AP0074BH-E, AP0094BH-E, AP124BH-E



MML-AP0154BH-E, AP0184BH-E



MML-AP0244BH-E



11-2-12. Floor Standing Cabinet Type

Floor Standing Cabinet Type

MML-AP0074H-E / MML-AP0094H-E
MML-AP0124H-E / MML-AP0154H-E
MML-AP0184H-E / MML-AP0244H-E



Contents

1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. Air throw distance chart
8. Sound characteristics (NC-Curve)



1. Specifications

Floor Standing Cabinet Type

Model name		MML-	AP0074H-E	AP0094H-E	AP0124H-E	AP0154H-E	AP0184H-E	AP0244H-E
Cooling/Heating capacity (Note 1)		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Separate power supply for indoor units is required.)					
	Running current (A)		0.26		0.43		0.47	
	Power consumption (kW)		0.056		0.092		0.102	
	Power factor (%)		94		93		94	
	Starting current (A)		0.60		0.80		1.10	
Appearance			Silky shade (1Y8.5/0.5)					
Outer dimension	Height x Width x Depth (mm)		630 x 950 x 230					
Total weight (kg)			37				40	
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)		480/420/360		900/780/650		1,080/930/780	
	Motor outlet (W)		45				70	
Air filter			Standard filter (Simple filter)					
Controller			Remote controller					
Connecting pipe	Gas side (mm)		ø 9.5			ø 12.7		ø 15.9
	Liquid side (mm)		ø 6.4					ø 9.5
	Drain port (Nominal dia. mm)		20 (Polyvinyl chloride tube)					
Sound pressure level(Note 2) (High/Mid./Low) (dB(A))			39/37/35		45/41/38		49/44/39	

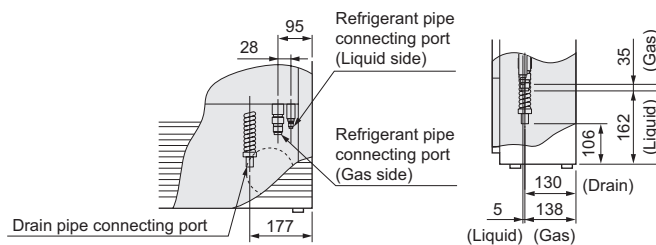
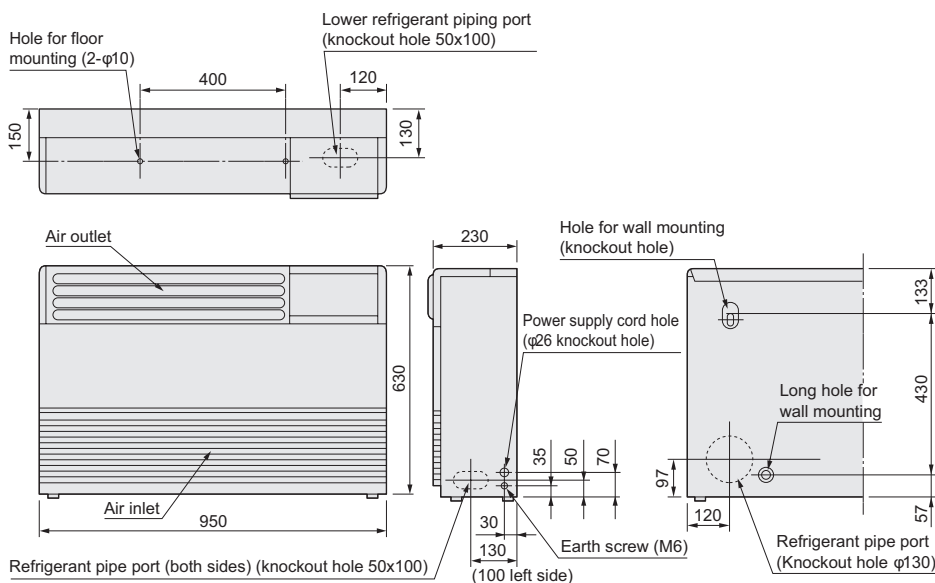
Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

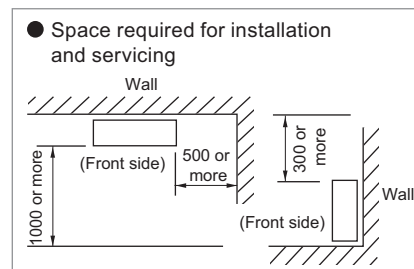
Note : Rated conditions Cooling : Indoor air temperature 27 °C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7 °C DB/6°C WB

2. Dimensions

MML-AP0074H-E, AP0094H-E, AP0124H-E, AP0154H-E, AP0184H-E, AP0244H-E



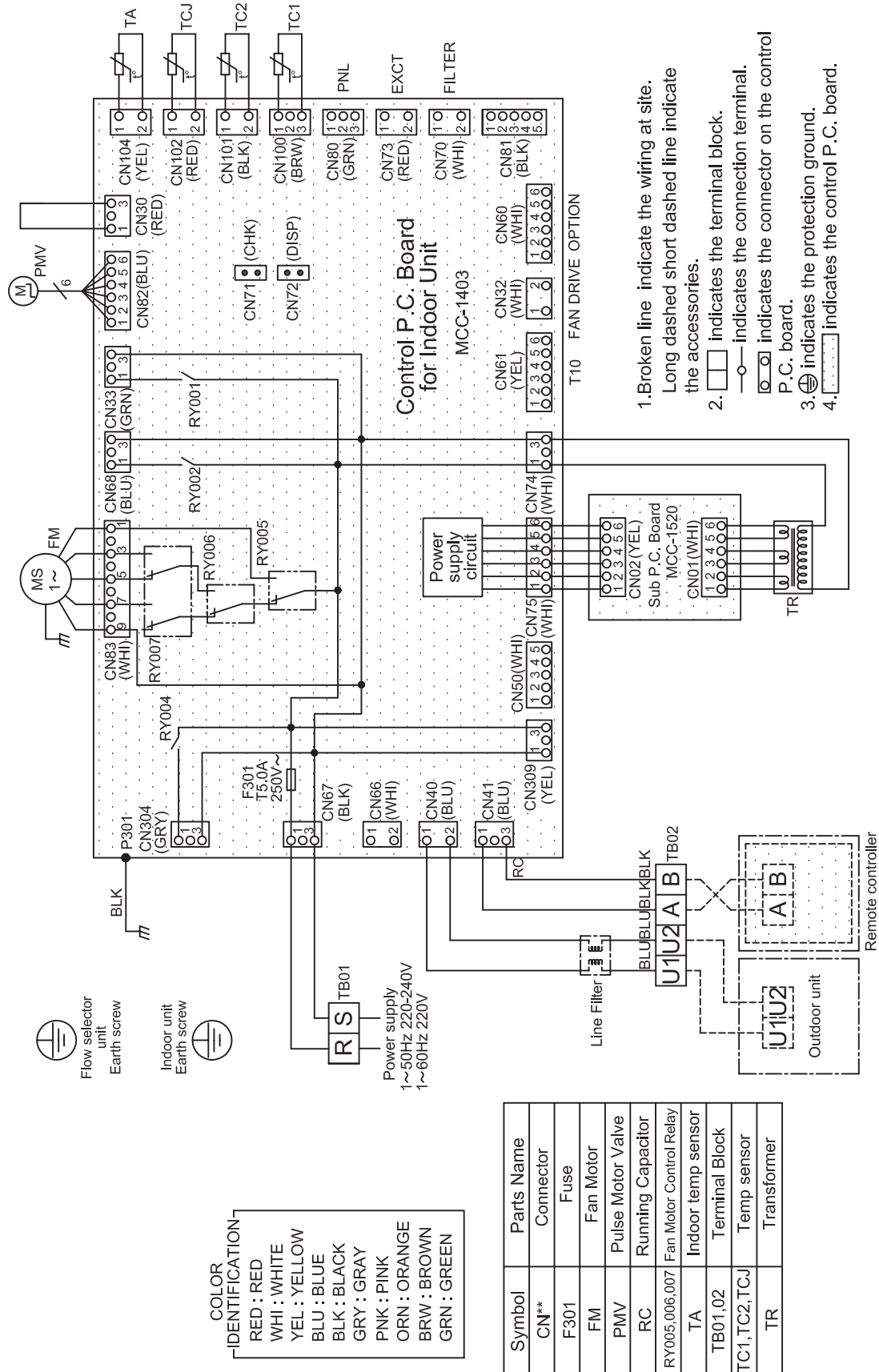
Piping positional drawing



(Unit: mm)

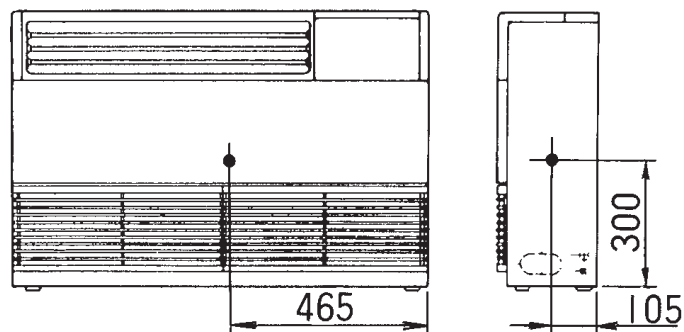
3. Wiring diagram

MML-AP0074H-E, AP0094H-E, AP0124H-E, AP0154H-E, AP0184H-E, AP0244H-E



4. Center of gravity

Model name	Total weight(kg)
MML-AP0074H-E	37
MML-AP0094H-E	
MML-AP0124H-E	
MML-AP0154H-E	
MML-AP0184H-E	40
MML-AP0244H-E	



5. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
Floor Standing Cabinet Type	MML-AP0074H-E	230-1-50	198	264	0.045	0.30	0.37	15
	MML-AP0094H-E	230-1-50	198	264	0.045	0.30	0.37	15
	MML-AP0124H-E	230-1-50	198	264	0.045	0.49	0.62	15
	MML-AP0154H-E	230-1-50	198	264	0.045	0.49	0.62	15
	MML-AP0184H-E	230-1-50	198	264	0.070	0.54	0.68	15
	MML-AP0244H-E	230-1-50	198	264	0.070	0.54	0.68	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

6. Sensible capacity table

Floor Standing Cabinet Type (MML-AP*4H-E)**

TC : Total capacity [kW]

SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	12.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	14.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	16.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	18.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	20.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	21.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	23.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	25.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	27.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	29.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	31.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
	33.0	1.8	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.3	1.4	2.4	1.4	2.5	1.4
009	10.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	12.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	14.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	16.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	18.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	20.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	21.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	23.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	25.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	27.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	29.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	31.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
	33.0	2.3	1.4	2.5	1.5	2.7	1.6	2.8	1.6	2.9	1.6	3.1	1.6	3.2	1.5
012	10.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	12.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	14.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	16.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	18.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	20.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	21.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	23.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	25.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	27.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	29.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	31.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
	33.0	3.0	2.0	3.3	2.1	3.5	2.2	3.6	2.2	3.7	2.2	3.9	2.2	4.1	2.1
015	10.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	12.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	14.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	16.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	18.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	20.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	21.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	23.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	25.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	27.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	29.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	31.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	33.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	35.0	3.6	2.4	4.0	2.6	4.2	2.7	4.5	2.8	4.5	2.7	4.7	2.7	5.0	2.6
	37.0	3.5	2.3	3.8	2.5	4.1	2.6	4.4	2.7	4.3	2.6	4.6	2.6	4.8	2.6
	39.0	3.4	2.3	3.7	2.4	4.0	2.6	4.2	2.6	4.2	2.6	4.5	2.5	4.7	2.5

Floor Standing Cabinet Type (MML-AP***4H-E)

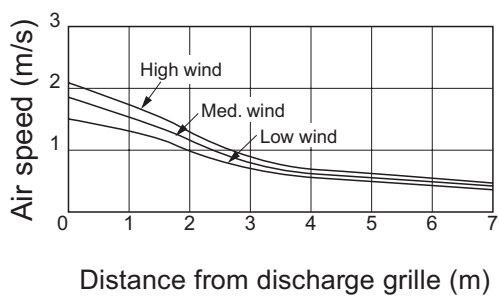
TC : Total capacity [kW]

SHC : Sensible capacity [kW]

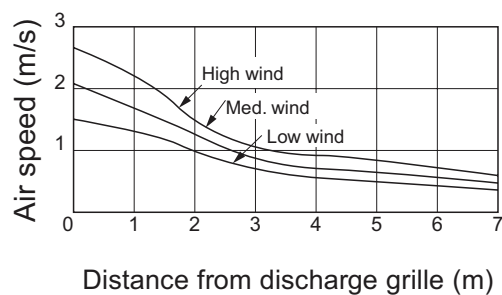
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	10.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	12.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	14.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	16.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	18.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	20.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	21.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	23.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	25.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	27.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	29.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	31.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	33.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
	35.0	4.6	3.1	5.1	3.3	5.4	3.5	5.6	3.5	5.8	3.5	6.1	3.5	6.4	3.4
024	37.0	4.5	3.0	4.9	3.2	5.3	3.4	5.4	3.4	5.6	3.4	5.9	3.4	6.2	3.3
	39.0	4.3	2.9	4.8	3.1	5.1	3.3	5.3	3.3	5.4	3.3	5.7	3.3	6.0	3.2
	10.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	12.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	14.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	16.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	18.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	20.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	21.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	23.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	25.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	27.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	29.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	31.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	33.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	35.0	5.8	4.0	6.4	4.2	6.9	4.5	7.1	4.5	7.3	4.5	7.7	4.5	8.1	4.4
	37.0	5.6	3.9	6.2	4.1	6.7	4.4	6.9	4.4	7.1	4.4	7.5	4.3	7.8	4.2
	39.0	5.5	3.8	6.1	4.0	6.5	4.2	6.7	4.2	6.9	4.2	7.3	4.2	7.6	4.1

7. Air throw distance chart

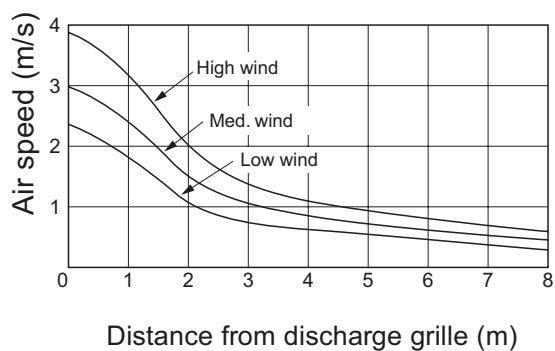
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MML-AP0124H-E, AP0154H-E

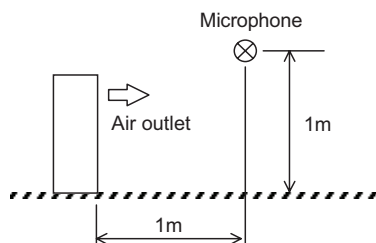


MML-AP0184H-E, AP0244H-E



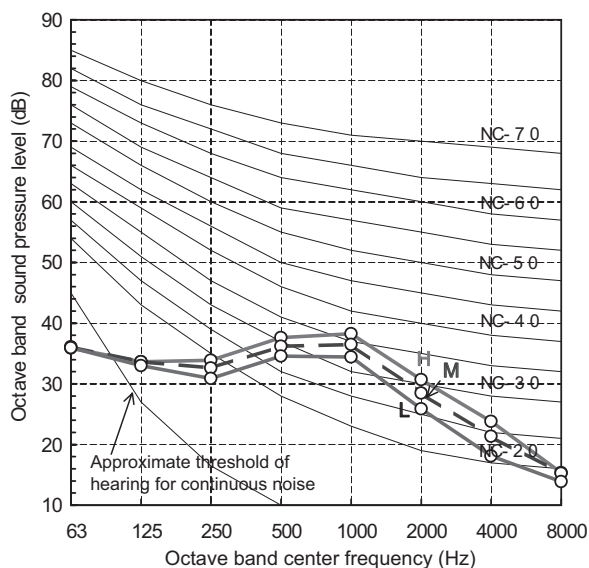
8. Sound characteristics (NC-Curve)

[Measuring location]



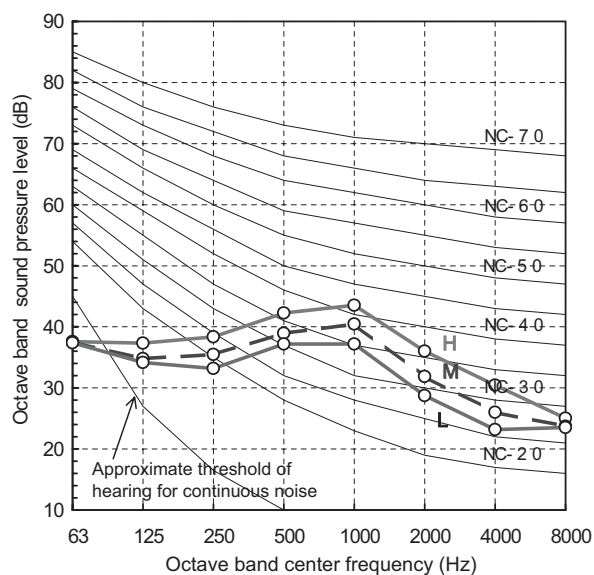
MML-AP0074H-E, AP0094H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	39	37	35



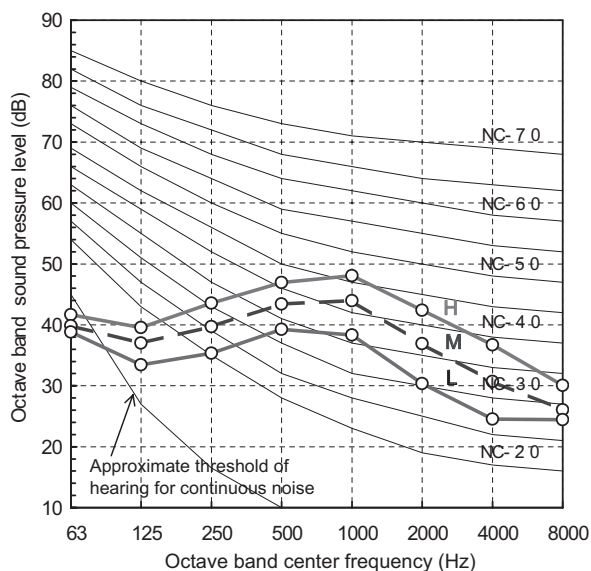
MML-AP0124H-E, AP0154H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	45	41	38



MML-AP0184H-E, AP0244H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	49	44	39



11-2-13. Floor Standing Type

Floor Standing Type

MMF-AP0154H-E / MMF-AP0184H-E
MMF-AP0244H-E / MMF-AP0274H-E
MMF-AP0364H-E / MMF-AP0484H-E
MMF-AP0564H-E



Contents

1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
5. Electrical characteristics
6. Sensible capacity table
7. AIR throw distance chart
8. Sound characteristics (NC-Curve)



1. Specifications

Floor Standing Type

Model name		MMF-	AP0154H-E	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E	AP0564H-E
Cooling/Heating capacity (Note 1)		(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Separate power supply for indoor units is required.)						
	Running current	(A)	0.67		0.88		1.29		1.60
	Power consumption	(kW)	0.150		0.190		0.280		0.350
	Power factor	(%)	97		94				95
	Starting current	(A)	0.90		1.10		1.70		2.10
Appearance			Silky shade (1Y 8.5/0.5)						
Outer dimension	Height x Width x Depth	(mm)	1750 x 600 x 210				1750 x 600 x 390		
Total weight		(kg)	48		49		65		
Heat exchanger			Finned tube						
Soundproof/Heat-insulating material			Non-flammable insulation						
Fan unit	Fan		Centrifugal fan						
	Standard air flow (High/Mid./Low)	(m³/h)	900/780/660		1,200/1,020/840		1,920/1,680/1,380		2,160/1,860/1,560
	Motor output	(W)	37		63		110		160
Air filter			Standard filter (Simple filter)						
Controller			Remote controller						
Connecting pipe	Gas side	(mm)	φ 12.7		φ 15.9				
	Liquid side	(mm)	φ 6.4		φ 9.5				
	Drain port (Nominal dia. mm)		20 (One side of male screw)						
Sound pressure level(Note 2)(High/Mid./Low) (dB(A))			46/43/38		49/45/40		51/48/44		54/50/46

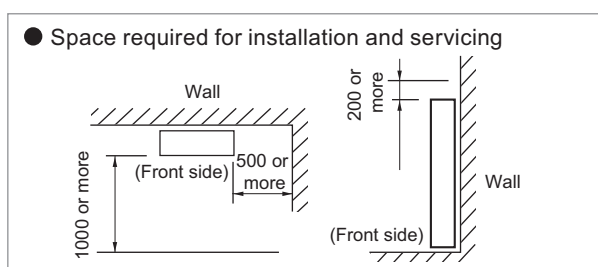
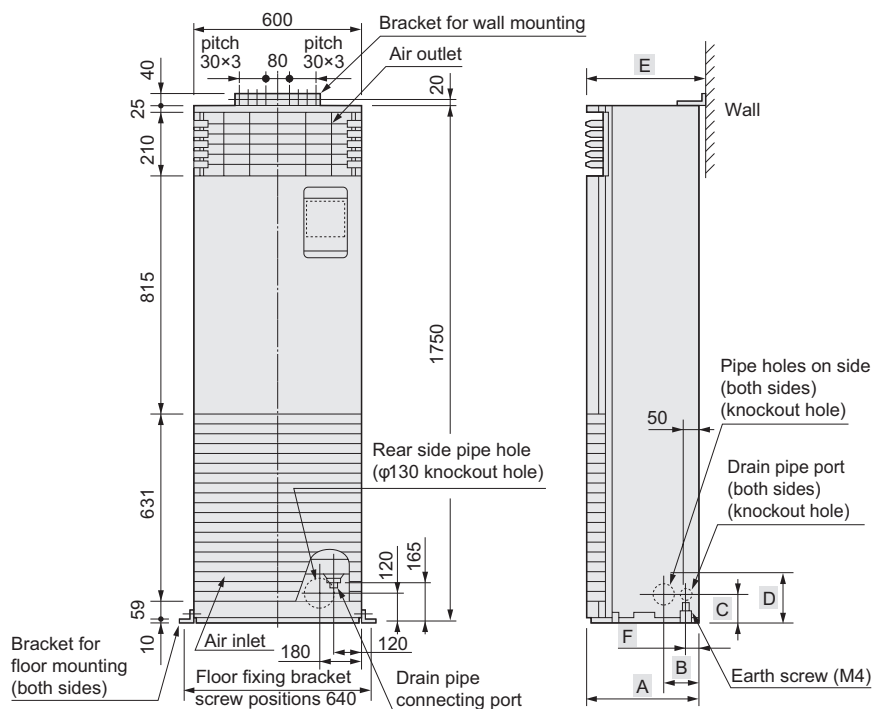
Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

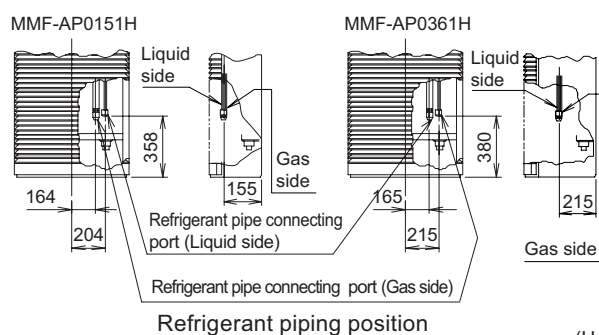
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

2. Dimension

MMF-AP0154H-E, AP0184H-E, AP0244H-E, AP0274H-E, AP0364H-E, AP0484H-E, AP0564H-E



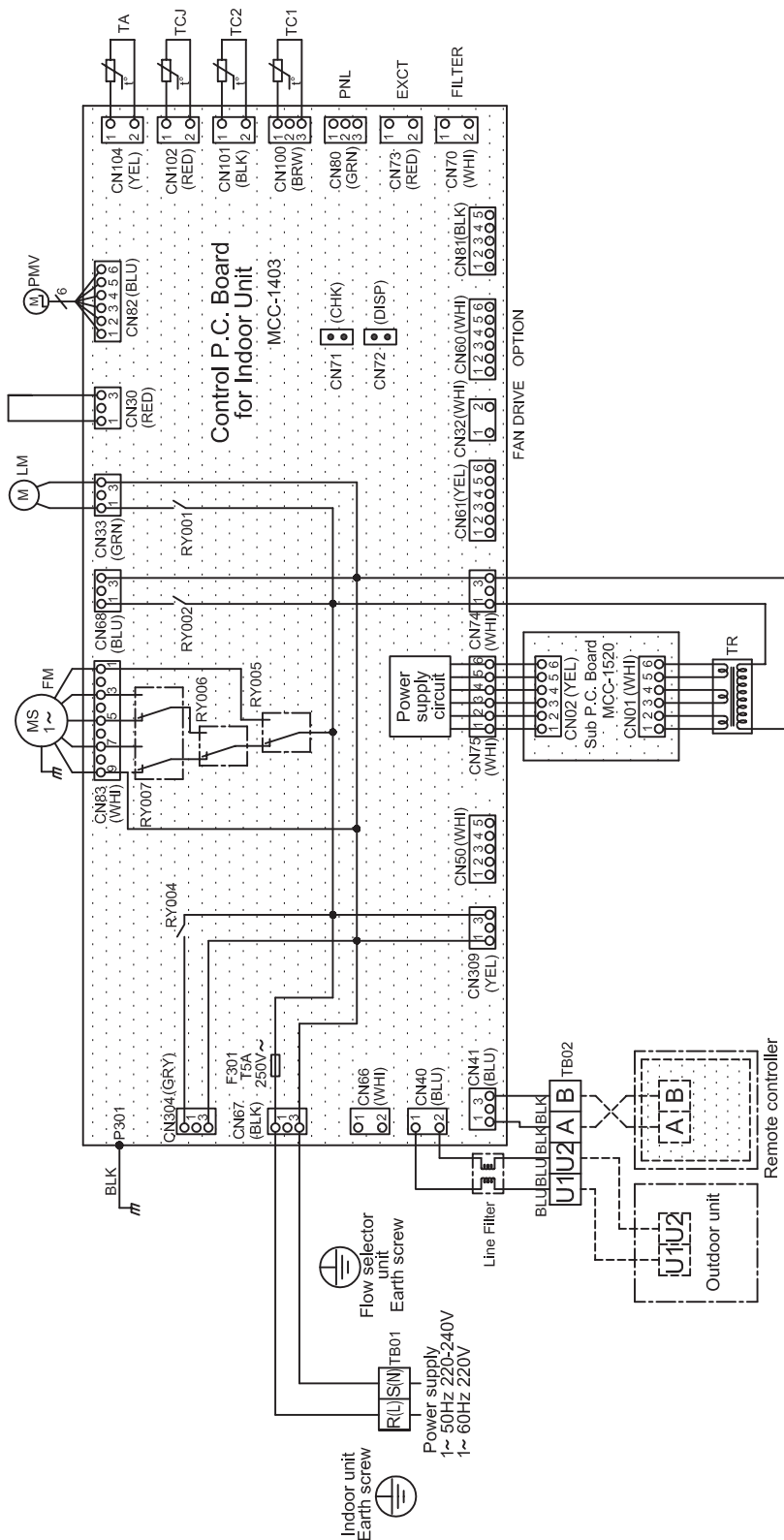
Model	MMD-	A	B	C	D	E	F
AP0154H-E to AP0274H-E		200	107	132	157	210	50
AP0364H-E to AP0564H-E		380	125	120	160	390	40



(Unit: mm)

3. Wiring diagram

MMF-AP0154H-E, AP0184H-E, AP0244H-E, AP0274H-E, AP0364H-E, AP0484H-E, AP0564H-E

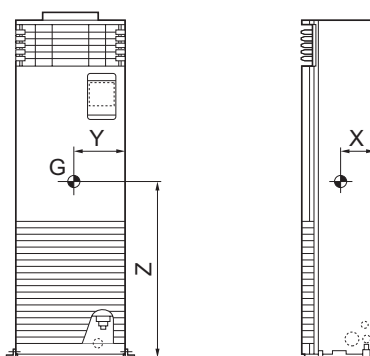


1. Broken line indicate the wiring at site.
Long dashed short dashed line indicate the accessories.
2. indicates the terminal block.
 indicates the connection terminal.
3. indicates the connector on the control P.C. board.
 indicates the protection ground.
4. indicates the control P.C. board.

Symbol	Parts Name
CN**	Connector
LM	Louver Motor
F301	Fuse
FM	Fan Motor
PMV	Pulse Motor Valve
RC	Running Capacitor
RY001	Louver Control Relay
RY005,006,007	Fan Motor Control Relay
TA	Indoor temp sensor
TB01,02,03	Terminal Block
TC1,TC2,TCJ	Temp sensor
TR	Transformer

COLOR IDENTIFICATION
RED : RED
WHI : WHITE
YEL : YELLOW
BLU : BLUE
BLK : BLACK
GRY : GRAY
PNK : PINK
ORN : ORANGE
BRW : BROWN
GRN : GREEN

Model name	X(mm)	Y(mm)	Z(mm)	Total weight(kg)
MMF-AP0154H-E MMF-AP0184H-E	90	290	880	48
MMF-AP0244H-E MMF-AP0274H-E				49
MMF-AP0364H-E MMF-AP0484H-E MMF-AP0564H-E	120	295		65



5. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
Floor Standing Type	MMF-AP0154H-E	230-1-50	198	264	0.037	0.77	0.96	15
	MMF-AP0184H-E	230-1-50	198	264	0.037	0.77	0.96	15
	MMF-AP0244H-E	230-1-50	198	264	0.063	1.01	1.27	15
	MMF-AP0274H-E	230-1-50	198	264	0.063	1.01	1.27	15
	MMF-AP0364H-E	230-1-50	198	264	0.110	1.48	1.85	15
	MMF-AP0484H-E	230-1-50	198	264	0.160	1.84	2.30	15
	MMF-AP0564H-E	230-1-50	198	264	0.160	1.84	2.30	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

6. Sensible capacity table

Floor Standing Type (MMF-AP***4H-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

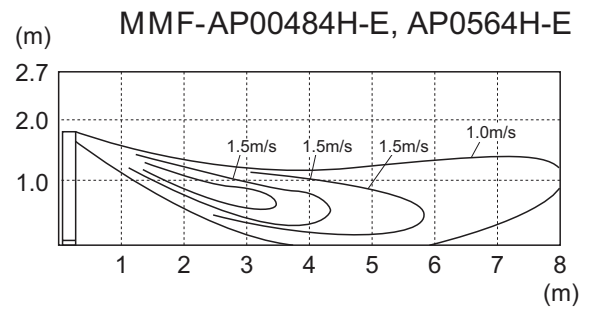
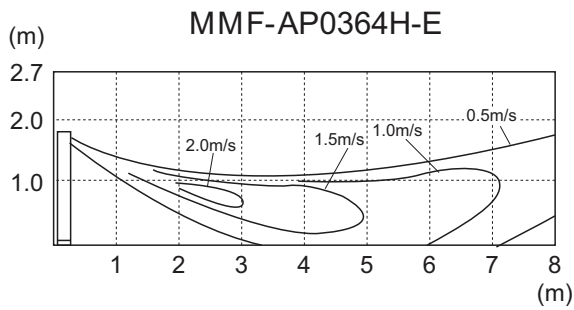
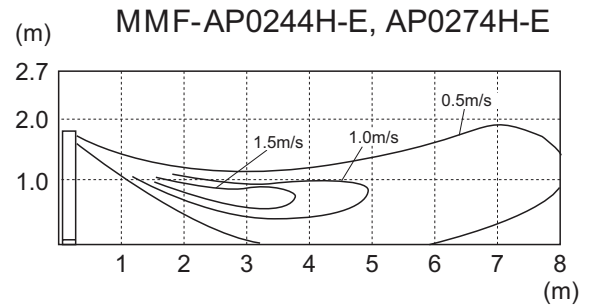
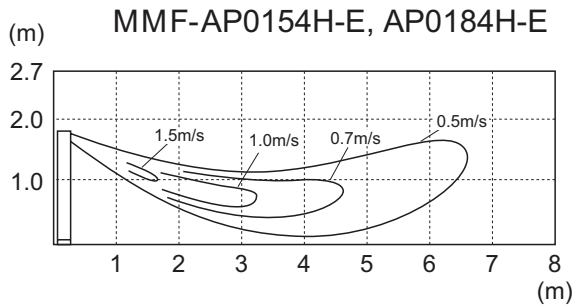
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	10.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	12.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	14.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	16.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	18.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	20.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	21.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	23.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	25.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	27.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	29.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	31.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	33.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
	35.0	3.7	3.0	4.1	3.2	4.4	3.4	4.5	3.4	4.6	3.4	4.9	3.4	5.1	3.3
018	10.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	12.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	14.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	16.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	18.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	20.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	21.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	23.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	25.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	27.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	29.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	31.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	33.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
	35.0	4.6	3.6	5.1	3.9	5.4	4.1	5.6	4.1	5.8	4.1	6.1	4.1	6.4	4.0
024	10.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	12.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	14.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	16.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	18.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	20.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	21.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	23.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	25.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	27.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	29.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	31.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	33.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
	35.0	5.8	4.7	6.4	5.0	6.9	5.3	7.1	5.3	7.3	5.3	7.7	5.3	8.1	5.1
027	10.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	12.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	14.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	16.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	18.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	20.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	21.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	23.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	25.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	27.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	29.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	31.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	33.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	35.0	6.6	5.2	7.3	5.6	7.8	5.9	8.0	5.9	8.2	5.9	8.7	5.8	9.1	5.7
	37.0	6.4	5.1	7.0	5.4	7.5	5.7	7.7	5.7	8.0	5.7	8.4	5.7	8.8	5.5
	39.0	6.2	4.9	6.8	5.2	7.3	5.6	7.5	5.6	7.8	5.6	8.2	5.5	8.6	5.4

Floor Standing Type (MMF-AP***4H-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

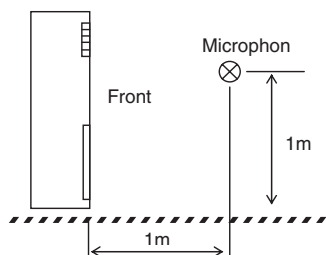
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
036	10.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	12.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	14.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	16.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	18.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	20.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	21.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	23.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	25.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	27.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	29.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	31.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	33.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
	35.0	9.2	7.1	10.2	7.6	10.9	8.0	11.2	8.0	11.5	8.0	12.2	7.9	12.8	7.7
048	37.0	8.9	6.9	9.8	7.3	10.5	7.8	10.8	7.7	11.2	7.7	11.8	7.7	12.4	7.5
	39.0	8.7	6.7	9.6	7.1	10.2	7.6	10.5	7.5	10.9	7.5	11.5	7.5	12.0	7.3
	10.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	12.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	14.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	16.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	18.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	20.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	21.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	23.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	25.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	27.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	29.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	31.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	33.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
056	35.0	11.5	8.8	12.7	9.3	13.6	9.9	14.0	9.9	14.4	9.9	15.3	9.8	16.0	9.6
	37.0	11.1	8.5	12.3	9.0	13.1	9.6	13.6	9.6	14.0	9.6	14.8	9.5	15.4	9.3
	39.0	10.8	8.3	12.0	8.8	12.8	9.3	13.2	9.3	13.6	9.3	14.4	9.2	15.0	9.0
	10.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	12.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	14.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	16.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	18.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	20.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	21.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	23.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	25.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	27.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	29.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	31.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	33.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	35.0	13.1	10.1	14.5	10.8	15.5	11.4	16.0	11.4	16.5	11.4	17.4	11.3	18.2	11.0
	37.0	12.7	9.8	14.1	10.4	15.0	11.1	15.5	11.0	16.0	11.0	16.9	10.9	17.7	10.7
	39.0	12.4	9.5	13.7	10.1	14.6	10.8	15.1	10.7	15.5	10.7	16.4	10.6	17.2	10.4

7. Air throw distance chart



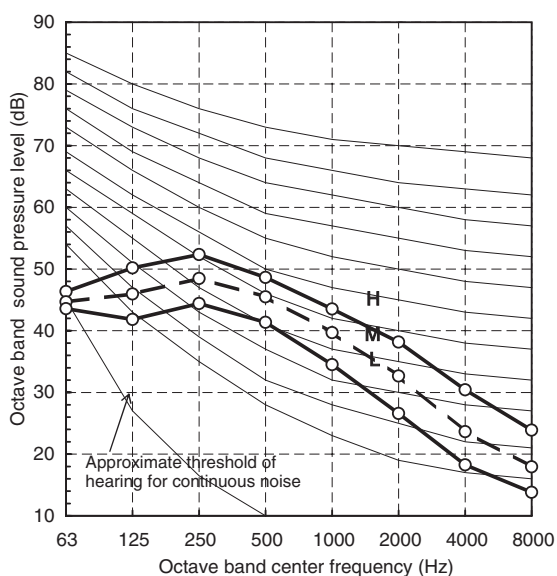
8. Sound characteristics (NC Curve)

Measuring location



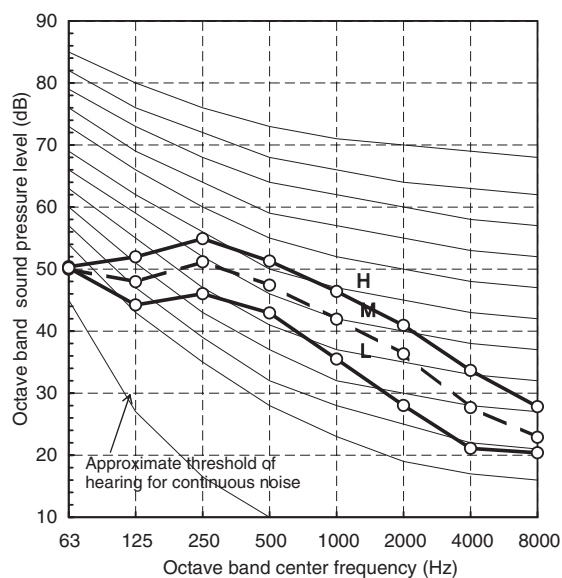
MMF-AP0154H-E, AP0184H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	46	43	38



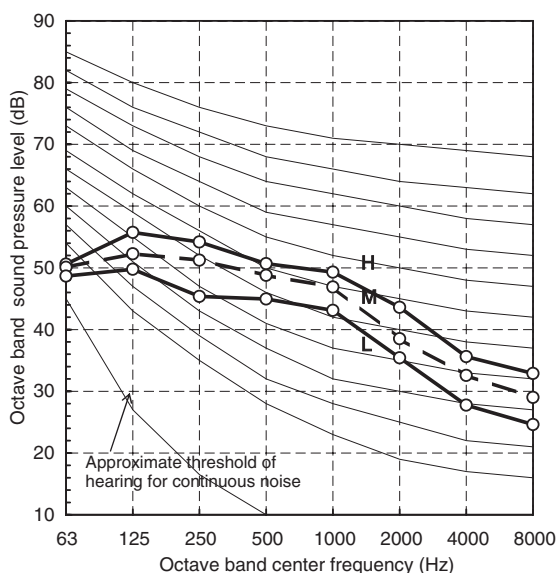
MMF-AP0244H-E, AP0274H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	49	45	40



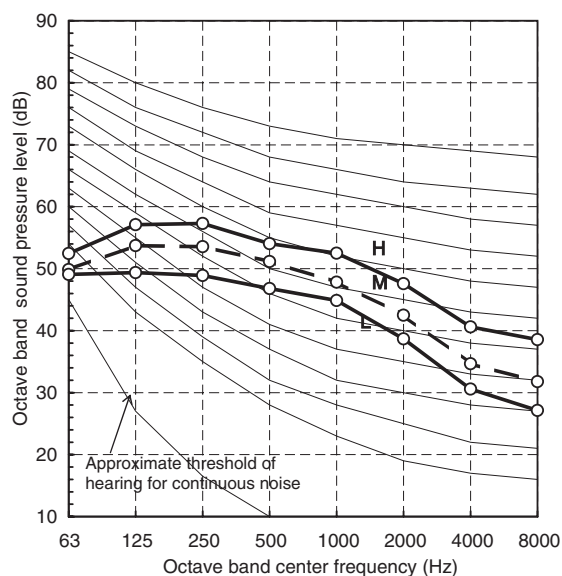
MML-AP0364H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	51	48	44



MML-AP0484H-E, AP0564H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	54	50	46



11-2-14, Fresh Air Intake Indoor Unit Type

Fresh Air Intake Indoor Unit Type

Indoor Unit

MMD-AP0481HFE

MMD-AP0721HFE

MMD-AP0961HFE



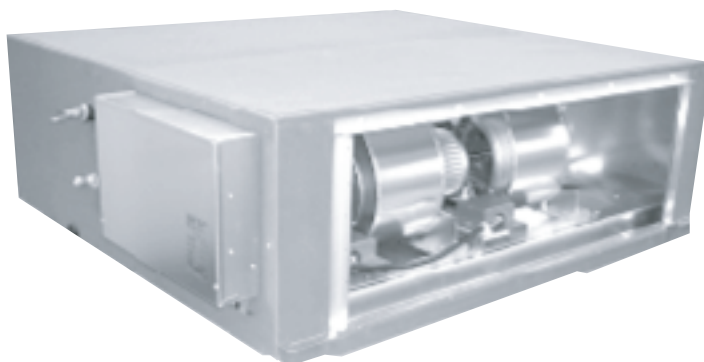
Contents

1. System summary
2. Specifications
3. Dimensions
4. Wiring diagram
5. Center of Gravity
6. Electrical characteristics
7. Fan characteristics
8. Sound characteristics (NC Curve)

1. System summary

■ Fresh Air Intake Indoor Unit Type

1. Outline of fresh air intake unit



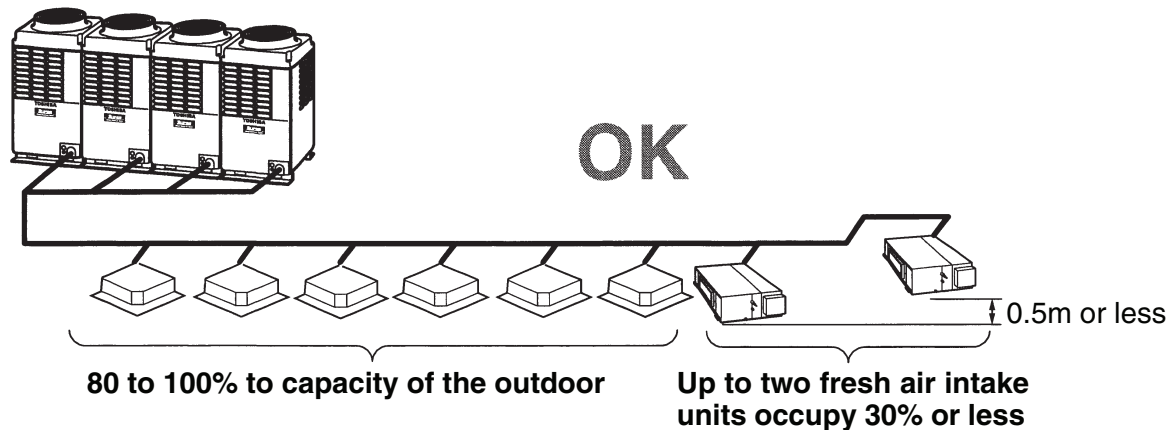
- **Type: Concealed Duct High Static Pressure type**
Three models (5HP, 8HP, 10HP) are prepared.
- **Connectable outdoor unit**
Outdoor unit of SMMS and SMMS-i series.
- **Corresponding system**
Corresponds to a system in which there are the fresh air intake units and the indoor air conditioners.
(For the fresh air intake units, up to 2 units for one system and also within 30% to capacity of the connectable indoor air conditioners are allowed.)
- **Definition**
The fresh air intake unit means an air controller for taken-in fresh air.
Intake of the fresh air often influences on the system so that the normal control of the air conditioner becomes difficult or gives a large load upon air controller and cooling performance.
Therefore it is frequently adopted to handle the fresh air to a certain condition before the fresh air will enter in the main air conditioner.
This handling device is called a fresh air intake unit.

NOTE:

The Fresh Air Intake unit is an air conditioner provided to handle the fresh air load and is not to control the room temperature. For correspondence to the load of the indoor air controller, set an air conditioner separately.

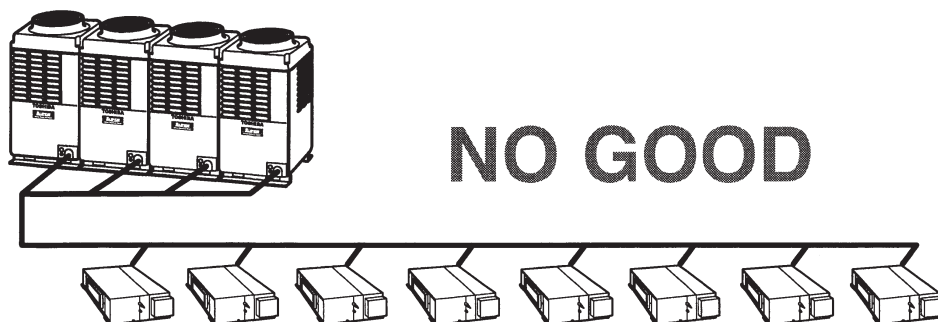
2. System able to be combined

The fresh air intake unit is connectable to S-MMS (Super Modular Multi system). However this is not connectable to S-HRM (Super Heat Recovery Multi system).

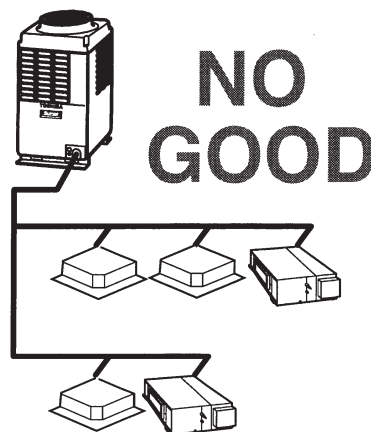
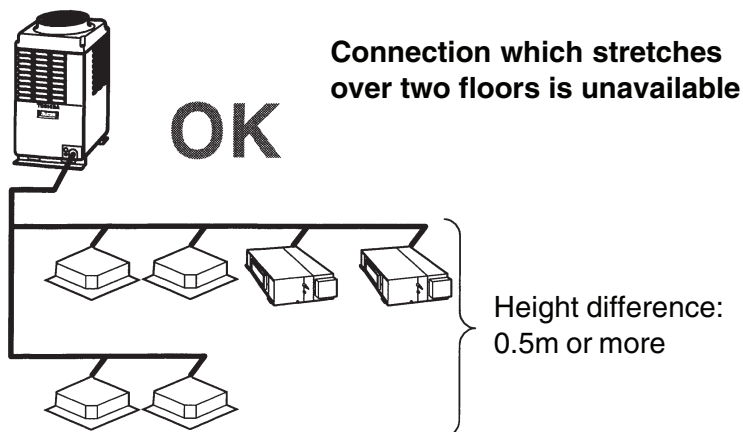


Keep the height difference between the fresh air intake units to 0.5m or less.

- The fresh air intake unit is usually used together with the indoor units on one line of the multi system. The fresh air intake unit only cannot be connected.

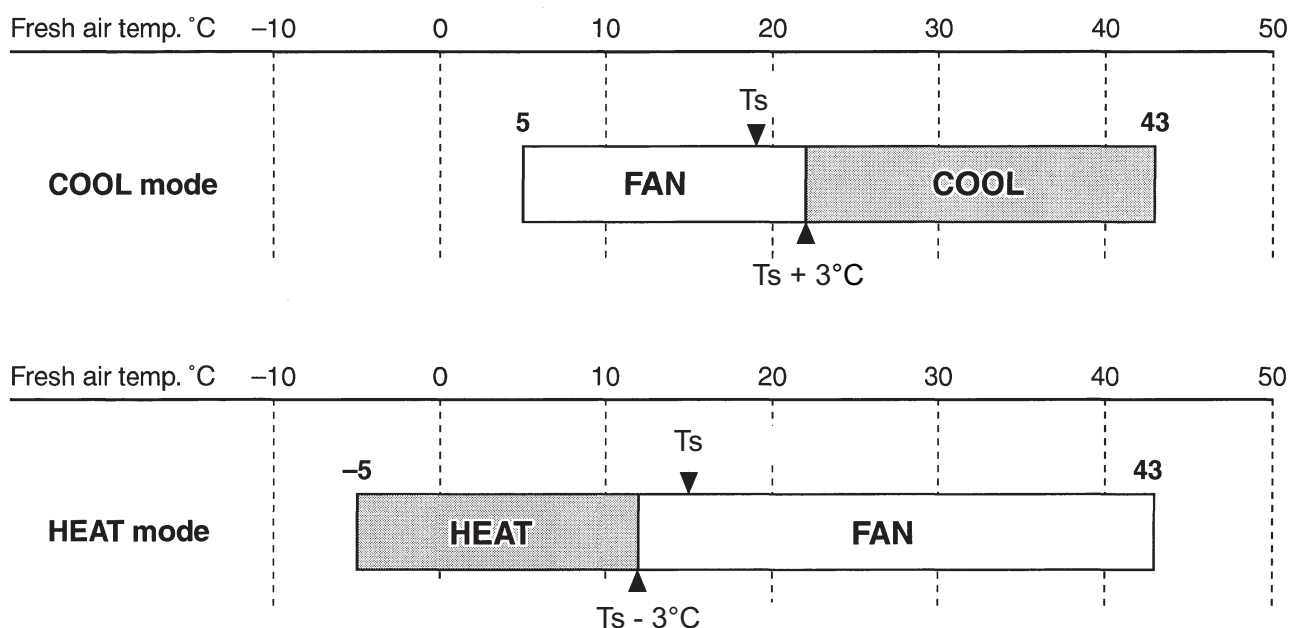


- The total capacity of the indoor units and the fresh air intake units is restricted to 80% to 100% against the capacity of the outdoor units. (This restriction should be strictly kept for correct control of the refrigerant.)
- Up to two fresh air intake units can be connected on one line of the multi system. The allowable total capacity of the two fresh air intake units shall be 30% or less against the total capacity of the indoor units (including the fresh air intake units).



3. Use Conditions

- In COOL mode, if temperature of the fresh air is under the setup temp. +3°C, FAN status is automatically made. When temperature of the fresh air is under 19°C, FAN status is also made regardless of the setup temperature.
- In HEAT mode, if temperature of the fresh air is over the setup temp. -3°C, FAN status is automatically made. When temperature of the fresh air is over 15°C, FAN status is also made regardless of the setup temperature.



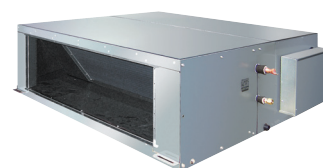
• Operable mode and discharge temp setup range

Operation mode	At shipment from factory	Setup range
COOL	18°C	16 to 27°C
HEAT	25°C	16 to 27°C

• Special mentions

1. The fan operation of the Fresh Air Intake unit stops during defrosting. However the fan operation is enabled to continue by selection.
2. When a central controller is used, divide zone setup of indoor air conditioner and fresh air intake unit.
3. The standard is to control the discharge temperature. However the priority is given to the capacity control for the indoor air conditioner in a system in which the normal indoor air conditioner concurrently operated.
4. The fresh air intake unit cannot be connected with remote controller group of the indoor air conditioner.
5. In heating operation, if the temperature is below -5°C , the operation stops automatically. (FAN stop) (To protect the refrigerant cycle)
6. In cooling operation, if the temperature is below 5°C , the operation stops automatically. (FAN stop)

2. Specifications



■ Fresh Air Intake Indoor Unit Type

Model name				MMD-AP0481HFE	MMD-AP0721HFE	MMD-AP0961HFE
Cooling/Heating capacity (Note 1) (kW)				14.0/8.9	22.4/13.9	28.0/17.4
Electical characteristics	Power supply			1 phase 50Hz 230V (220-240V)		
	Running current (A)			1.43	2.52	2.73
	Power consumption (kW)			0.28	0.45	0.52
	Starting current (A)			3.50	7.00	7.00
Outer dimension	Main unit	Height (mm)	492			
		Width (mm)	892	1,392		
		Depth (mm)	1,262			
Total weight	Main unit (kg)			93	144	
Heat exchanger				Finned tube		
Soundproof / Heat-insulating material				Non-flammable insulation		
Fan unit	Fan			Centrifugal fan		
	Standard air flow (m³/h)			1,080	1,680	2,100
	Motor (W)			160	160 x 2	
	External static pressure (factory setting)			210	165	190
	External static pressure			170-210-230	140-165-180	160-190-205
	Air flow limit (m³/h)			756	1,176	1,470
	Lower limit/Upper limit					
Air filter				Option or field supply		
Controller				Wired remote controller		
Connecting pipe	Gas pipe (mm)			15.9	22.2	
	Liquid pipe (mm)			9.5	12.7	
	Drain pipe			R1		
Sound pressure level (Note 2) (dB(A)) (High/Med./Low)				45/43/41	46/45/44	
Sound power level (High/Med./Low) (dB(A))				65/63/61	66/65/64	
Operation range	Cooling (Note 3) (°C)			5 - 43		
	Heating (Note 4) (°C)			-5 - 43		

* The setting temperature is 16 - 27°C(standard FCU... 18 - 29°C).

* An option humidifier is not available with Fresh Air Intake Indoor unit.

* Height difference between Fresh Air Intake Indoor units must be within 0.5m.

Height difference between Fresh Air Intake Indoor unit and standard FCU must be within 30m.

Note 1: Rated conditions Cooling : Outdoor air temperature 33°C DB/28°C WB setting temperature 18°C
 Heating : Outdoor air temperature 0°C DB/-2.9°C WB setting temperature 18°C
 Piping : Length 7.5m / Height 0m

Note 2: The sound level are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become large than the indicated values due to the effects of external sound.

Note 3: * When supply air temperature is “setting temperature + 3°C” or less, Fresh Air Intake unit operates as FAN mode.

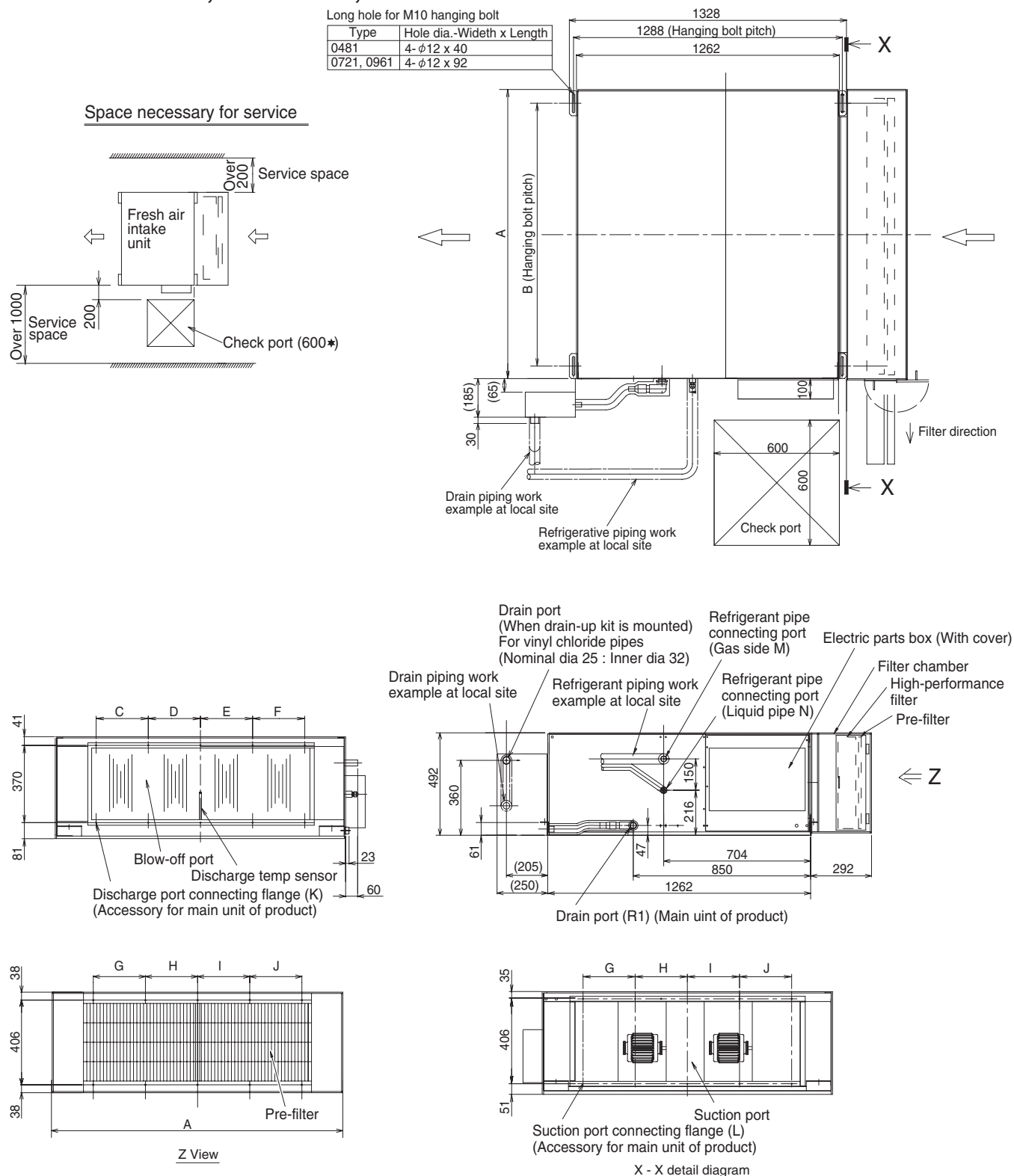
* When supply air temperature is 19°C or less, Fresh Air Intake Indoor unit operates as FAN mode.

Note 4: * When supply air temperature is “setting temperature - 3°C” or over, Fresh Air Intake unit operates as FAN mode.

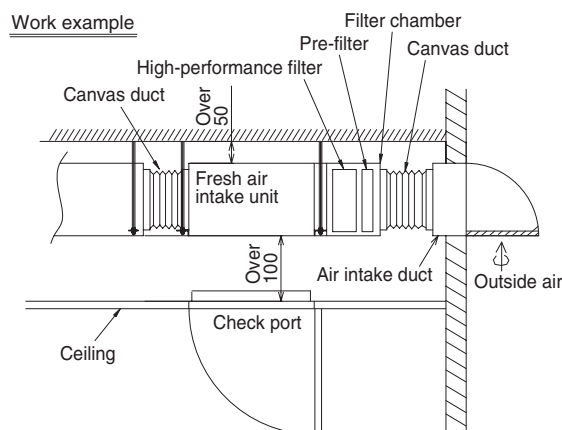
3. Dimensions

Fresh Air Intake Indoor Unit Type (MMD-AP***HFE)

MMD-AP0481HFE, AP0721HFE, AP0961HFE



AP0961HFE	1392	1260	250	250	250	250	250	250	250	250	10-M6	10-M6	ϕ 22.2 brazing	ϕ 12.7 flare
AP0721HFE	1392	1260	250	250	250	250	250	250	250	250	10-M6	10-M6	ϕ 22.2 brazing	ϕ 12.7 flare
AP0481HFE	892	810	215	107.5	107.5	215	—	250	250	250	8-M6	6-M6	ϕ 15.9 flare	ϕ 9.5 flare
Model MMD-	A	B	C	D	E	F	G	H	I	J	K	L	M	N

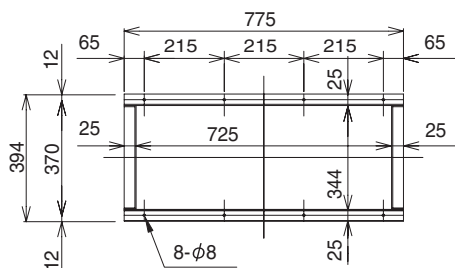


<Installation Notice>

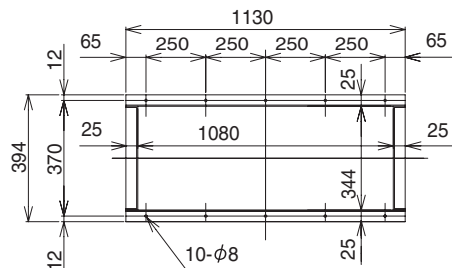
- 1 The check port should be 600 x 600mm.
- 2 A slope the piping outside of the unit downward at 1/100.
Be sure to do heat insulating to the connecting part with the indoor unit. In complete heat insulating may cause dewing.
- 3 Check the water drainage is surely performed at the trial operation.
- 4 Do not install the air conditioner in a salty place such as seaside area and a place where sulfurous gas generated such as in a spa.
- 5 Please clean the drain plate before the season of cooling air conditioning.
Water overflows from the drain plate when the drain plate and the drain port are dirty, and the ceiling might be wet.
- 6 The air filter is not built into the Fresh Air intake indoor unit.
Please remove the dust that enters from air by installing optional Filter chamber, Pre-filter, and High Efficiency Filter.
If no air filter is installed, dust will collect in the heat exchanger, which may cause the air conditioner to fail or to leak. (local procure)
- 7 Place where the unit can be installed horizontally.
- 8 Set the canvas duct at air inlet port and air supply port. It is to avoid conveyance of vibration, abnormal resonance sound and also to make easy the disassembly of the main unit in service time.
- 9 Be sure to connect the wire and connection cable while matching the terminal.
Please refer to the wiring diagram for details.
- 10 Please note that the size is different because of MMD-AP0481HFE and MMD-AP0721HFE/MMD-AP0961HFE in the electric part box.
- 11 The heat insulator is pasted to externals of the main body of the product. (Bottom board thickness : 16mm, other thickness : 6mm)
- 12 Be sure to set the duct at air filter with descending inclination because the suction duct of this unit is exposed to outdoors and therefore rainwater, leaves and birds are easy to enter in if it is set horizontally.
Attaching wire netting and others to end of the suction duct is also recommended.
- 13 Set the air inlet duct at descending inclination so that water can be drained even if rainwater enters in.
- 14 The balloon entrance connection flange and the inhalation mouth connection flange are installed in the main body of the product.
Please use it detaching it when you connect the duct.
Please obtain Filter chamber directly in the main body of the product when you install Filter chamber and obtain installation Air intake port connecting flange for C side of A.
- 15 Connect the ducts directly so that the ducts do not weight on the main unit.
Moreover, please do not damage, and do not knock down air supply temperature sensor when you connect the air supply duct.
- 16 Be sure to apply heat insulation for the duct to prevent dewing.
Especially, when it is inhaled to heat it, the dewing on the surface of the outside of the duct because cold air enters.
Please put the heat insulator.
- 17 When installing the drain pump and filter chamber sold separately, refer to attachment installation manual.

Discharge port connecting flange

MMD-AP0481HFE

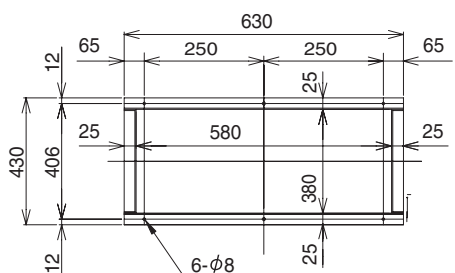


MMD-AP0721HFE, AP0961HFE

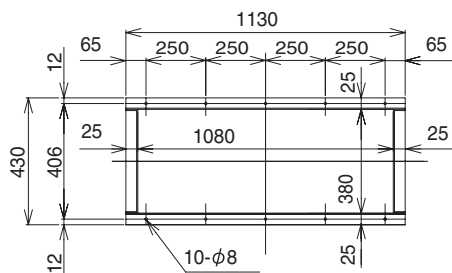


Suction port connecting flange

MMD-AP0481HFE



MMD-AP0721HFE, AP0961HFE



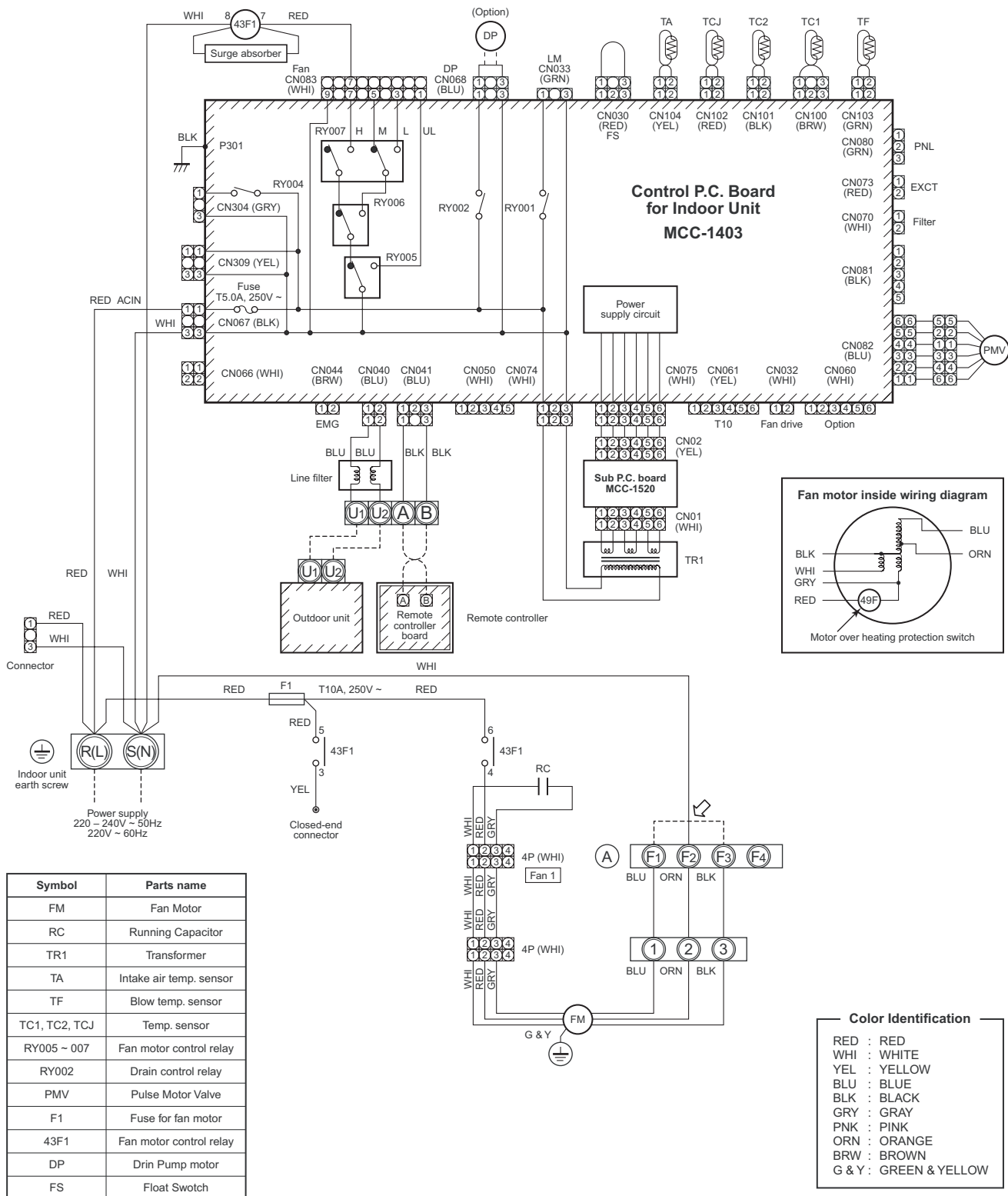
NOTE 1)

The left figure shows MMD-AP0721HFE / AP0961HFE.

For MMD-AP0481HFE, one fan motor and one fan are provided.

4. Wiring diagrams

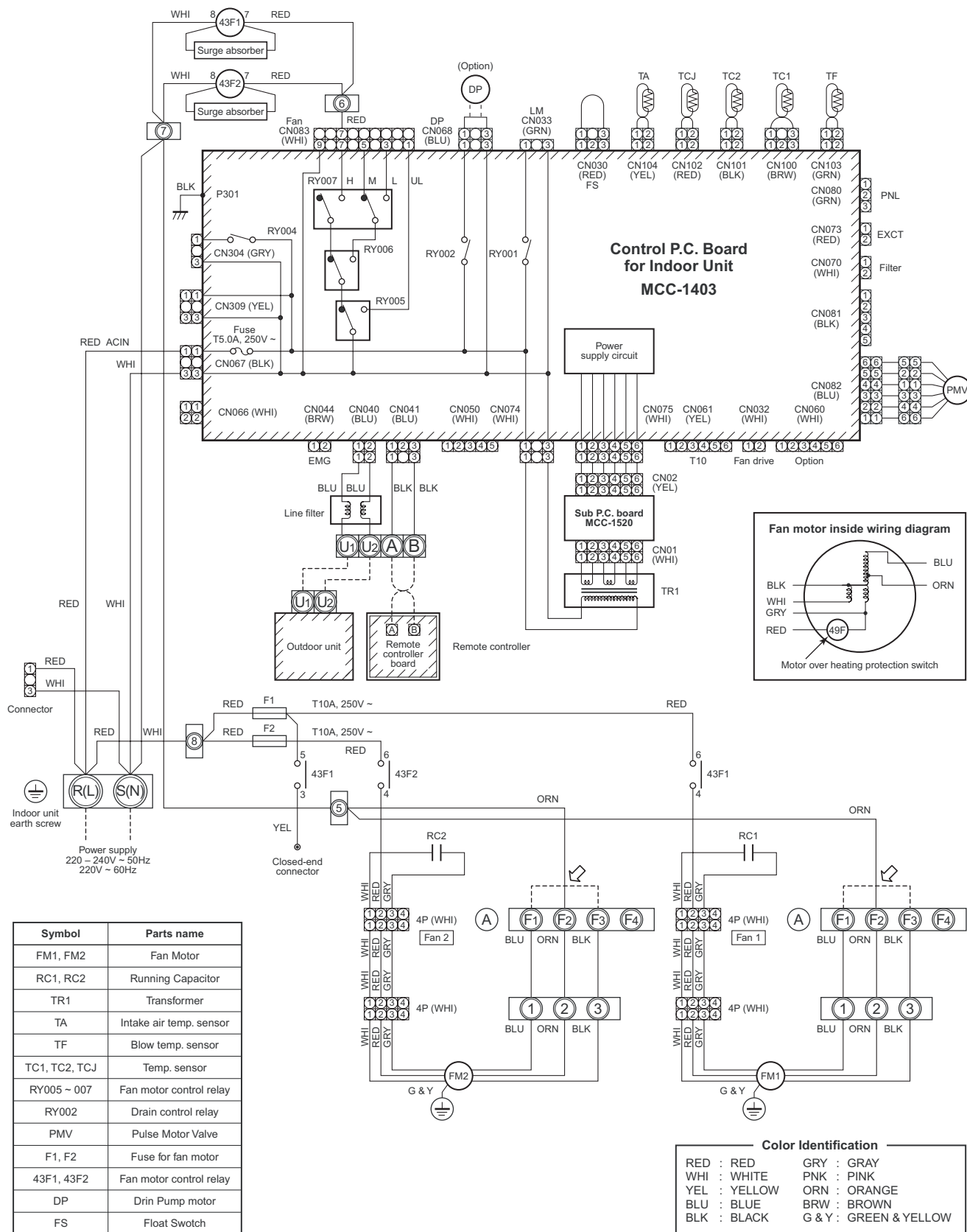
Model: MMD-AP0481HFE



- ① indicates the terminal block.
Latter at inside indicates the terminal number.
- A dotted line and broken line indicate the wiring at site.
- ▨ indicates the control P.C. board.
- When installing the drain pump connect the float switch connector to CN030 connector.
- Ⓐ position is connected to terminal block when change to static pressure.
Exchange the lead wire of arrow (↗) position after the terminal number as figure and lead wire's color of fan motor.

Terminal block No.	Fan motor wiring	Note
F1 (Low static pressure tap)	Blue (50/60Hz)	
F2 (Intermediate static pressure tap)	Orange (50/60Hz)	At shipment from factory
F3 (High static pressure tap)	Black (50/60Hz)	
F4	—	—

Models: MMD-AP0721HFE and MMD-AP0961HFE



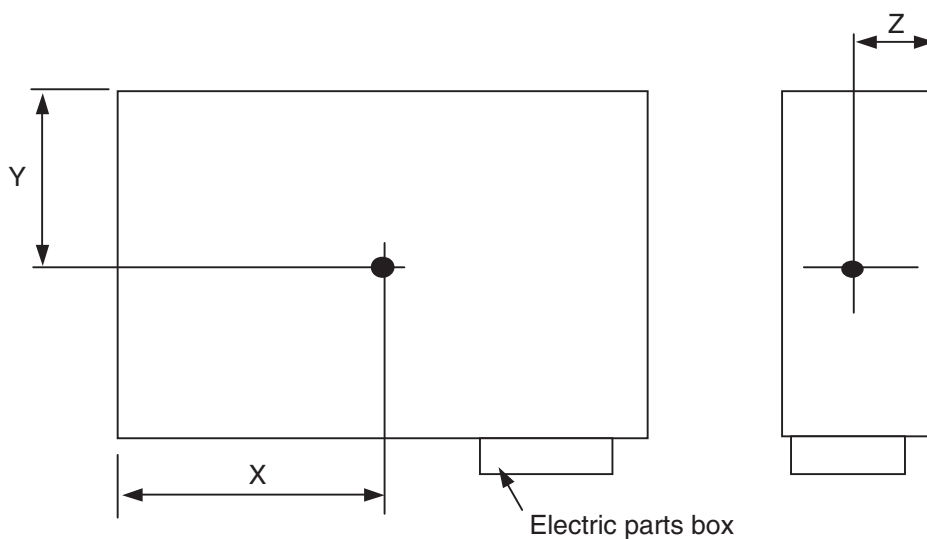
- ⊙ indicates the terminal block.
Latter at inside indicates the terminal number.
- A dotted line and broken line indicate the wiring at site.
- ▨ indicates the control P.C. board.
- When installing the drain pump connect the float switch connector to CN030 connector.
- Ⓐ position is connected to terminal block when change to static pressure.
Exchange the lead wire of arrow (↗) position after the terminal number as figure and lead wire's color of fan motor.

Terminal block No.	Fan motor wiring	Note
F1 (Low static pressure tap)	Blue (50/60Hz)	At shipment from factory
F2 (Intermediate static pressure tap)	Orange (50/60Hz)	
F3 (High static pressure tap)	Black (50/60Hz)	
F4	—	—

5. Center of gravity

■ Fresh Air Intake Indoor Unit Type

Model name MMD-	X (mm)	Y (mm)	Z (mm)	Weight (kg)
AP0481HFE	670	480	220	93
AP0721HFE	670	770	220	144
AP0961HFE				



6. Electrical characteristics

■ Fresh Air Intake Indoor Unit Type

Model name	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power supply	
		Min.	Max.	kW	FLA	MCA	MOCP
MMD-AP0481HFE	230-1-50	198	264	0.16	0.28	0.35	15
MMD-AP0721HFE		198	264	0.16 x 2	0.45	0.56	15
MMD-AP0961HFE		198	264	0.16 x 2	0.52	0.65	15

MCA : Minimum Circuit Amps

MOCP : Maximum Overcurrent Protection(Amps)

FLA : Full load Amps

kW : Fan Motor Rated Output (kW)

7. Fan characteristics

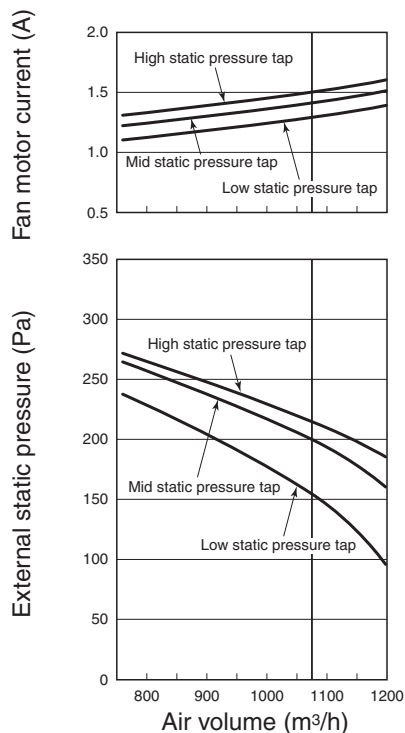
■ Fresh Air Intake Indoor Unit Type

<220V>

50Hz

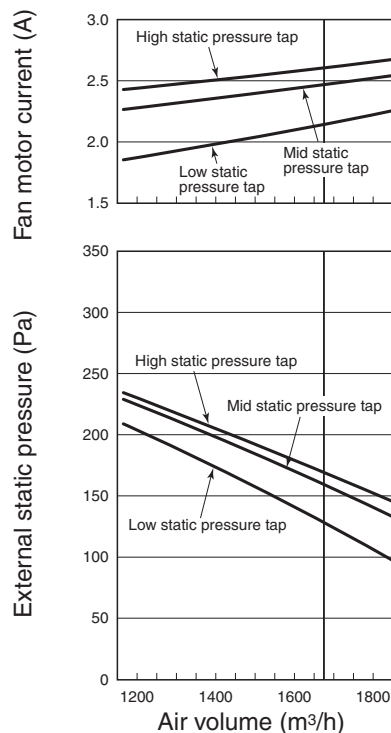
MMD-AP0481HFE (5HP)

Standard air volume: 1080m³/h



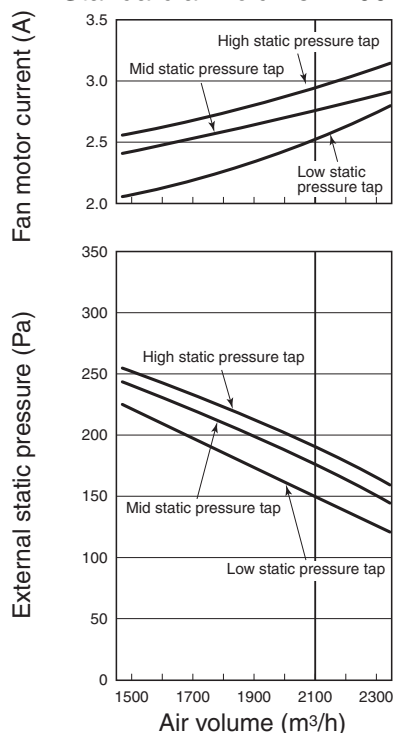
MMD-AP0721HFE (8HP)

Standard air volume: 1680m³/h



MMD-AP0961HFE (10HP)

Standard air volume: 2100m³/h

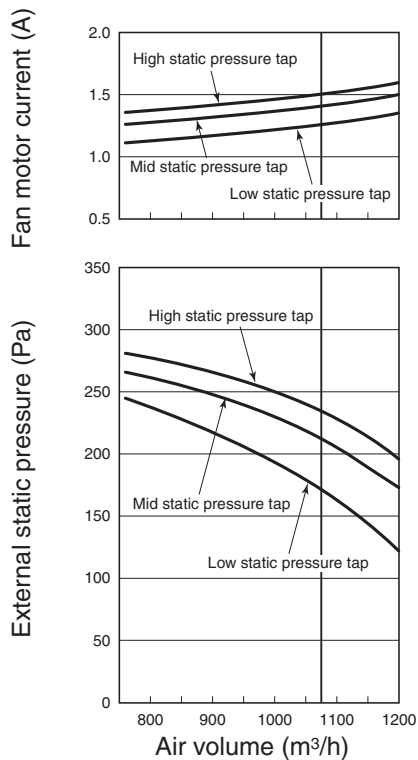


<230V>

50Hz

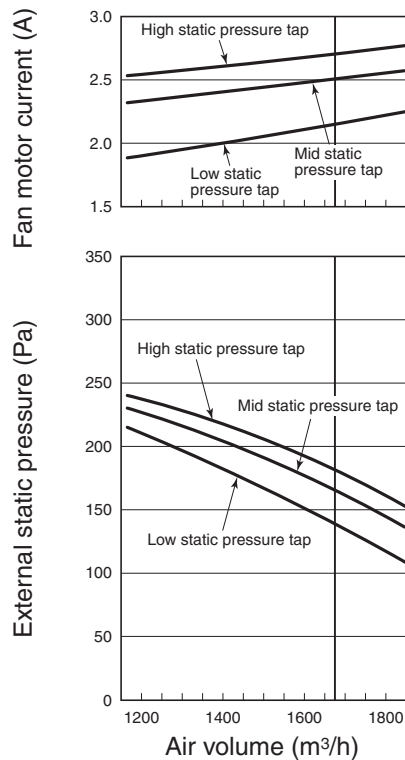
MMD-AP0481HFE (5HP)

Standard air volume: 1080m³/h



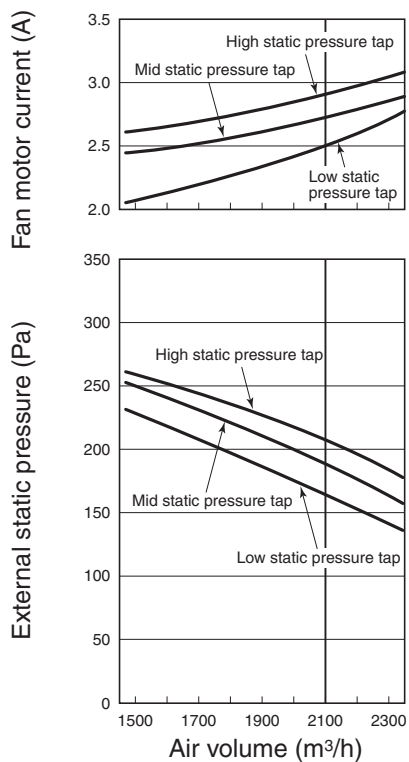
MMD-AP0721HFE (8HP)

Standard air volume: 1680m³/h



MMD-AP0961HFE (10HP)

Standard air volume: 2100m³/h

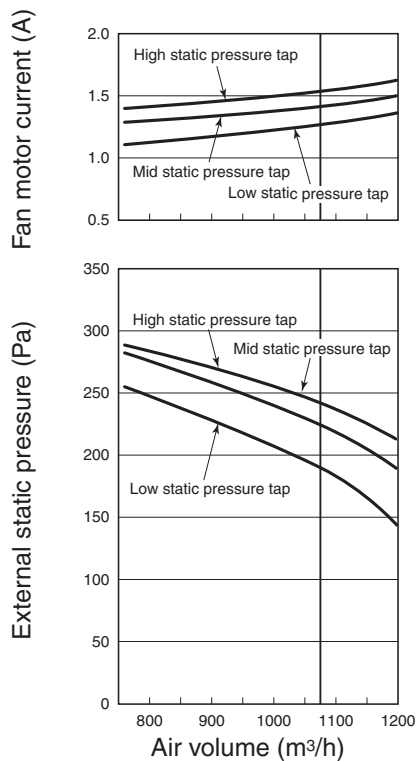


<240V>

50Hz

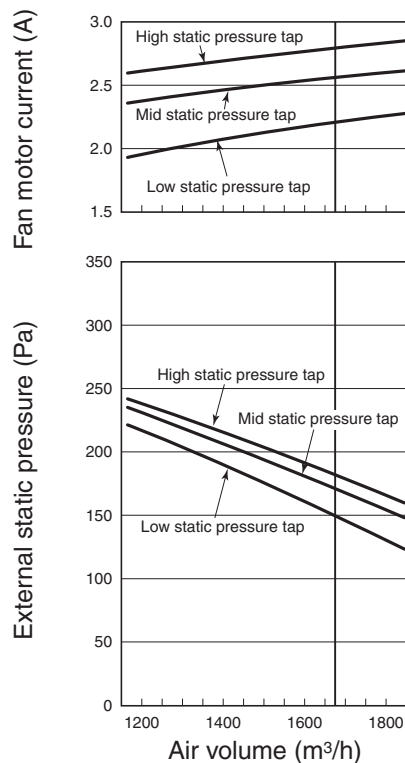
MMD-AP0481HFE (5HP)

Standard air volume: 1080m³/h



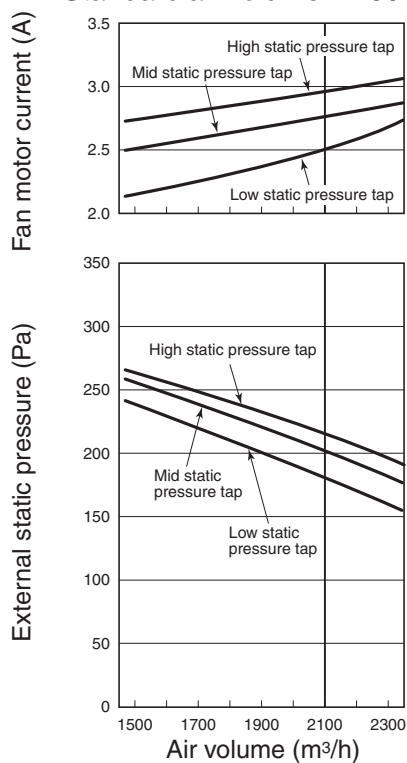
MMD-AP0721HFE (8HP)

Standard air volume: 1680m³/h



MMD-AP0961HFE (10HP)

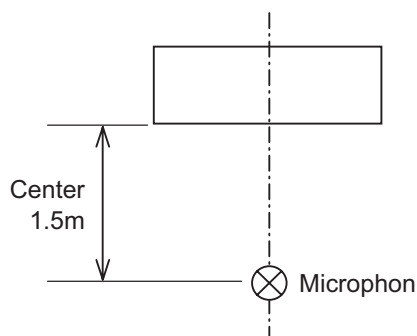
Standard air volume: 2100m³/h



8. Sound characteristics (NC Curve)

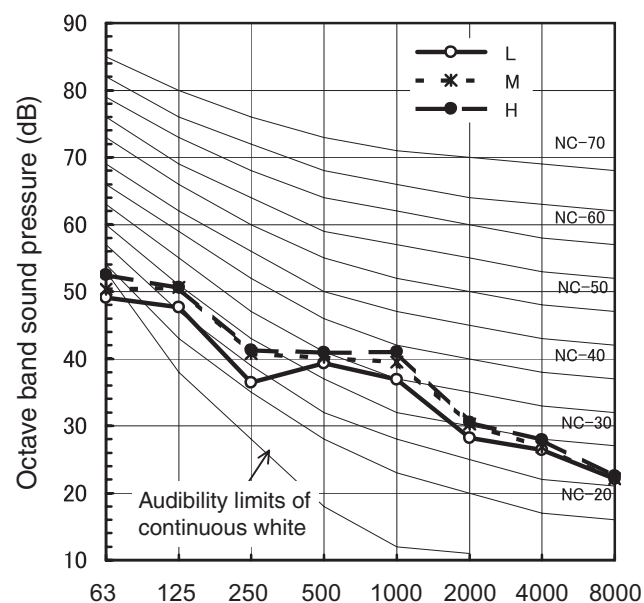
■ Fresh Air Intake Indoor Unit Type

Measuring



MMD-AP0481HFE

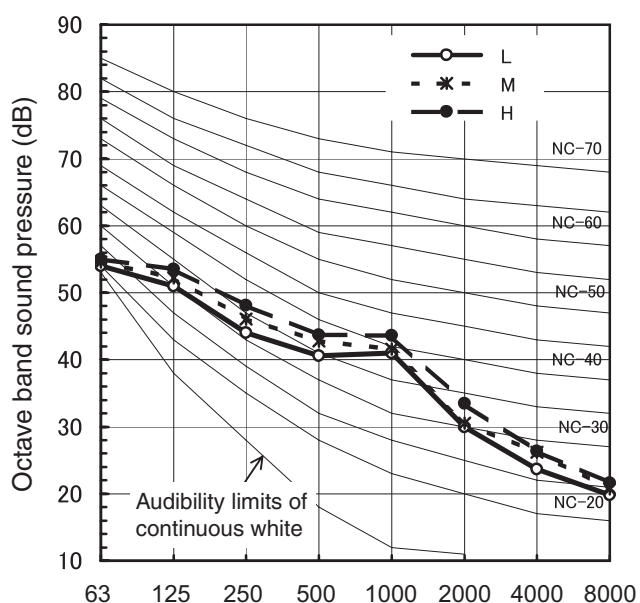
Fan tap	H	M	L
Sound pressure level (dB(A))	45	43	41



MMD-AP0721HFE

MMD-AP0961HFE

Fan tap	H	M	L
Sound pressure level (dB(A))	46	45	44



Octave band center frequency (Hz)

11-2-15. Console Type

Console Type

MML-AP0074NH-E
MML-AP0094NH-E
MML-AP0124NH-E
MML-AP0154NH-E
MML-AP0184NH-E



Contents

1. Specifications
2. Dimensions
3. Center of Gravity
4. Electrical characteristics
5. Sensible capacity table
6. Wiring diagram
7. Air throw distance chart
8. Sound characteristics (NC-Curve)
9. Accessories

1. Specifications

Model name		MML-	AP0074NH-E	AP0094NH-E	AP0124NH-E	AP0154NH-E	AP0184NH-E
Cooling / Heating capacity (Note 1)		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3
Electrical Characteristics	Power Supply	1 Phase 50Hz 230V (220-240V) (Separate power supply for indoor units is required.)					
	Running current	(A)	0.20	0.20	0.23	0.29	0.42
	Power consumption	(kW)	0.021	0.021	0.025	0.034	0.052
	Starting current	(A)	0.26	0.26	0.30	0.38	0.55
Appearance	Suction grille and side panel	Moon white					
	Discharge-grille	Moon white					
	Bottom surface	Moon white					
Dimension	Height	(mm)	600				
	Width	(mm)	700				
	Depth	(mm)	220				
Total weight		(kg)	17				
Heat exchanger		Finned tube					
Soundproof / Heat-insulating material		Foamed polystyrene , Polyethylene					
Fan unit	Fan	Turbo fan					
	Standard air flow (High/Mid/Low)	(m³/h)	510/366/282	510/366/282	552/408/324	624/468/384	726/528/426
	Motor output	(W)	41				
Air filter		Standard filter attached					
Controller		Wireless remote controller (packed with indoor unit)					
Connecting pipe	Gas side	(mm)	Φ9.5			Φ12.7	
	Liquid side	(mm)	Φ6.4				
	Drain port (Normal dia.)	16 (Polypropylene tube)					
Sound pressure level (Note 2 (High/Mid/Low)		(dB(A))	38/32/26	38/32/26	40/34/29	43/37/31	47/40/34
PMV Kit*		Available*					

Note 1: The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.

The reference piping consists of 5m of main piping and 2.5m of branch piping connected with 0 meter height.

Note 2: The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

Note: Rated conditions Cooling : Indoor air temperature 27°C DB/19°CWB, Outdoor air temperature 35°C DB

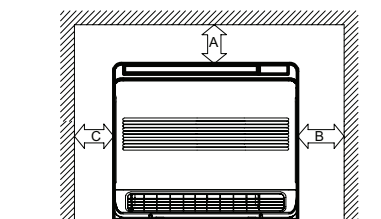
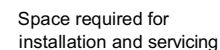
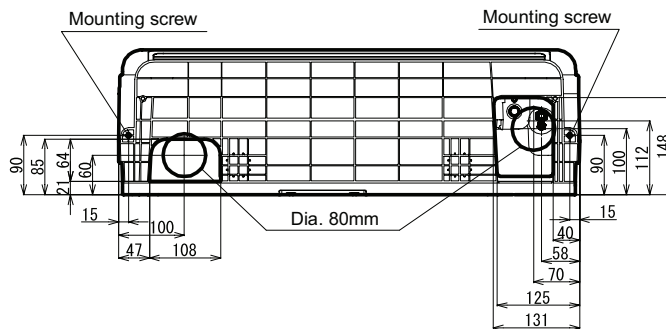
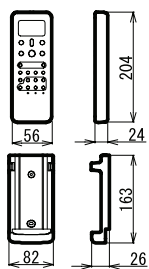
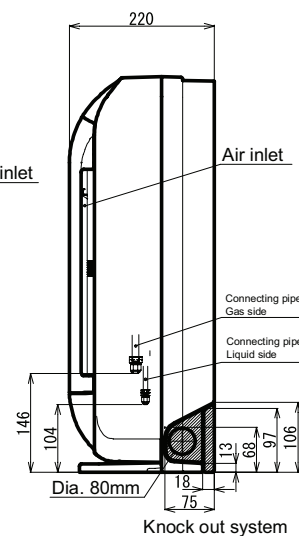
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

* : Mini-SMMS only

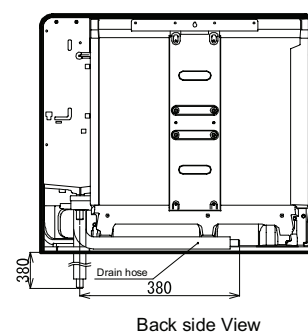
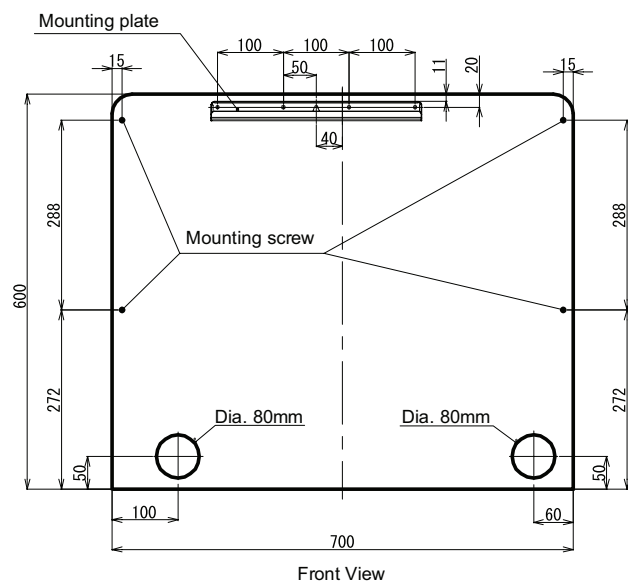
MML-AP0074NH-E, AP0094NH-E, AP0124NH-E, AP0154NH-E, AP0184NH-E

Technical drawing of the upper part of the wind tunnel. The drawing shows a rectangular duct with a total width of 700 and a height of 60. A vertical louver (upper air outlet) is located at the bottom, with a height of 100. Two circular ports are shown, each labeled "Dia. 80mm". The distance from the left wall to the first port is 100, and the distance from the right wall to the second port is 70.

MML-	AP0074 to AP0124 type	AP0154 to AP0184 type
Liquid side	dia. 6.35	dia. 6.35
Gas side	dia. 9.52	dia. 12.7



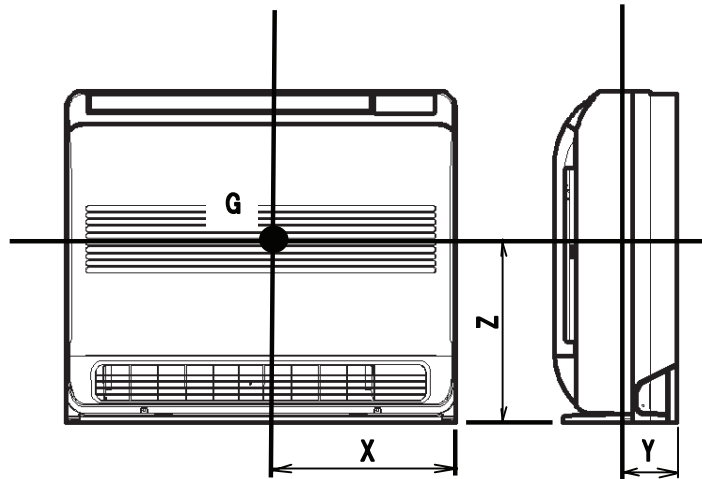
	Distance
A	300 or more
B	300 or more
C	300 or more



3.Center of gravity

MML-AP0074NH-E, AP0094NH-E, AP0124NH-E, AP0154NH-E, AP0184NH-E

	Distance to center of gravity (mm)
X	320
Y	150
Z	310



4. Electrical characteristics

	Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
				Min	Max	kW	FLA	MCA	MOCP
50Hz	Console Type	MML-AP0074NH-E	230-1-50	198	264	0.041	0.21	0.26	15
		MML-AP0094NH-E	230-1-50	198	264	0.041	0.21	0.26	15
		MML-AP0124NH-E	230-1-50	198	264	0.041	0.25	0.31	15
		MML-AP0154NH-E	230-1-50	198	264	0.041	0.32	0.40	15
		MML-AP0184NH-E	230-1-50	198	264	0.041	0.46	0.58	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

5. Sensible capacity table

Console Type (MML-AP***4NH-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

Unit size	Outdoor air temp. CDB	Indoor air temp.													
		14.0CWB		16.0CWB		18.0CWB		19.0CWB		20.0CWB		22.0CWB		24.0CWB	
		20CDB		23CDB		26CDB		27CDB		28CDB		30CDB		32CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	12.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	14.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	16.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	18.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	20.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	21.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	23.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	25.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	27.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	29.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	31.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	33.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
	35.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.6
37.0	1.7	1.5	1.9	1.6	2.1	1.7	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	
39.0	1.7	1.4	1.9	1.5	2.0	1.6	2.1	1.6	2.1	1.6	2.3	1.6	2.4	1.5	
009	10.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	12.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	14.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	16.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	18.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	20.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	21.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	23.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	25.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	27.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	29.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	31.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	33.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
	35.0	2.3	1.8	2.5	1.9	2.7	2.0	2.8	2.0	2.9	2.0	3.1	2.0	3.2	1.9
37.0	2.2	1.7	2.5	1.8	2.6	1.9	2.7	1.9	2.8	1.9	3.0	1.9	3.1	1.9	
39.0	2.2	1.7	2.4	1.8	2.6	1.9	2.6	1.9	2.7	1.9	2.9	1.9	3.0	1.8	
012	10.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	12.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	14.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	16.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	18.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	20.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	21.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	23.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	25.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	27.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	29.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	31.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	33.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	35.0	3.0	2.2	3.3	2.4	3.5	2.5	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
	37.0	2.9	2.1	3.2	2.3	3.4	2.4	3.5	2.4	3.6	2.4	3.8	2.4	4.0	2.3
	39.0	2.8	2.1	3.1	2.2	3.3	2.4	3.4	2.4	3.5	2.4	3.7	2.3	3.9	2.3

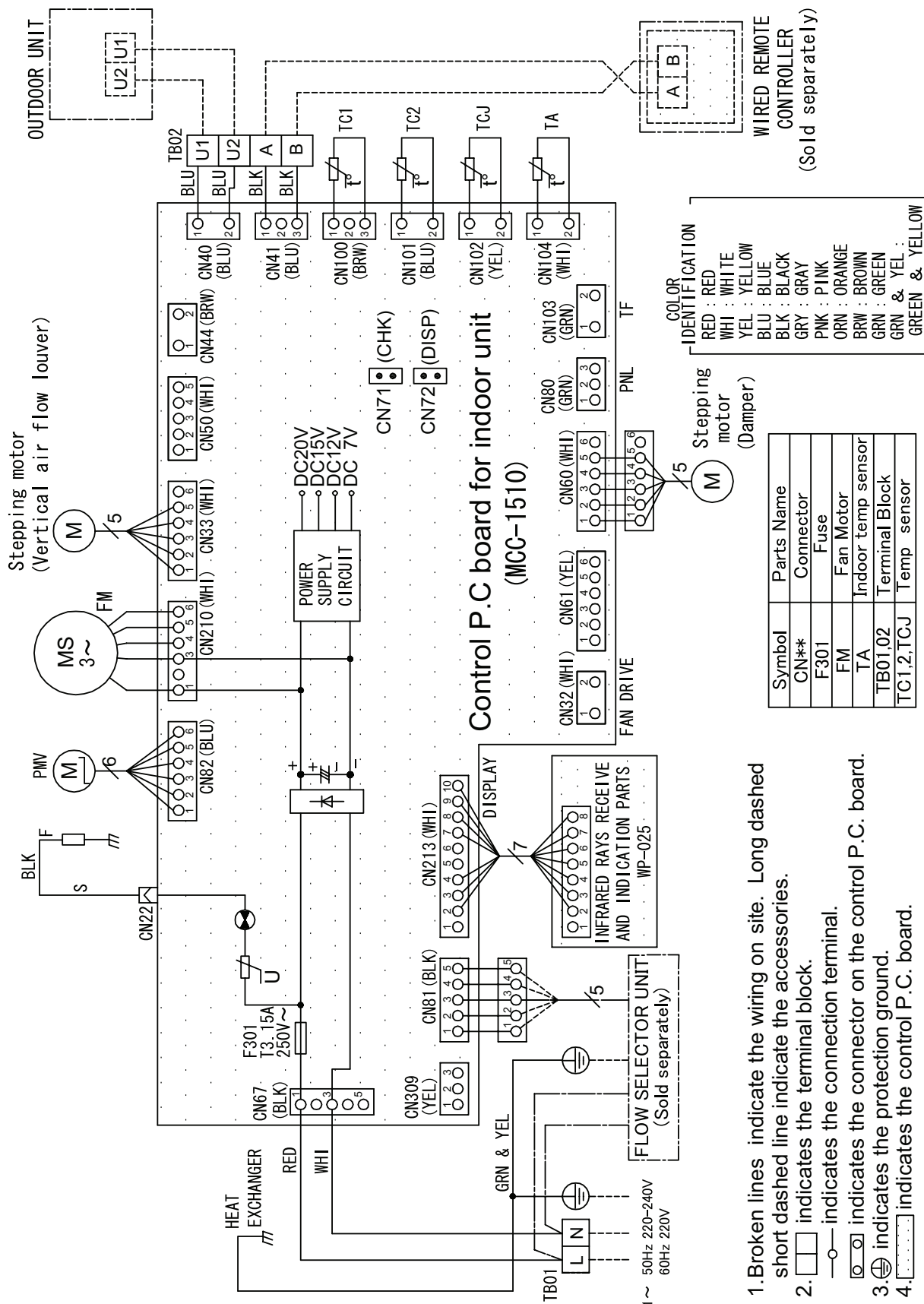
Console Type (MML-AP***4NH-E)

TC : Total capacity [kW] SHC : Sensible capacity [kW]

Unit size	Outdoor air temp. CDB	Indoor air temp.													
		14.0CWB		16.0CWB		18.0CWB		19.0CWB		20.0CWB		22.0CWB		24.0CWB	
		20CDB		23CDB		26CDB		27CDB		28CDB		30CDB		32CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	10.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	12.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	14.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	16.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	18.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	20.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	21.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	23.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	25.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	27.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	29.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	31.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	33.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	35.0	3.7	2.7	4.1	2.9	4.4	3.1	4.5	3.1	4.6	3.1	4.9	3.1	5.1	3.0
	37.0	3.6	2.7	4.0	2.8	4.2	3.0	4.4	3.0	4.5	3.0	4.7	3.0	5.0	2.9
	39.0	3.5	2.6	3.8	2.8	4.1	2.9	4.2	2.9	4.4	2.9	4.6	2.9	4.8	2.8
018	10.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	12.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	14.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	16.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	18.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	20.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	21.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	23.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	25.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	27.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	29.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	31.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	33.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	35.0	4.6	3.4	5.1	3.6	5.4	3.8	5.6	3.8	5.8	3.8	6.1	3.8	6.4	3.7
	37.0	4.5	3.3	4.9	3.5	5.3	3.7	5.4	3.7	5.6	3.7	5.9	3.6	6.2	3.6
	39.0	4.3	3.2	4.8	3.4	5.1	3.6	5.3	3.6	5.4	3.6	5.7	3.5	6.0	3.5

6. Wiring diagram

MML-AP0074NH-E, AP0094NH-E, AP0124NH-E, AP0154NH-E, AP0184NH-E



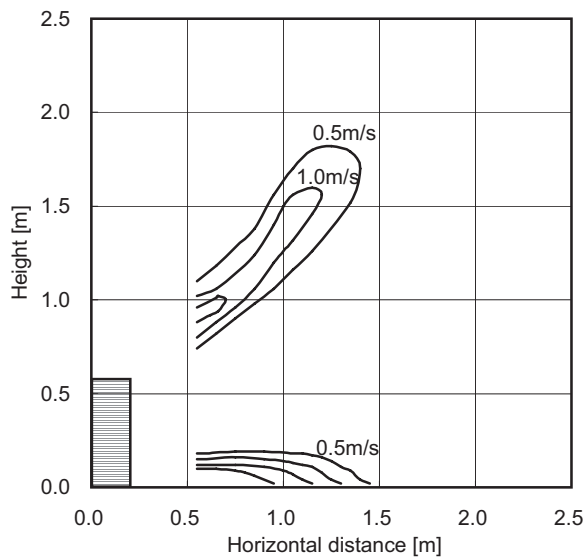
1. Broken lines indicate the wiring on site. Long dashed short dashed line indicate the accessories.
2. indicates the terminal block.
3. indicates the connection terminal.
4. indicates the protection ground.
5. indicates the control P.C. board.

7. Air throw distance chart

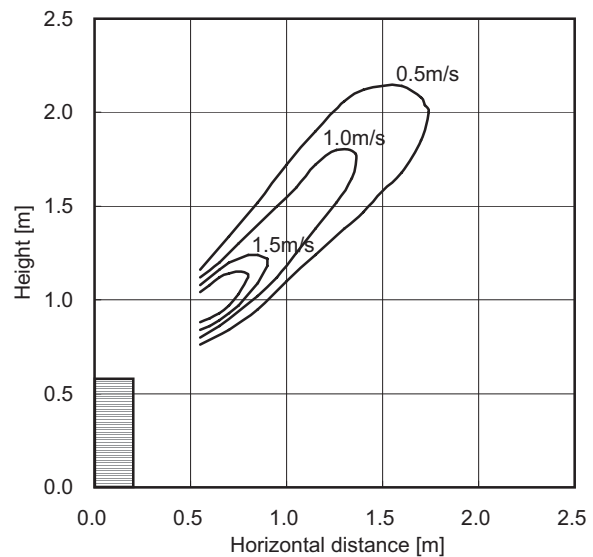
Console Type

MML-AP0074NH-E, AP0094NH-E

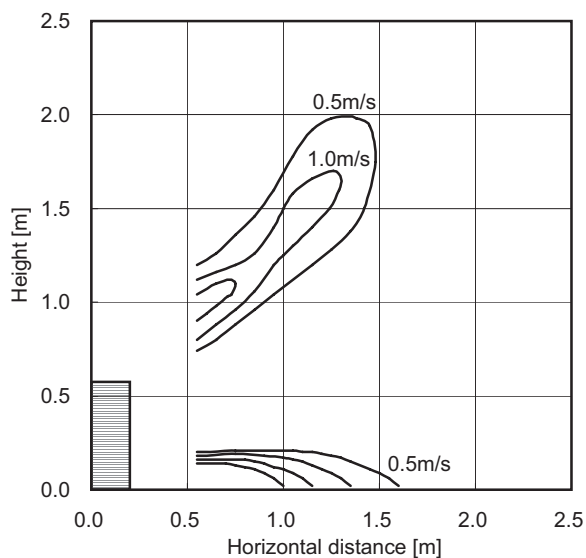
Cooling - Upper & Lower



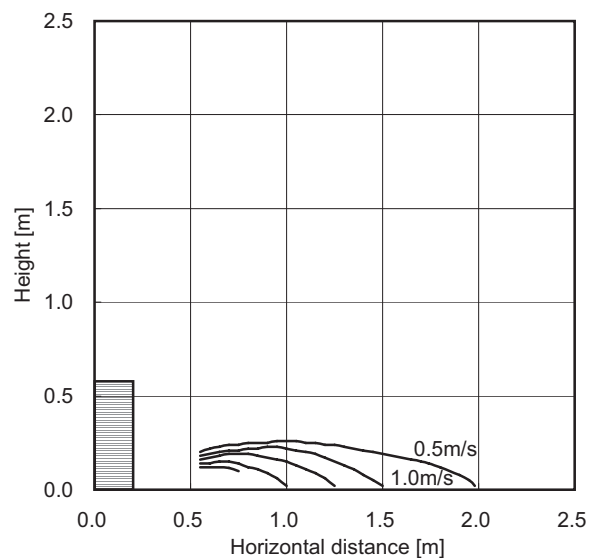
Cooling - Upper



Heating - Upper & Lower

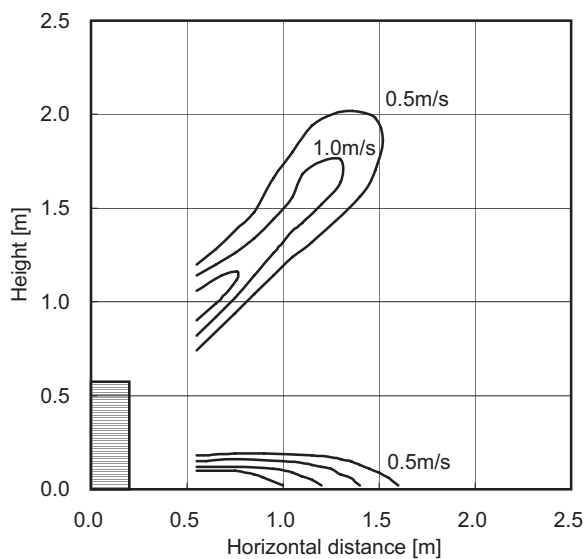


Heating - Lower

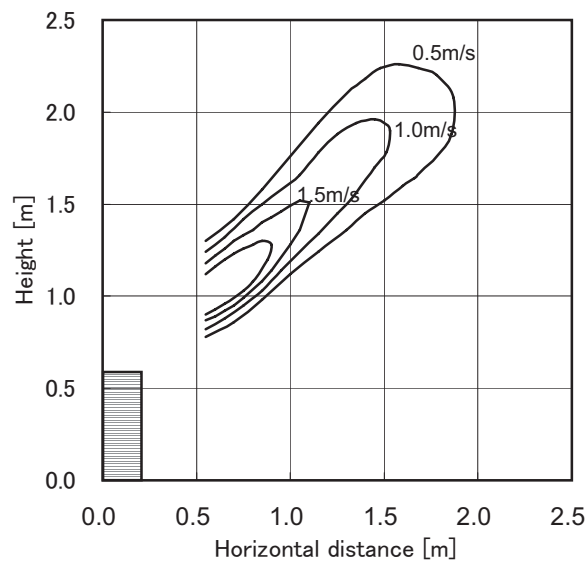


MML-AP0124NH-E

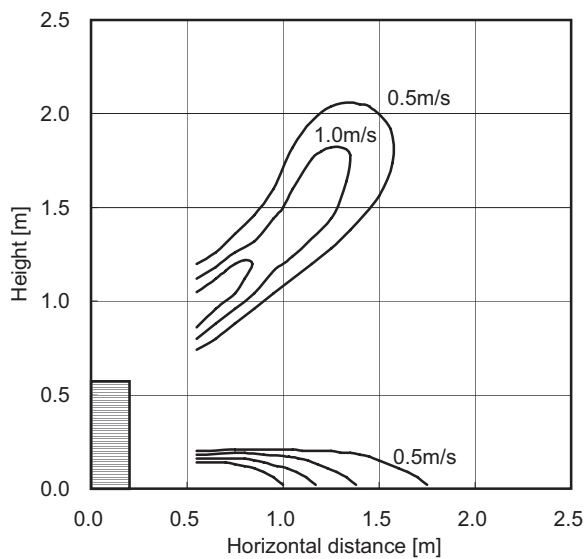
Cooling - Upper & Lower



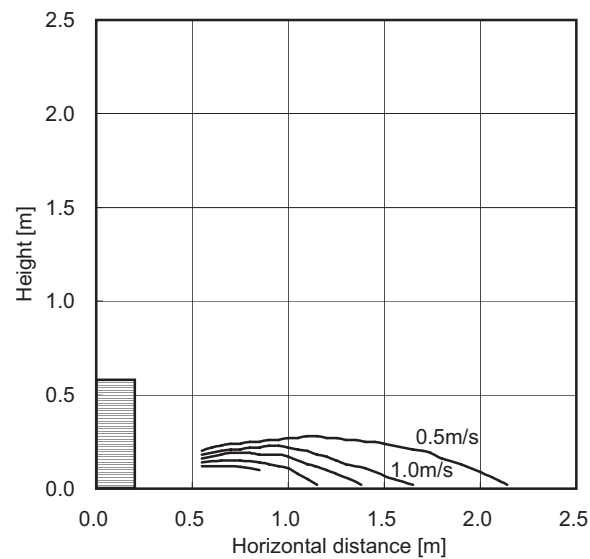
Cooling - Upper



Heating - Upper & Lower

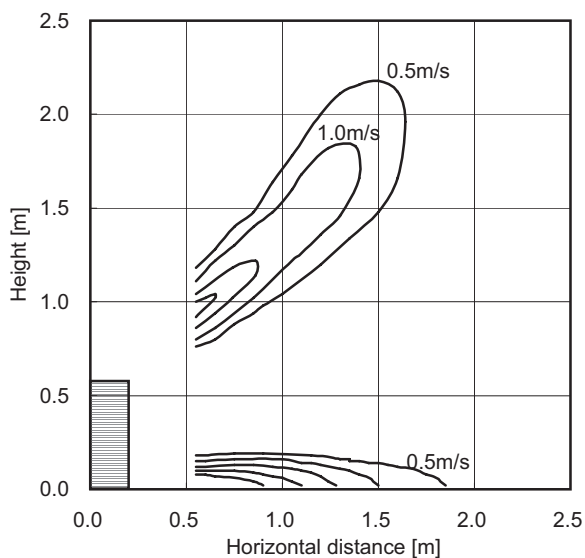


Heating - Lower

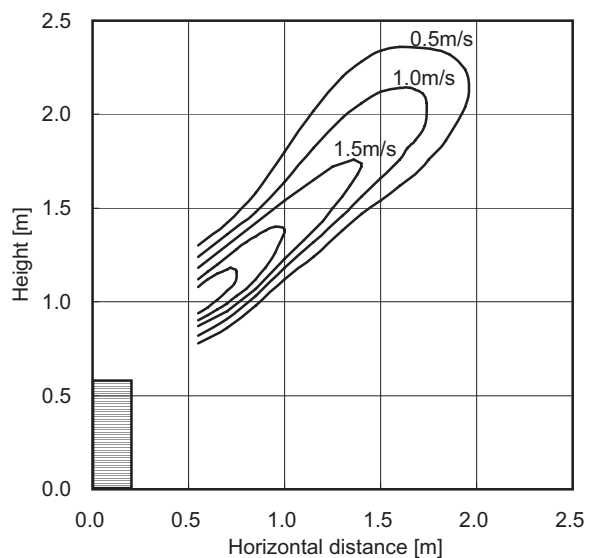


MML-AP0154NH-E

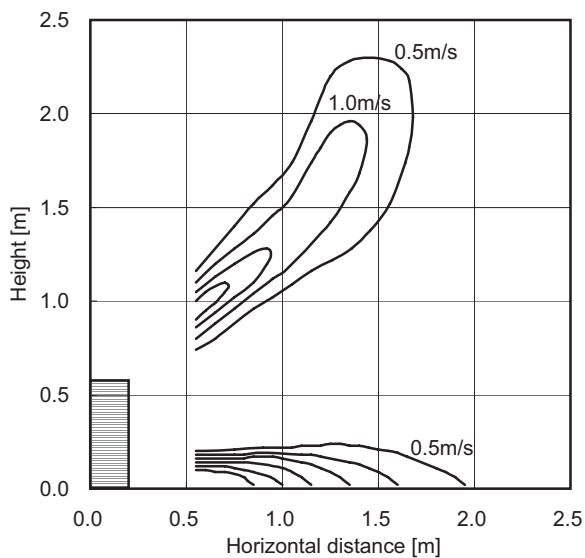
Cooling - Upper & Lower



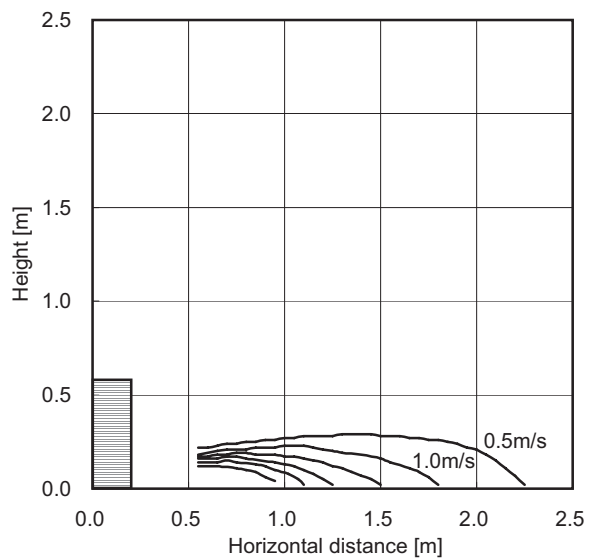
Cooling - Upper



Heating - Upper & Lower

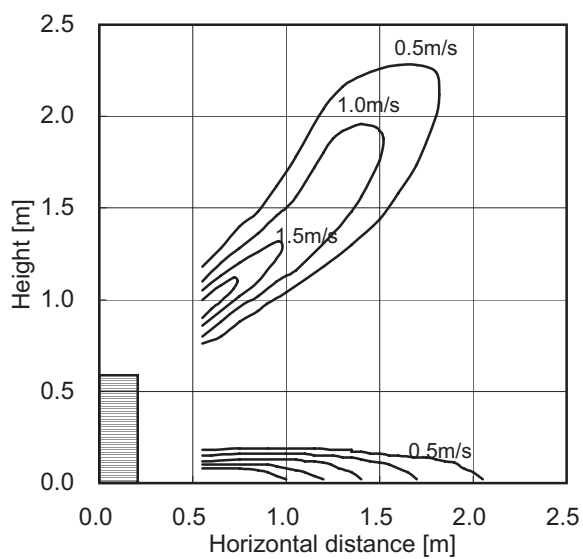


Heating - Lower

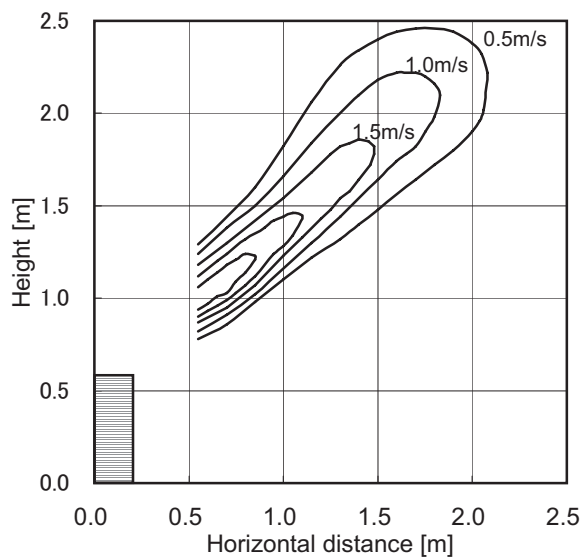


MML-AP0184NH-E

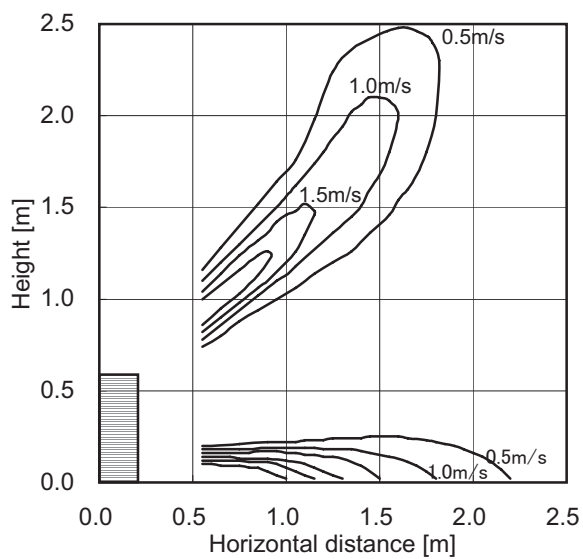
Cooling - Upper & Lower



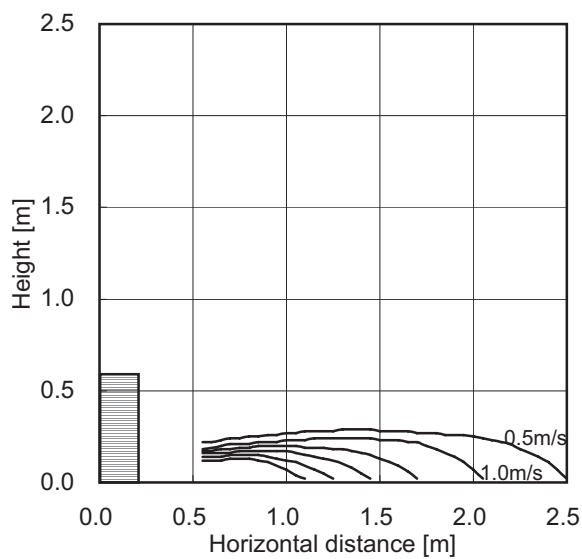
Cooling - Upper



Heating - Upper & Lower

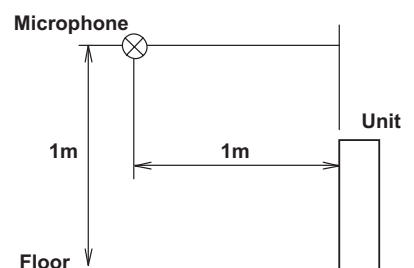


Heating - Lower



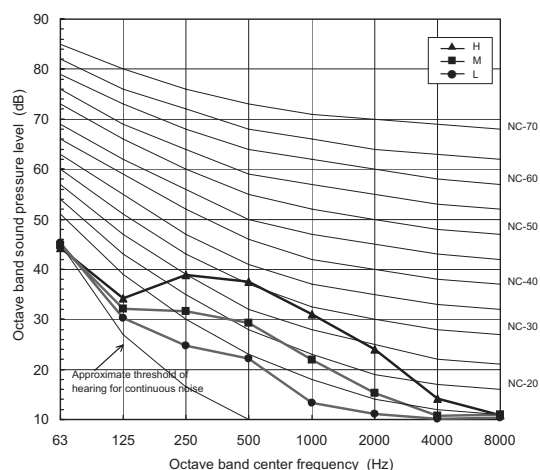
8. Sound Characteristics (NC-Curve)

Console Type



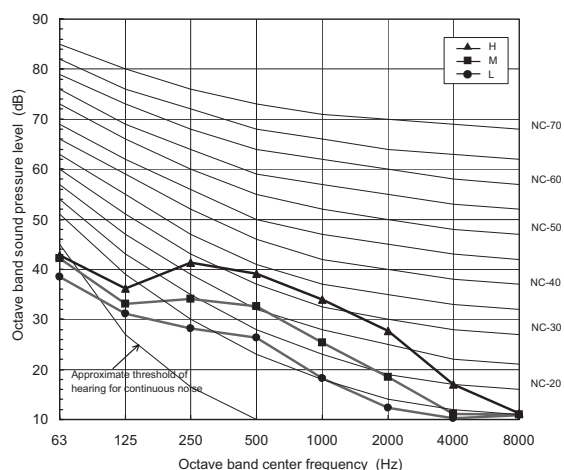
MML-AP0074NH-E/AP0094NH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	38	32	26



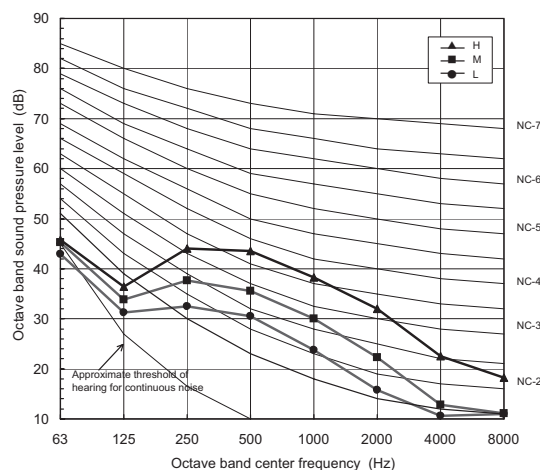
MML-AP0124NH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	40	34	29



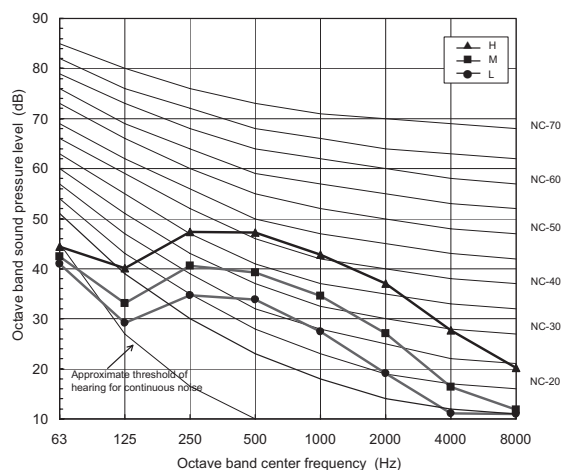
MML-AP0154NH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	43	37	31



MML-AP0184NH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	47	40	34



9. Accessories

Remote controller

Packed with the indoor unit

Name	Model name	Appearance	Application	Function
Wireless remote controller	WH-L11SE			• Start / Stop • Changing mode • Temperature setting • Air flow changing (5 steps) • Louver setting • Clock • Timer function - ON/OFF timer (10 min. step) - Everyday timer - Sleep timer - COMFORT SLEEP timer • High power mode • QUIET mode • One-touch pre-set memory • One-touch Auto (*1)

(*1) Super MMS-i cannot accept "AUTO" mode, Super HRM can accept "AUTO" mode.

11-2-16 Air to Air Heat Exchanger with DX-coil Type

Air to Air Heat exchanger with DX-coil Type

**MMD-VN502HEXE
MMD-VN802HEXE
MMD-VN1002HEXE**



Contents

- 1. Specifications**
- 2. Dimension**
- 3. Wiring Diagram**
- 4. Exchange Efficiency Correction**
- 5. Sensible Capacity Table**
- 6. Fan Characteristics**
- 7. Sound Characteristics (NC Curve)**
- 8. Electrical characteristics**

1. Specifications

(50Hz)

Model name				MMD-VN502HEXE	MMD-VN802HEXE	MMD-VN1002HEXE
Fresh air conditioning load	Cooling	(*1)	kW	4.10 (1.30)	6.56 (2.06)	8.25 (2.32)
	Heating	(*1)	kW	5.53 (2.33)	8.61 (3.61)	10.92 (4.32)
Power supply				1phase 50Hz 230V (220V-240V) (Separate power supply for indoor units is required.)		
Temperature exchange efficiency		Extra High	%	70.5	70.0	65.5
		High	%	70.5	70.0	65.5
		Low	%	71.5	72.5	67.5
Enthalpy exchange efficiency	Cooling	Extra High	%	56.5	56.0	52.0
		High	%	56.5	56.0	52.0
		Low	%	57.5	59.0	54.0
	Heating	Extra High	%	68.5	70.0	66.0
		High	%	68.5	70.0	66.0
		Low	%	69.0	73.0	68.5
Power input (Heat exchange mode)		Extra High	kW	0.300	0.505	0.550
		High	kW	0.280	0.465	0.545
		Low	kW	0.235	0.335	0.485
Running current		Extra High	A	1.30	2.25	2.46
		High	A	1.21	2.07	2.43
		Low	A	1.01	1.46	2.16
Fan unit	Standard air flow	Extra High	m³/h	500	800	950
		High	m³/h	500	800	950
		Low	m³/h	440	640	820
	External static pressure	Extra High	Pa	120	120	135
		High	Pa	105	100	120
		Low	Pa	115	100	105
	Air flow limit	Lower limit	m³/h	330	480	640
		Upper limit	m³/h	600	960	1140
Sound pressure		Extra High	dB	37.5	41.0	43.0
		High	dB	36.5	40.0	42.0
		Low	dB	34.5	38.0	40.0
Appearance				Zinc hot dipping steel plate		
Outer dimension	Height		mm	430	430	430
	Width		mm	1140	1189	1189
	Depth		mm	1690	1739	1739
Total weight			kg	84	100	101
Heat exchanger				Finned tube		
Heat-insulating material				Flexible urethane foam		
Air filter				Standard filter (Gravitational method 82%) & High efficiency filter (Colorimetric method 65%)		
Controller				Remote controller (Separately sold parts)		
Connecting piping	Gas side		mm	Ø9.5	Ø12.7	Ø12.7
	Liquid side		mm	Ø6.4	Ø6.4	Ø6.4
Drain port (Nominal dia. mm)				25 (Polyvinyl chloride tube)		

(*1) Cooling and heating capacities are based on the following conditions:

Cooling capacities are based on: indoor temperature: 27 °CDB/19°CWB, Outdoor temperature: 35°CDB

Heating capacities are based on: indoor temperature: 20°CDB, Outdoor temperature: 7 °CDB/6°CWB

Fan is based on Extra High and High

(): The figures in () indicate the heat reclaimed from the heat recovery ventilator.

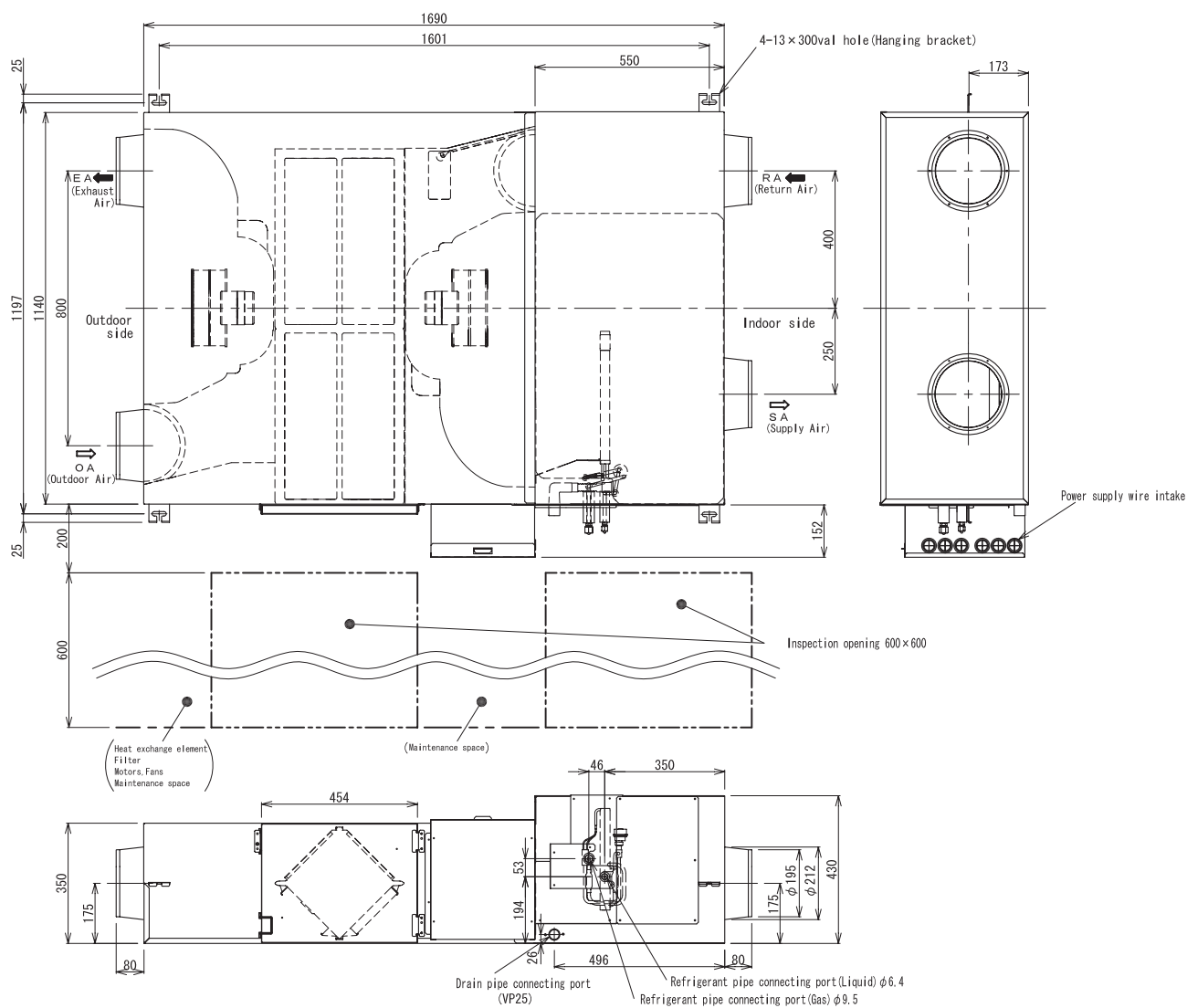
When calculating the capacity code as indoor units, please use as below.

MMD-VN502HEXE: 1HP, MMD-VN802HEXE: 1.7HP,

MMD-VN1002HEXE: 2.0HP

2. Dimension

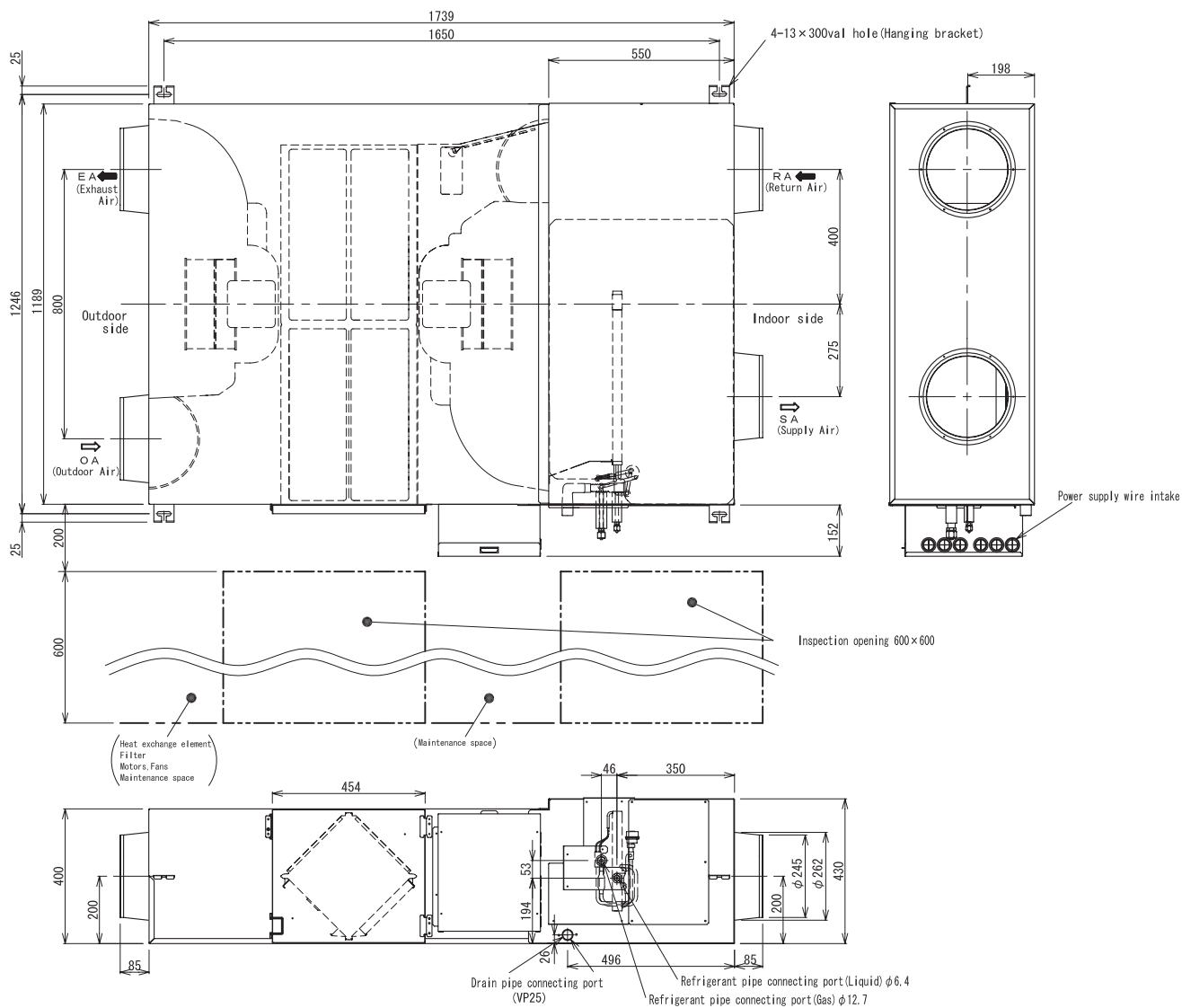
MMD-VN502HEXE



■ Attention

1. Duct size (Nominal diameter): $\phi 200$
2. The above dimensions do not include the thickness of the insulation material on the unit body.

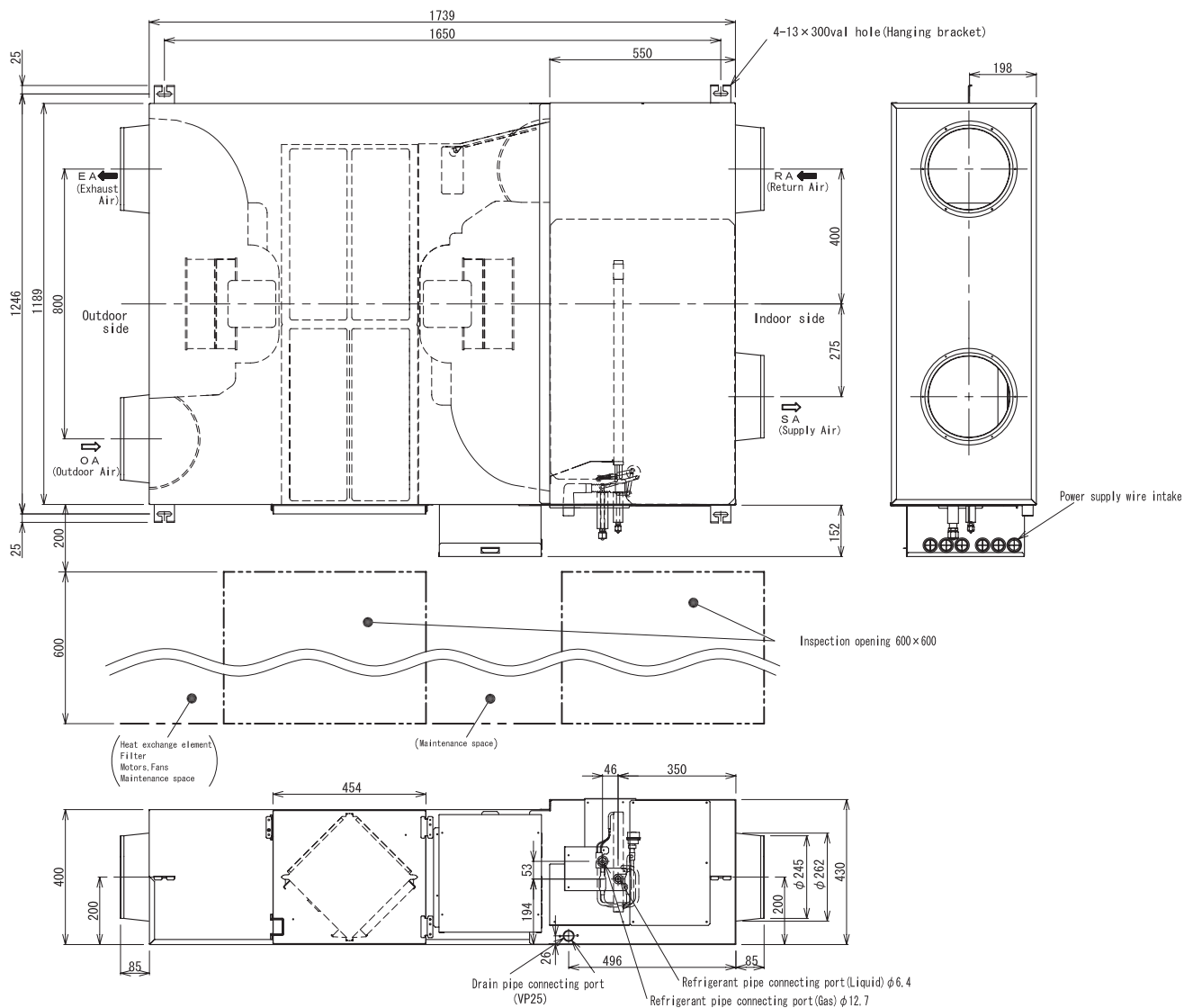
MMD-VN802HEXE



■ Attention

1. Duct size (Nominal diameter): $\phi 250$
2. The above dimensions do not include the thickness of the insulation material on the unit body.

MMD-VN1002HEXE

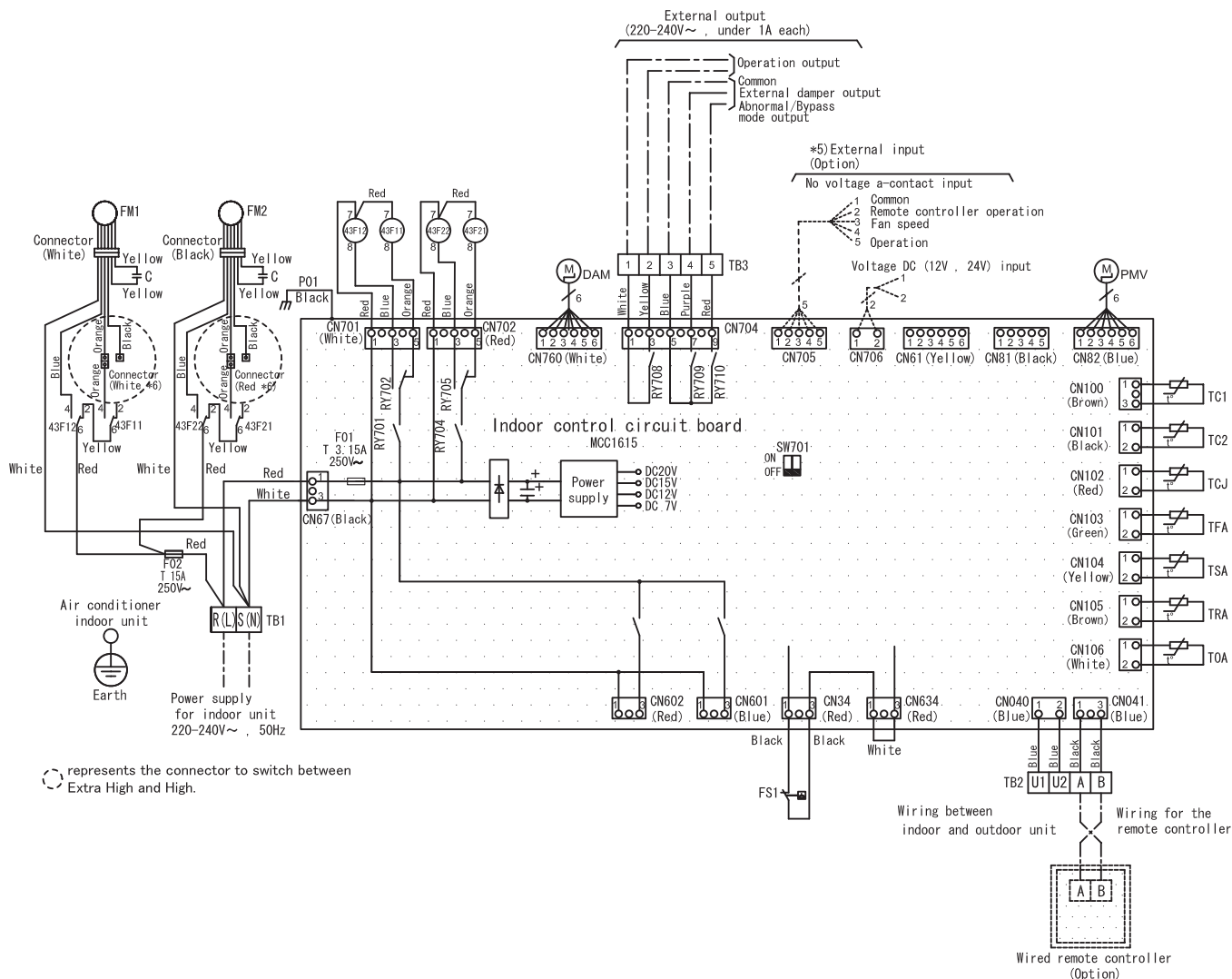


■ Attention

1. Duct size (Nominal diameter): $\phi 250$
2. The above dimensions do not include the thickness of the insulation material on the unit body.

3. Wiring Diagram

MMD-VN502HEXE, MMD-VN802HEXE, MMD-VN1002HEXE



Code	Parts name
CN***	Connector
F01	Fuse (Printed circuit board)
F02	Fuse (Motor)
FM1	Air supplying motor
FM2	Air exhausting motor
DAM	Damper motor
TRA	TRA sensor
TOA	TOA sensor
TSA	TSA sensor
TFA	TFA sensor
TCJ, TC1, TC2	Indoor coil sensor

Code	Parts name
TB1	Terminal block (Power source)
TB2	Terminal block (Communication)
TB3	Terminal block (External output)
TS1	Float switch
PMV	Pulse modulating value
SW701	Dip switch
43F11, 43F12	Relay for air supplying motor
43F21, 43F22	Relay for air exhausting motor
RY701, RY702	Relay for air supplying motor
RY704, RY705	Relay for air exhausting motor

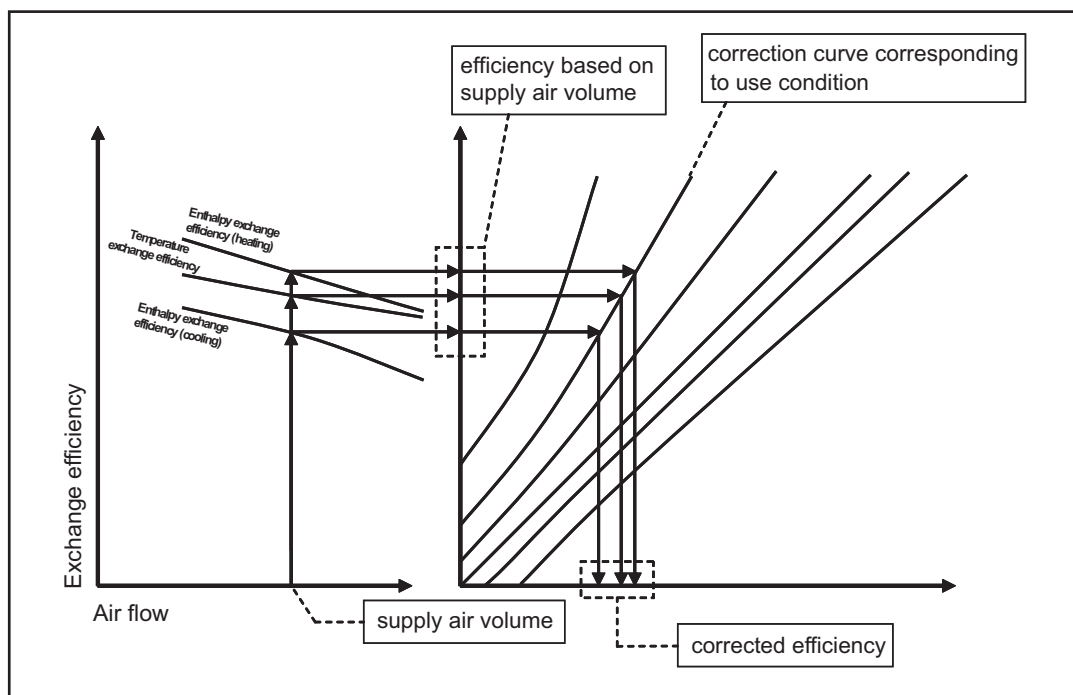
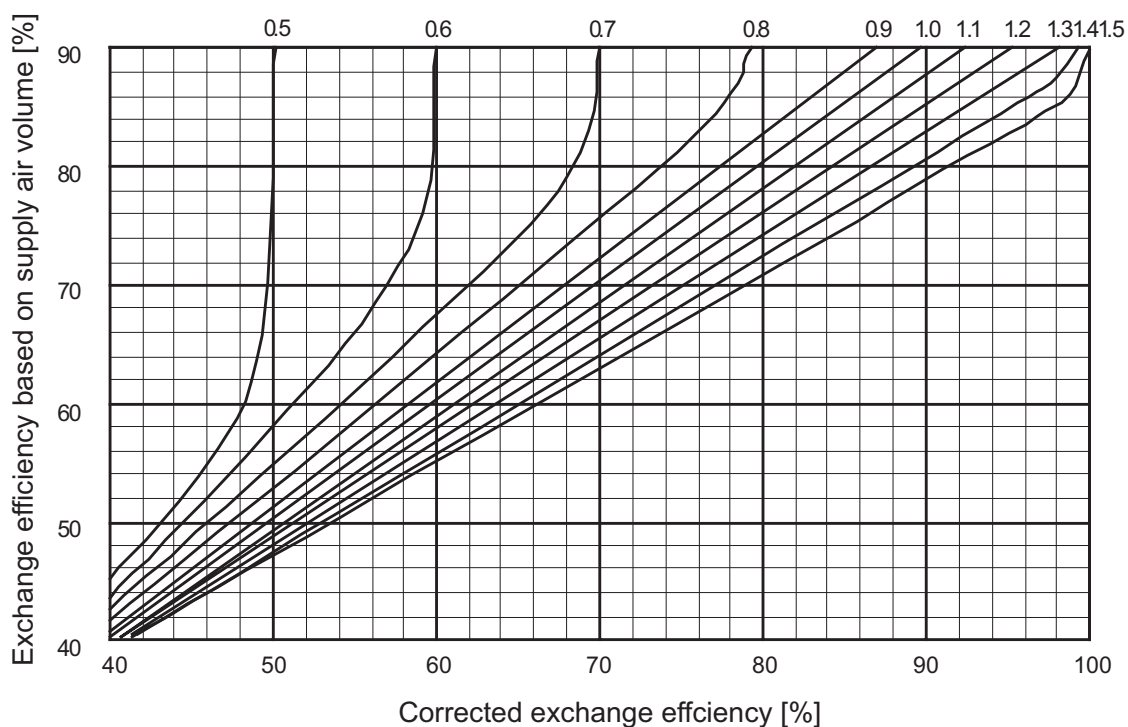
- The dotted line represents a wire procured locally, and the dashed line represents an option sold separately.
- represents a terminal block, —○— represents a connection terminal, □○ represents a connector on the printed circuit board and □○ represents a short circuit connector.
- ⊕ represents a protective earth.
- represents a printed circuit board.
- Using a no voltage a-contact input of the external input (option), the following operations are available.
Between 1 and 2: Selecting the remote controller operation (Invalid/Valid)
Between 1 and 3: Adjusting the fan speed (Low/High)
Between 1 and 5: Operation (ON/OFF)
Use a microcurrent contact (DC12V, 1mA). In addition, ON/OFF operation is possible when using a voltage of DC12V or 24V.
- Orange wire (High) is connected as factory default. To switch to "Extra High", connect black wire's connector instead of orange.

4. Exchange Efficiency Correction

Exchange efficiency correction when supply air volume and exhaust air volume are different

Exchange efficiency correction curve

Exhaust to supply ratio = Exhaust air volume / Supply air volume



5. Sensible Capacity Table

Cooling capacity tables

TC: Total Capacity [kW] SHC: Sensible Heat Capacity [kW]

MMD-VN ***HEXE

Class	DX-coil capacity [kW]	Outdoor temp. [°CDB]	DX-coil inlet temp. [°CWB]											
			16.0		18.0		19.0		20.0		22.0		24.0	
			TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
502	2.8	10.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		12.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		14.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		16.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		18.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		20.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		21.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		23.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		25.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		27.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		29.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		31.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		33.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		35.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		37.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.7
		39.0	2.4	1.7	2.6	1.8	2.7	1.8	2.8	1.8	2.9	1.8	3.1	1.7
802	4.5	10.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		12.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		14.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		16.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		18.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		20.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		21.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		23.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		25.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		27.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		29.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		31.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		33.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		35.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		37.0	4.0	2.7	4.3	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		39.0	3.9	2.7	4.2	2.8	4.4	2.8	4.5	2.9	4.7	2.8	5.0	2.7
1002	5.93	10.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		12.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		14.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		16.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		18.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		20.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		21.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		23.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		25.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		27.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		29.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		31.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		33.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		35.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		37.0	5.3	3.7	5.7	3.9	5.9	3.9	6.1	3.9	6.4	3.9	6.7	3.8
		39.0	5.2	3.6	5.6	3.8	5.7	3.8	5.9	3.8	6.2	3.8	6.5	3.7

Heating capacity tables

TC: Total Capacity [kW] SHC: Sensible Heat Capacity [kW]

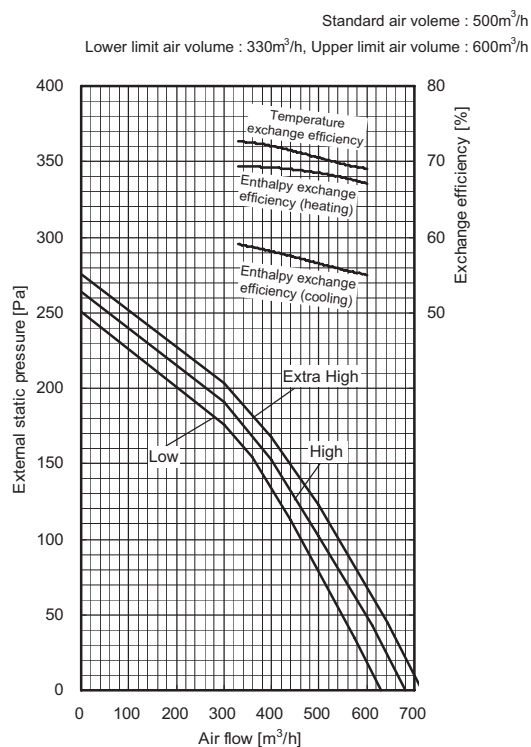
MMD-VN ***HEXE

Class	DX-coil capacity [kW]	Outdoor temp. [°CWB]	DX-coil inlet temp. [°CDB]				
			16.0	18.0	20.0	22.0	24.0
			SHC	SHC	SHC	SHC	SHC
502	3.2	-15.0	1.9	1.8	1.8	1.8	1.7
		-13.0	2.0	2.0	2.0	1.9	1.9
		-11.0	2.2	2.1	2.1	2.0	2.0
		-10.0	2.2	2.2	2.2	2.1	2.1
		-8.0	2.4	2.3	2.3	2.2	2.2
		-6.0	2.5	2.4	2.4	2.3	2.3
		-4.0	2.5	2.4	2.3	2.3	2.2
		-2.0	2.5	2.5	2.4	2.4	2.3
		0.0	2.6	2.7	2.6	2.5	2.5
		2.0	2.8	2.8	2.7	2.6	2.6
		4.0	3.2	3.1	3.0	3.0	2.9
		6.0	3.3	3.3	3.2	3.1	3.0
		8.0	3.3	3.3	3.2	3.1	3.0
		10.0	3.3	3.3	3.2	3.1	3.0
		12.0	3.3	3.3	3.2	3.1	3.0
		14.0	3.3	3.3	3.2	3.1	3.0
802	4.8	-15.0	2.8	2.8	2.7	2.6	2.6
		-13.0	3.0	3.0	2.9	2.9	2.8
		-11.0	3.3	3.2	3.1	3.1	3.0
		-10.0	3.4	3.3	3.2	3.2	3.1
		-8.0	3.6	3.5	3.4	3.3	3.3
		-6.0	3.7	3.6	3.6	3.5	3.4
		-4.0	3.7	3.5	3.5	3.4	3.3
		-2.0	3.8	3.7	3.6	3.5	3.4
		0.0	3.9	4.0	3.9	3.8	3.7
		2.0	4.2	4.1	4.1	4.0	3.9
		4.0	4.7	4.7	4.6	4.5	4.3
		6.0	5.0	4.9	4.8	4.7	4.6
		8.0	5.0	4.9	4.8	4.7	4.6
		10.0	5.0	4.9	4.8	4.7	4.6
		12.0	5.0	4.9	4.8	4.7	4.6
		14.0	5.0	4.9	4.8	4.7	4.6
1002	6.6	-15.0	3.9	3.8	3.7	3.6	3.5
		-13.0	4.2	4.1	4.0	3.9	3.8
		-11.0	4.5	4.4	4.3	4.2	4.1
		-10.0	4.6	4.5	4.4	4.3	4.2
		-8.0	4.9	4.8	4.7	4.6	4.5
		-6.0	5.1	5.0	4.9	4.8	4.6
		-4.0	5.1	4.9	4.8	4.7	4.5
		-2.0	5.2	5.1	5.0	4.9	4.7
		0.0	5.4	5.5	5.4	5.2	5.1
		2.0	5.8	5.7	5.6	5.4	5.3
		4.0	6.5	6.4	6.3	6.1	6.0
		6.0	6.9	6.7	6.6	6.4	6.3
		8.0	6.9	6.7	6.6	6.4	6.3
		10.0	6.9	6.7	6.6	6.4	6.3
		12.0	6.9	6.7	6.6	6.4	6.3
		14.0	6.9	6.7	6.6	6.4	6.3

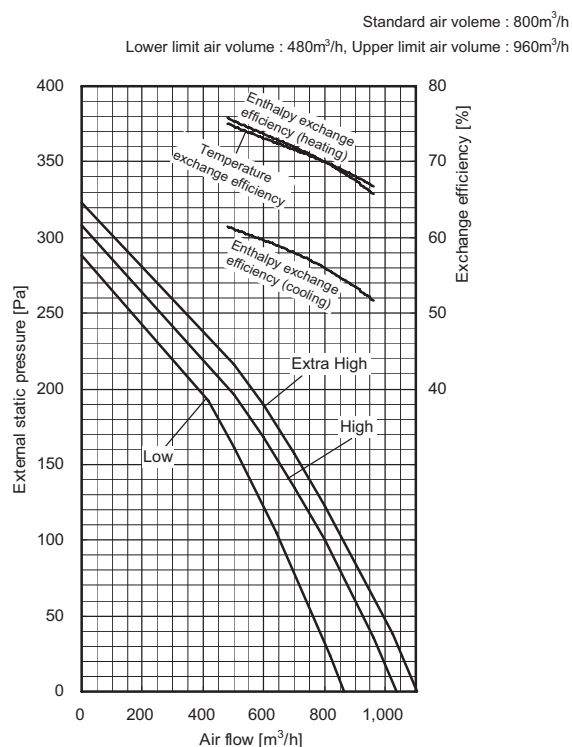
6. Fan Characteristics

----- 230V, 50Hz

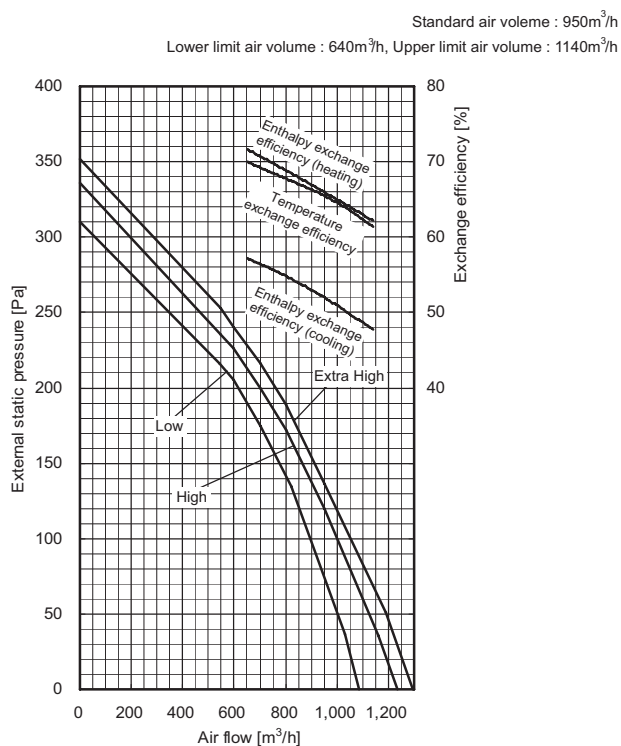
MMD-VN502HEXE



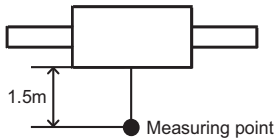
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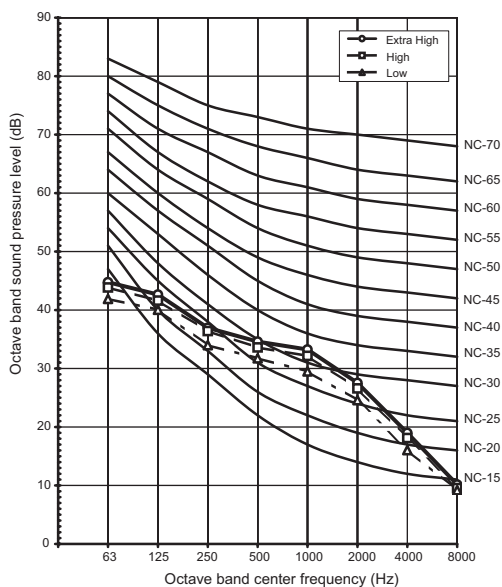
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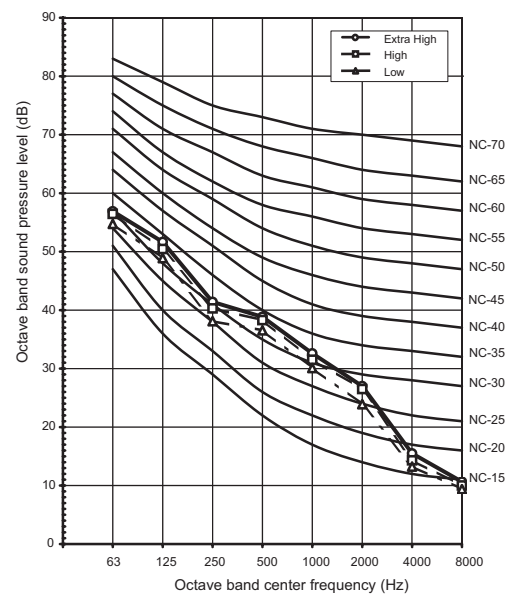
7. Sound Characteristics (NC Curve)

Model name	Power supply (phase/Hz/V)		Sound pressure level (dB)		
			Extra High	High	Low
MMD-VN502HEXE	1 phase / 50Hz / 220V-240V	Under from body 1.5m 	37.5	36.5	34.5
MMD-VN802HEXE			41.0	40.0	38.0
MMD-VN1002HEXE			43.0	42.0	40.0

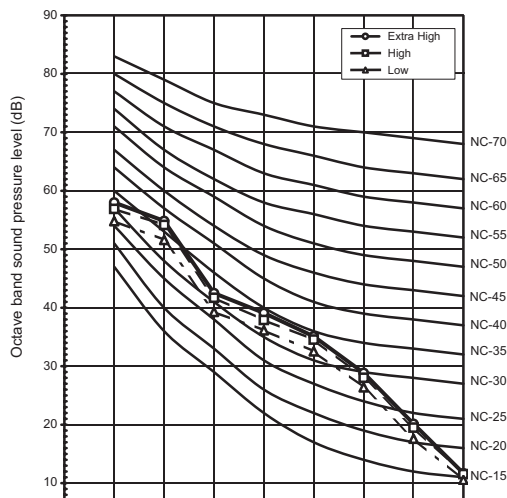
MMD-VN502HEXE



MMD-VN802HEXE

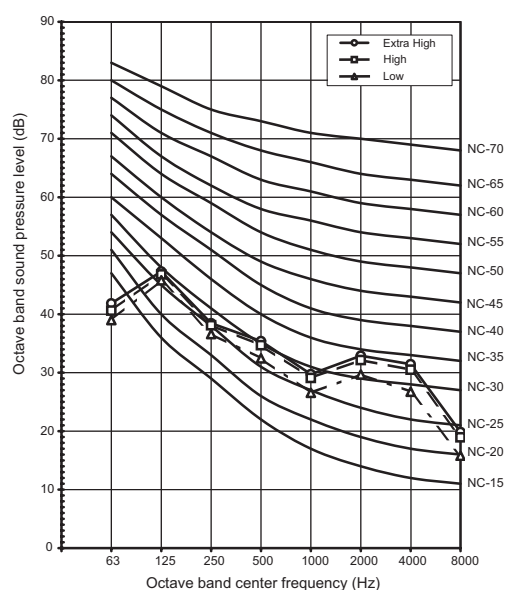


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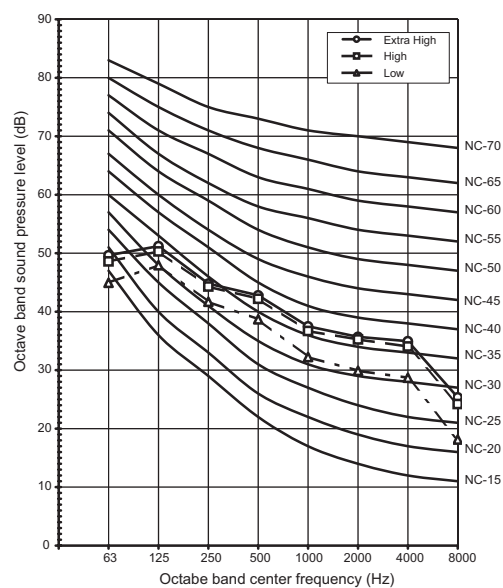


Model name	Power supply (phase/Hz/V)		Sound pressure level (dB)		
			Extra High	High	Low
MMD-VN502HEXE	1 phase / 50Hz / 220V-240V		39.5	39.0	37.0
MMD-VN802HEXE			44.5	44.5	40.5
MMD-VN1002HEXE			47.0	47.0	45.0

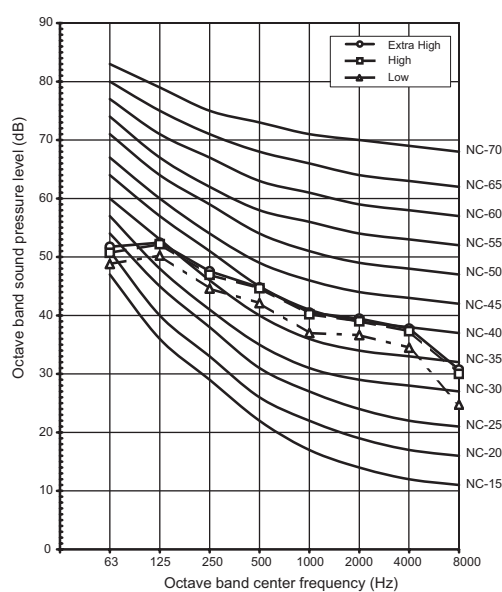
MMD-VN502HEXE



MMD-VN802HEXE



MMD-VN1002HEXE



8. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
Air to Air Heat Exchanger with DX-coil	MMD-VN502HEXE	230-1-50	198	264	0.124 x 2	1.5	1.7	15
	MMD-VN802HEXE	230-1-50	198	264	0.217 x 2	2.6	3.0	15
	MMD-VN1002HEXE	230-1-50	198	264	0.284 x 2	2.9	3.5	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

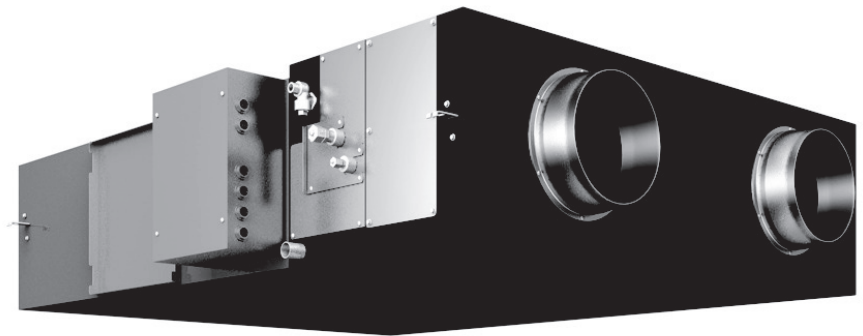
kW : Fan Motor Rated Output (kW)

11-2-17 Air to Air Heat Exchanger with DX-coil, Humidifier Type

Air to Air Heat exchanger with DX-coil, Humidifier Type

(European market only)

MMD-VN502HEXE
MMD-VN802HEXE
MMD-VN1002HEXE



Contents

1. Specifications
2. Dimension
3. Wiring Diagram
4. Exchange Efficiency Correction
5. Sensible Capacity Table
6. Fan Characteristics
7. Sound Characteristics (NC Curve)
8. Electrical characteristics

1. Specifications

(50Hz)

Model name				MMD-VNK502HEXE	MMD-VNK802HEXE	MMD-VNK1002HEXE
Fresh air conditioning load	Cooling	(*1)	kW	4.10 (1.30)	6.56 (2.06)	8.25 (2.32)
	Heating	(*1)	kW	5.53 (2.33)	8.61 (3.61)	10.92 (4.32)
Power supply				1phase 50Hz 230V (220V-240V) (Separate power supply for indoor units is required.)		
Temperature exchange efficiency		Extra High	%	70.5	70.0	65.5
		High	%	70.5	70.0	65.5
		Low	%	71.5	72.5	67.5
Enthalpy exchange efficiency	Cooling	Extra High	%	56.5	56.0	52.0
		High	%	56.5	56.0	52.0
		Low	%	57.5	59.0	54.5
	Heating	Extra High	%	68.5	70.0	66.0
		High	%	68.5	70.0	66.0
		Low	%	69.0	73.0	68.5
Power input (Heat exchange mode)		Extra High	kW	0.305	0.530	0.575
		High	kW	0.285	0.485	0.565
		Low	kW	0.240	0.350	0.520
Running current		Extra High	A	1.33	2.37	2.56
		High	A	1.24	2.14	2.51
		Low	A	1.03	1.54	2.31
Fan unit	Standard air flow	Extra High	m³/h	500	800	950
		High	m³/h	500	800	950
		Low	m³/h	440	640	820
	External static pressure	Extra High	Pa	95	105	110
		High	Pa	85	85	90
		Low	Pa	95	90	115
	Air flow limit	Lower limit	m³/h	330	480	640
		Upper limit	m³/h	600	960	1140
Humidifier	System			Permeable film humidifier		
	Amount		kg/h	3.0	5.0	6.0
	(*2) Feed water pressure		MPa	0.02~0.49		
Sound pressure		Extra High	dB	36.5	40.0	42.0
		High	dB	35.5	39.0	41.0
		Low	dB	33.5	38.0	39.0
Appearance				Zinc hot dipping steel plate		
Outer dimension	Height		mm	430	430	430
	Width		mm	1140	1189	1189
	Depth		mm	1690	1739	1739
Total weight			kg	91	111	112
Heat exchanger				Finned tube		
Heat-insulating material				Flexible urethane foam		
Air filter				Standard filter (Gravitational method 82%) & High efficiency filter (Colorimetric method 65%)		
Controller				Remote controller (Separately sold parts)		
Connecting piping	Gas side		mm	Ø9.5	Ø12.7	Ø12.7
	Liquid side		mm	Ø6.4	Ø6.4	Ø6.4
Drain port (Nominal dia. mm)				25 (Polyvinyl chloride tube)		
Water supply connection (Port size)				R1/2		

(*1) Cooling and heating capacities are based on the following conditions:

Cooling capacities are based on: indoor temperature: 27 °CDB/19°CWB, Outdoor temperature: 35°CDB

Heating capacities are based on: indoor temperature: 20°CDB, Outdoor temperature: 7 °CDB/6°CWB

Fan is based on Extra High and High

(): The figures in () indicate the heat reclaimed from the heat recovery ventilator.

When calculating the capacity code as indoor units ,please use as below.

MMD-VNK502HEXE: 1HP, MMD-VNK802HEXE: 1.7HP,

MMD-VNK1002HEXE: 2.0HP

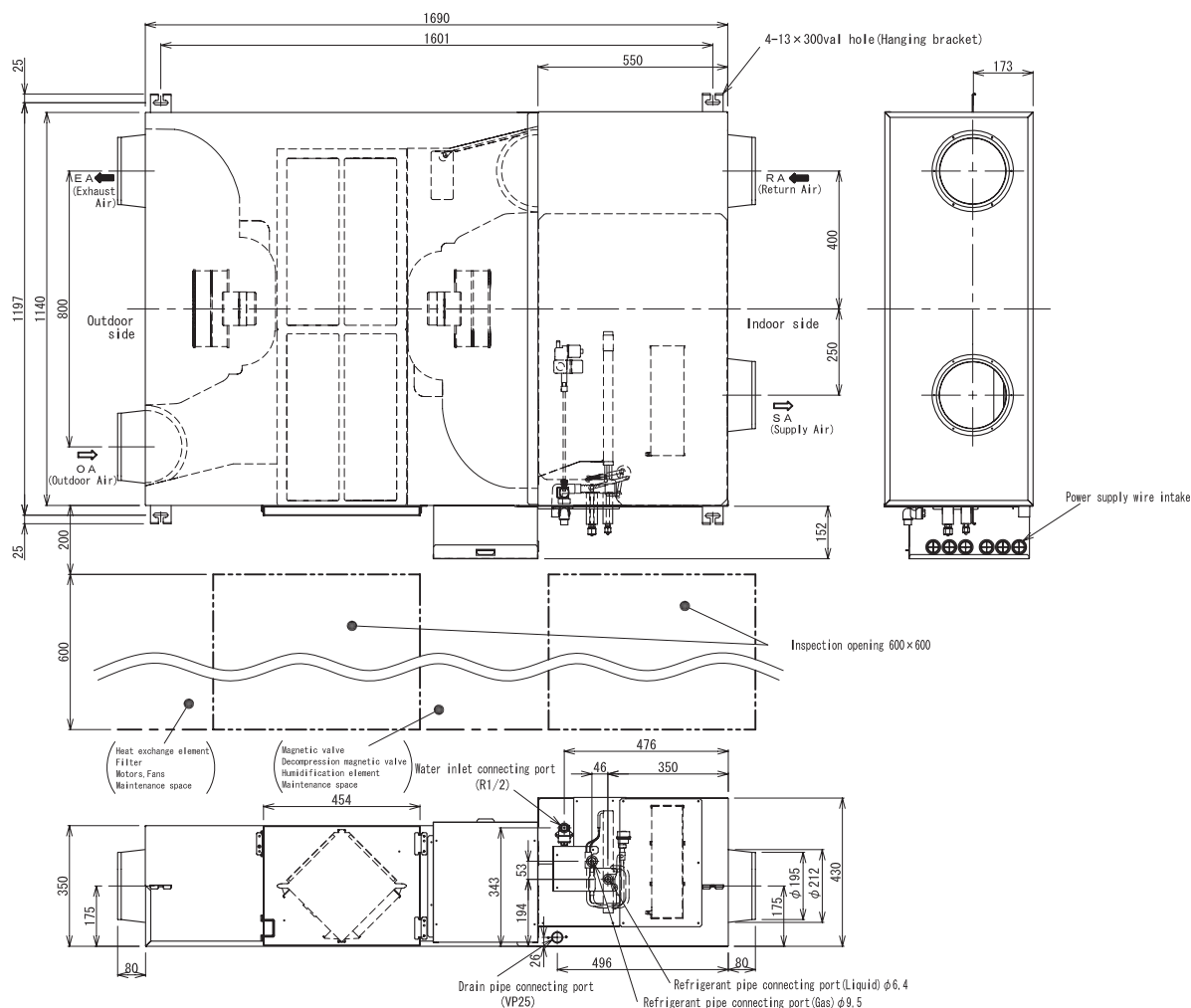
(*2) Water with a hardness of no more than 100 mg/liter must be used as the water which is supplied to the humidifier.

A water softener must be installed if the water to be supplied has a hardness of more than 100 mg/liter.

European market only

2. Dimension

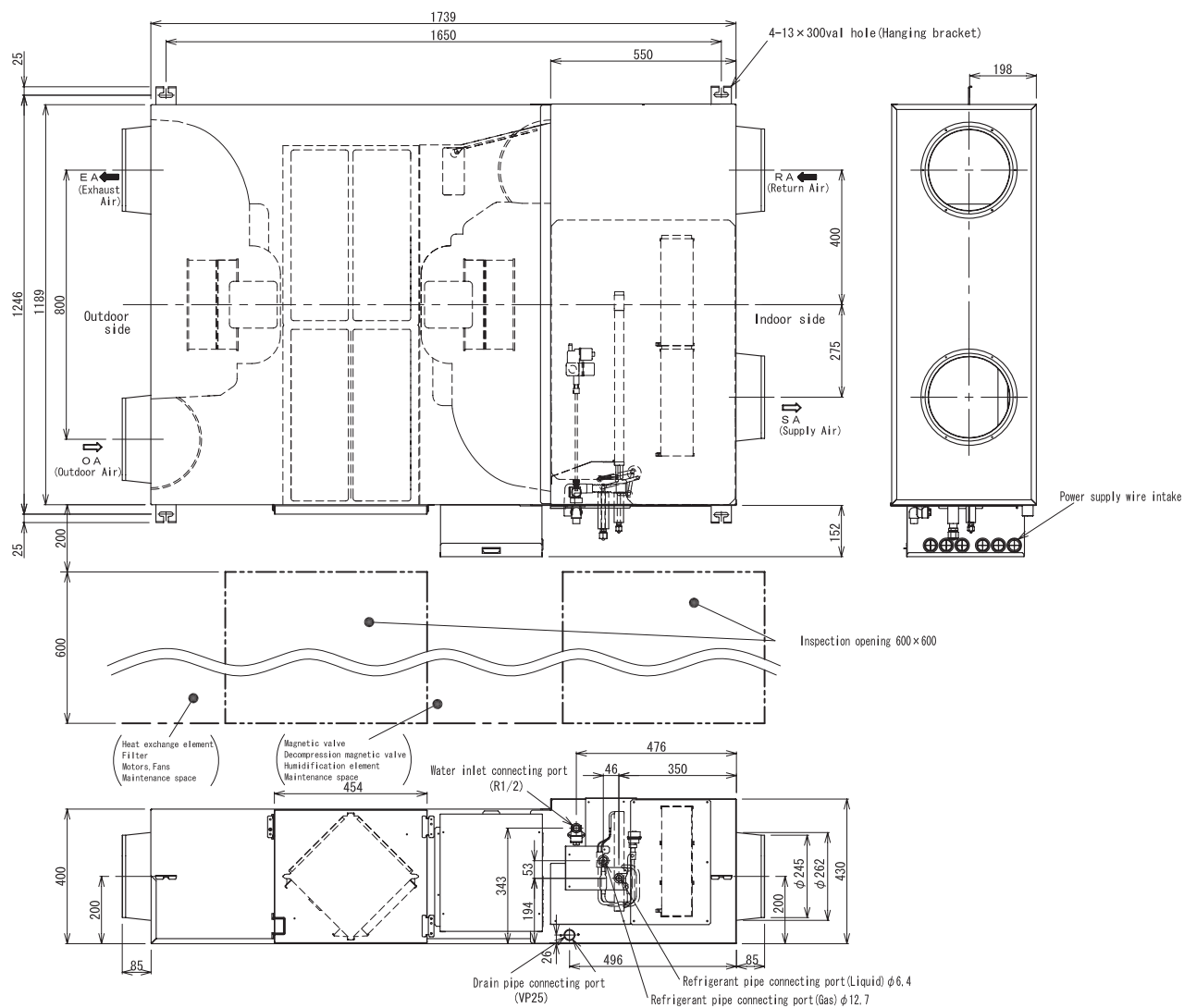
MMD-VNK502HEXE



■ Attention

1. Duct size (Nominal diameter): φ200
2. The above dimensions do not include the thickness of the insulation material on the unit body.

MMD-VNK802HEXE

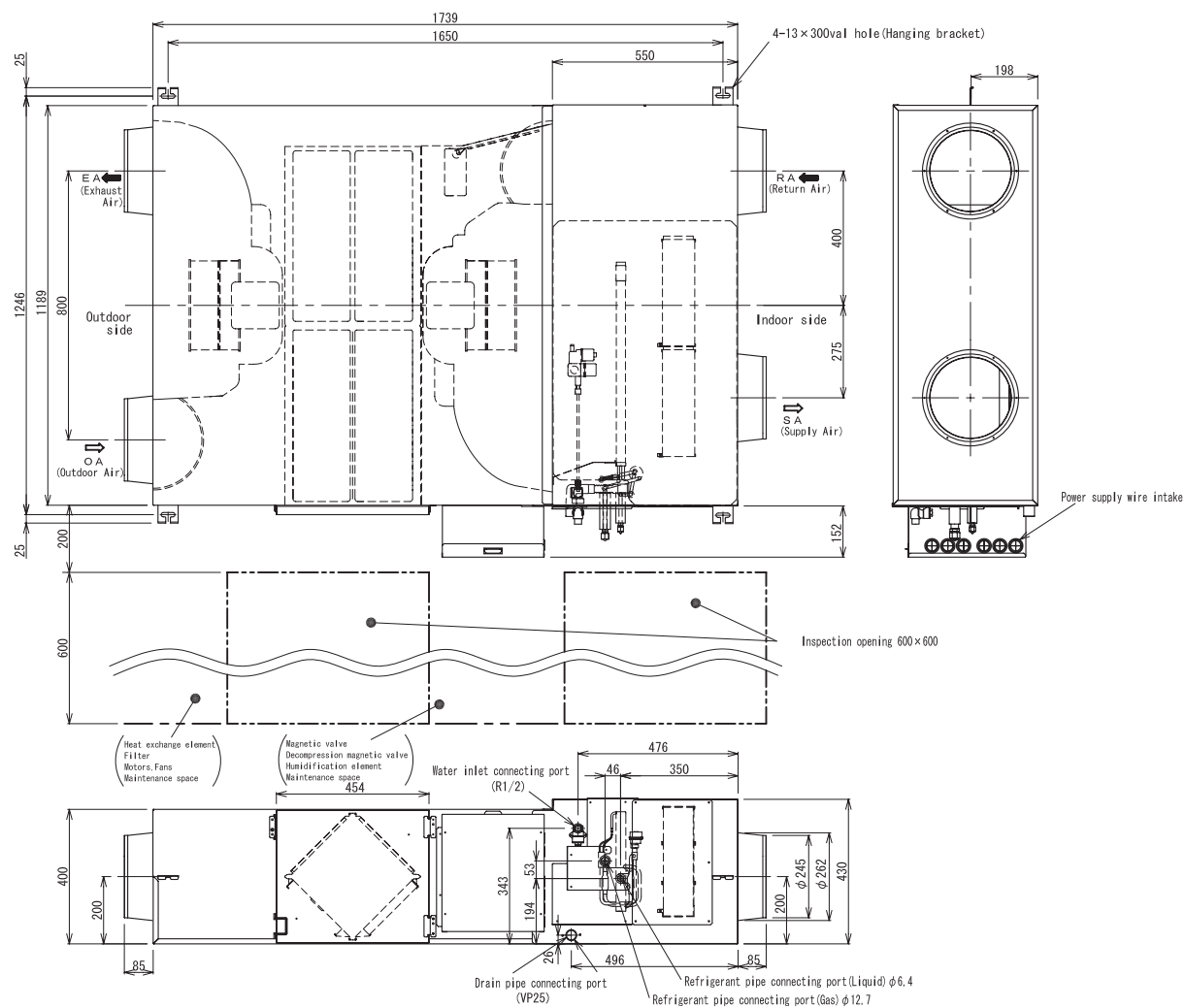


■ Attention

1. Duct size (Nominal diameter): $\phi 250$
2. The above dimensions do not include the thickness of the insulation material on the unit body.

European market only

MMD-VNK1002HEXE



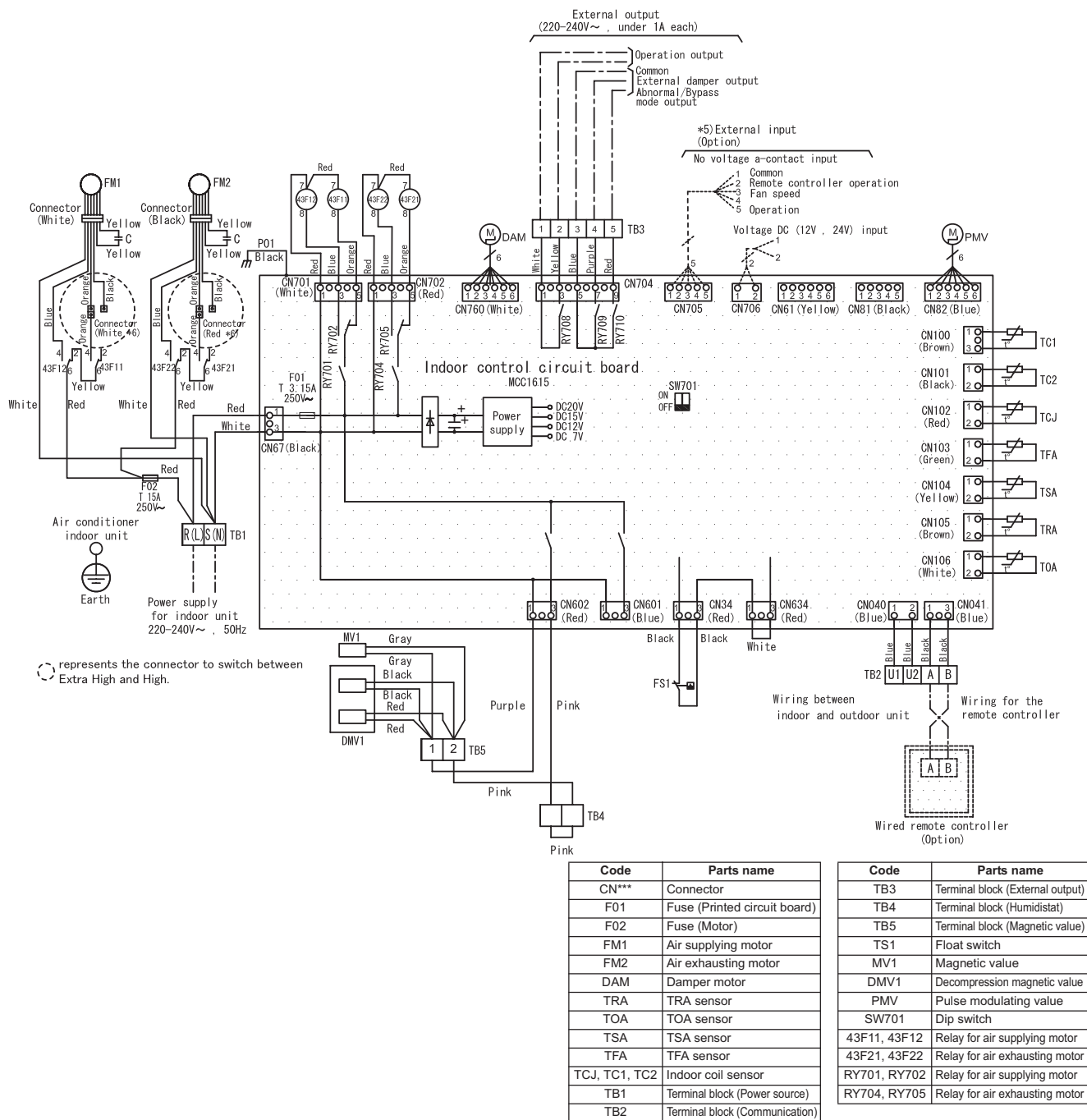
■ Attention

1. Duct size (Nominal diameter): $\phi 250$
2. The above dimensions do not include the thickness of the insulation material on the unit body.

European market only

3. Wiring Diagram

MMD-VNK502HEXE, MMD-VNK802HEXE, MMD-VNK1002HEXE



- The dotted line represents a wire procured locally, and the dashed line represents an option sold separately.
- represents a terminal block, represents a connection terminal, represents a connector on the printed circuit board and represents a short circuit connector.
- represents a protective earth.
- represents a printed circuit board.
- Using a no voltage a-contact input of the external input (option), the following operations are available.
Between 1 and 2: Selecting the remote controller operation (Invalid/Valid)
Between 1 and 3: Adjusting the fan speed (Low/High)
Between 1 and 5: Operation (ON/OFF)
Use a microcurrent contact (DC12V, 1mA). In addition, ON/OFF operation is possible when using a voltage of DC12V or 24V.
- Orange wire (High) is connected as factory default. To switch to "Extra High", connect black wire's connector instead of orange.

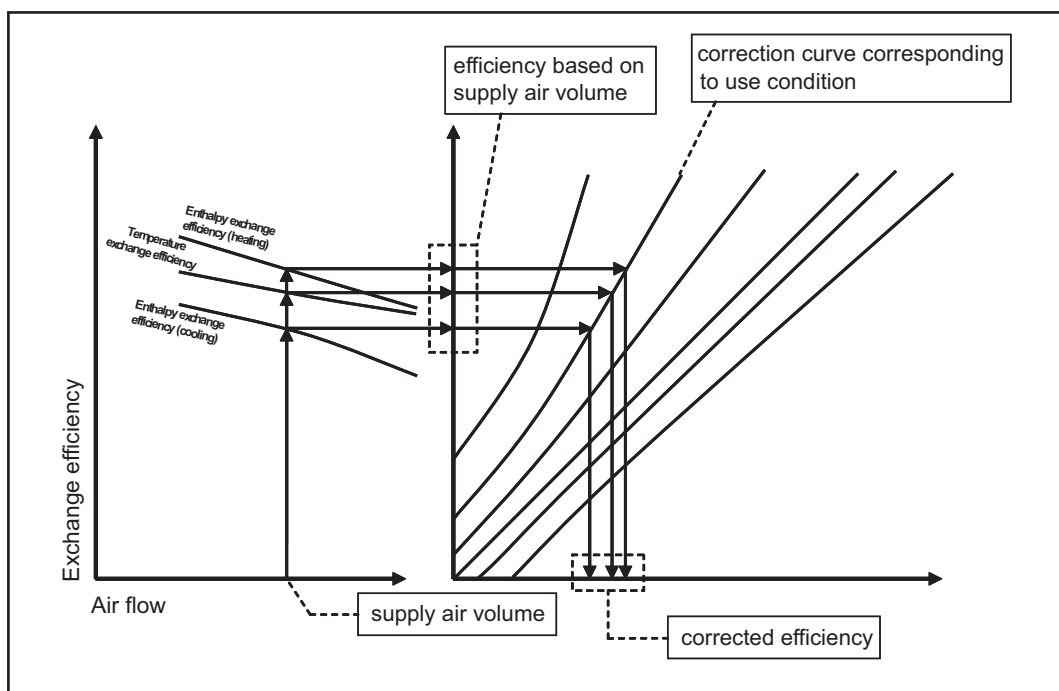
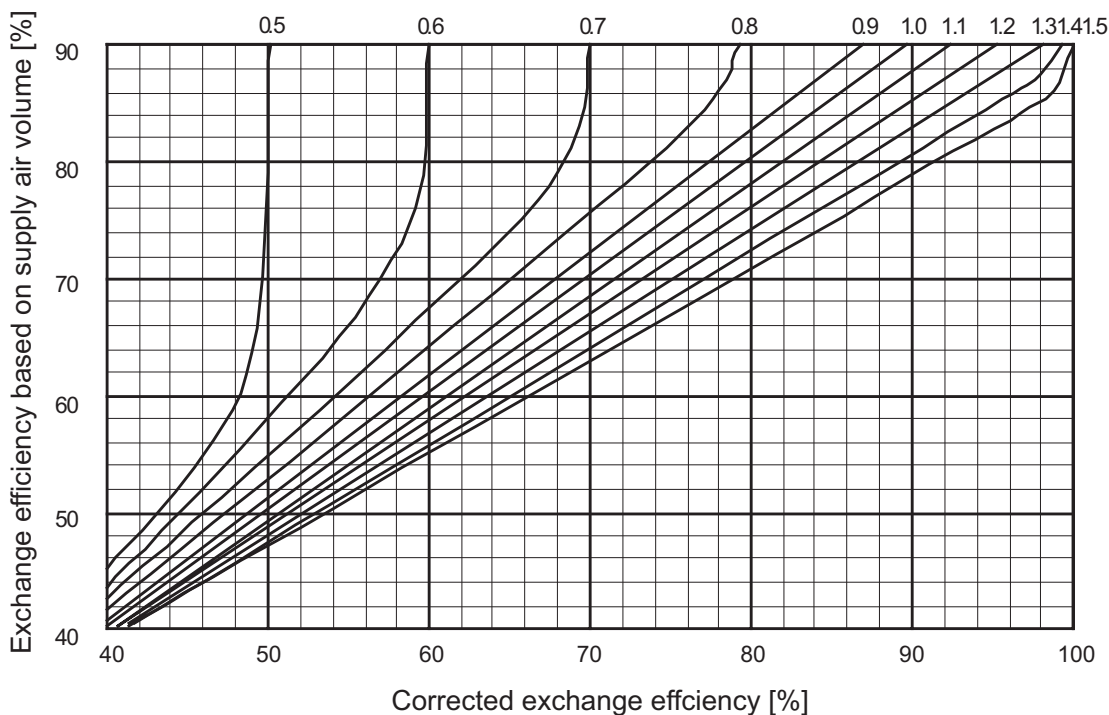
European market only

4. Exchange Efficiency Correction

Exchange efficiency correction when supply air volume and exhaust air volume are different

Exchange efficiency correction curve

Exhaust to supply ratio = Exhaust air volume / Supply air volume



European market only

5. Sensible Capacity Table

Cooling capacity tables

TC: Total Capacity [kW] SHC: Sensible Heat Capacity [kW]

MMD-VNK ***HEXE

Class	DX-coil capacity [kW]	Outdoor temp. [°CDB]	DX-coil inlet temp. [°CWB]											
			16.0		18.0		19.0		20.0		22.0		24.0	
			TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
502	2.8	10.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		12.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		14.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		16.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		18.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		20.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		21.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		23.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		25.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		27.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		29.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		31.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		33.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
		35.0	2.5	1.7	2.7	1.8	2.8	1.8	2.9	1.8	3.0	1.8	3.2	1.8
802	4.5	10.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		12.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		14.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		16.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		18.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		20.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		21.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		23.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		25.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		27.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		29.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		31.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		33.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
		35.0	4.1	2.8	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	5.1	2.8
1002	5.93	10.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		12.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		14.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		16.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		18.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		20.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		21.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		23.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		25.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		27.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		29.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		31.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		33.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		35.0	5.3	3.7	5.7	4.0	5.9	4.0	6.1	4.0	6.4	3.9	6.8	3.8
		37.0	5.3	3.7	5.7	3.9	5.9	3.9	6.1	3.9	6.4	3.9	6.7	3.8
		39.0	5.2	3.6	5.6	3.8	5.7	3.8	5.9	3.8	6.2	3.8	6.5	3.7

European market only

Heating capacity tables

TC: Total Capacity [kW] SHC: Sensible Heat Capacity [kW]

MMD-VNK ***HEXE

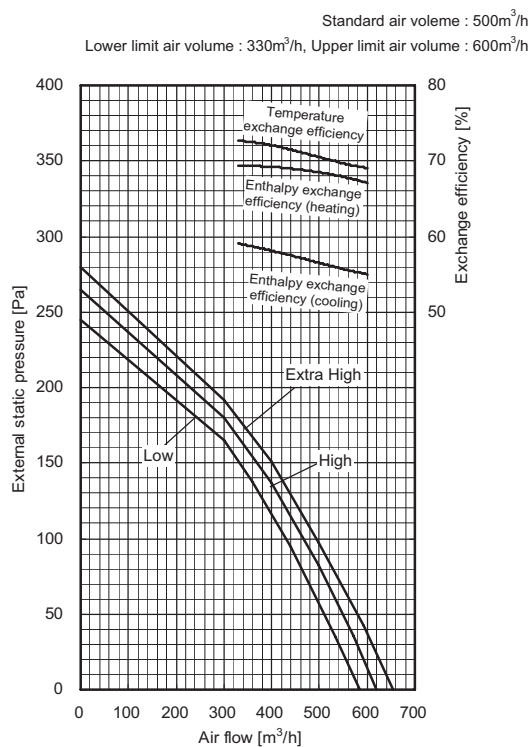
Class	DX-coil capacity [kW]	Outdoor temp. [°CWB]	DX-coil inlet temp. [°CDB]				
			16.0	18.0	20.0	22.0	24.0
			SHC	SHC	SHC	SHC	SHC
502	3.2	-15.0	1.9	1.8	1.8	1.8	1.7
		-13.0	2.0	2.0	2.0	1.9	1.9
		-11.0	2.2	2.1	2.1	2.0	2.0
		-10.0	2.2	2.2	2.2	2.1	2.1
		-8.0	2.4	2.3	2.3	2.2	2.2
		-6.0	2.5	2.4	2.4	2.3	2.3
		-4.0	2.5	2.4	2.3	2.3	2.2
		-2.0	2.5	2.5	2.4	2.4	2.3
		0.0	2.6	2.7	2.6	2.5	2.5
		2.0	2.8	2.8	2.7	2.6	2.6
		4.0	3.2	3.1	3.0	3.0	2.9
		6.0	3.3	3.3	3.2	3.1	3.0
		8.0	3.3	3.3	3.2	3.1	3.0
		10.0	3.3	3.3	3.2	3.1	3.0
		12.0	3.3	3.3	3.2	3.1	3.0
		14.0	3.3	3.3	3.2	3.1	3.0
802	4.8	-15.0	2.8	2.8	2.7	2.6	2.6
		-13.0	3.0	3.0	2.9	2.9	2.8
		-11.0	3.3	3.2	3.1	3.1	3.0
		-10.0	3.4	3.3	3.2	3.2	3.1
		-8.0	3.6	3.5	3.4	3.3	3.3
		-6.0	3.7	3.6	3.6	3.5	3.4
		-4.0	3.7	3.5	3.5	3.4	3.3
		-2.0	3.8	3.7	3.6	3.5	3.4
		0.0	3.9	4.0	3.9	3.8	3.7
		2.0	4.2	4.1	4.1	4.0	3.9
		4.0	4.7	4.7	4.6	4.5	4.3
		6.0	5.0	4.9	4.8	4.7	4.6
		8.0	5.0	4.9	4.8	4.7	4.6
		10.0	5.0	4.9	4.8	4.7	4.6
		12.0	5.0	4.9	4.8	4.7	4.6
		14.0	5.0	4.9	4.8	4.7	4.6
1002	6.6	-15.0	3.9	3.8	3.7	3.6	3.5
		-13.0	4.2	4.1	4.0	3.9	3.8
		-11.0	4.5	4.4	4.3	4.2	4.1
		-10.0	4.6	4.5	4.4	4.3	4.2
		-8.0	4.9	4.8	4.7	4.6	4.5
		-6.0	5.1	5.0	4.9	4.8	4.6
		-4.0	5.1	4.9	4.8	4.7	4.5
		-2.0	5.2	5.1	5.0	4.9	4.7
		0.0	5.4	5.5	5.4	5.2	5.1
		2.0	5.8	5.7	5.6	5.4	5.3
		4.0	6.5	6.4	6.3	6.1	6.0
		6.0	6.9	6.7	6.6	6.4	6.3
		8.0	6.9	6.7	6.6	6.4	6.3
		10.0	6.9	6.7	6.6	6.4	6.3
		12.0	6.9	6.7	6.6	6.4	6.3
		14.0	6.9	6.7	6.6	6.4	6.3

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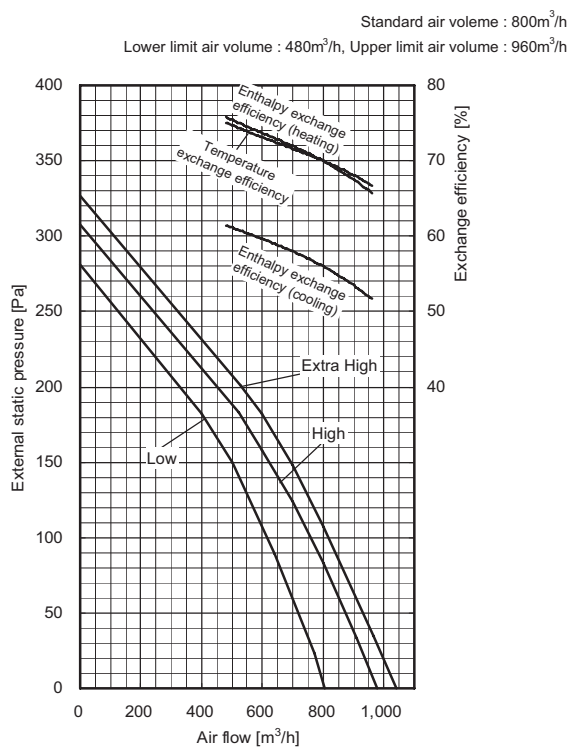
6. Fan Characteristics

----- 230V, 50Hz

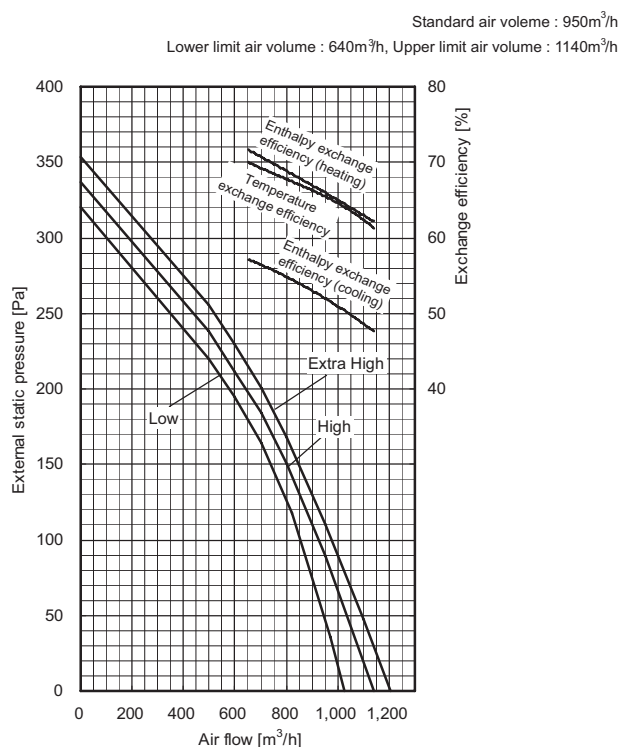
MMD-VNK502HEXE



MMD-VNK802HEXE

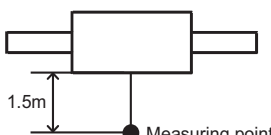


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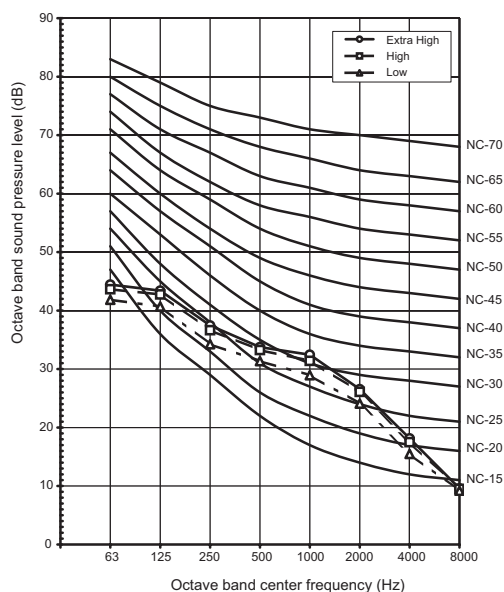


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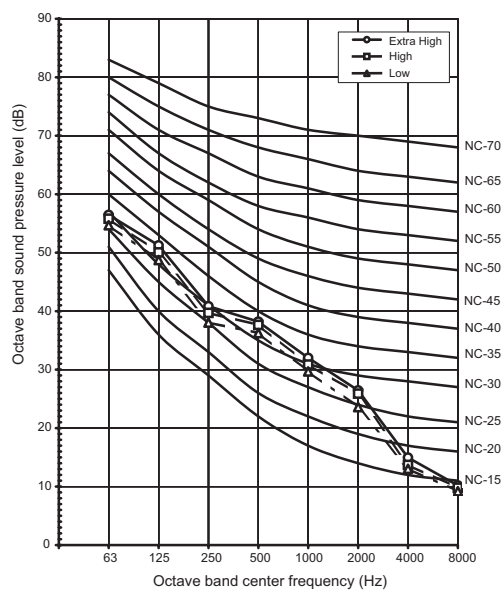
7. Sound Characteristics (NC Curve)

Model name	Power supply (phase/Hz/V)		Sound pressure level (dB)		
			Extra High	High	Low
MMD-VNK502HEXE	1 phase / 50Hz / 220V-240V	Under from body 1.5m 	36.5	35.5	33.5
MMD-VNK802HEXE			40.0	39.0	38.0
MMD-VNK1002HEXE			42.0	41.0	39.0

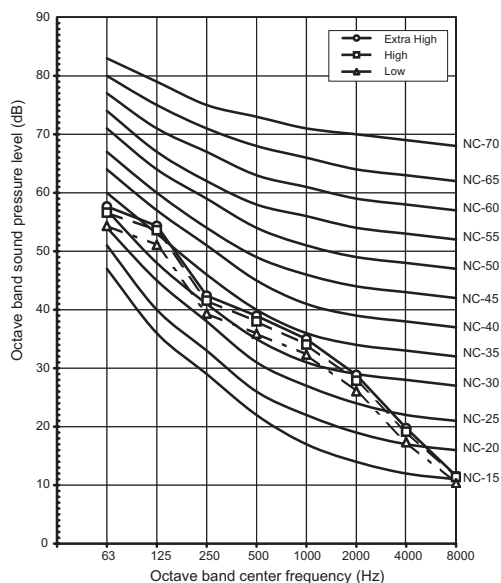
MMD-VNK502HEXE



MMD-VNK802HEXE

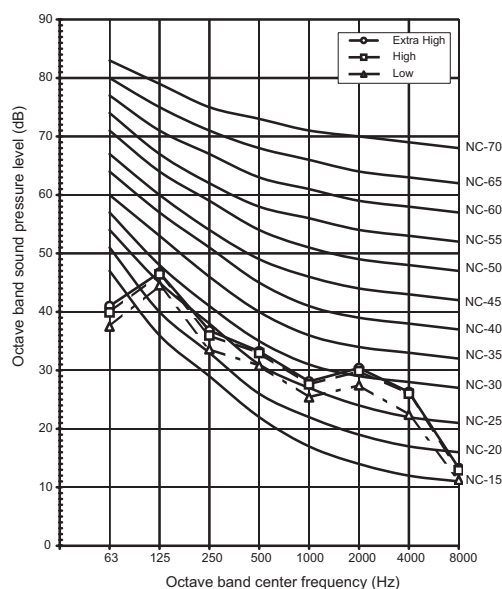


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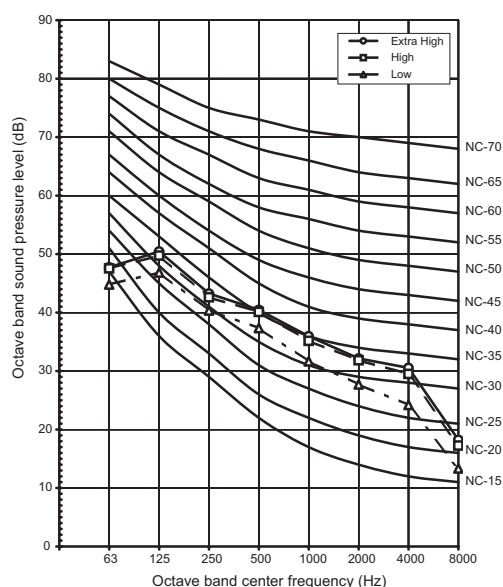


Model name	Power supply (phase/Hz/V)		Sound pressure level (dB)		
			Extra High	High	Low
MMD-VNK502HEXE	1 phase / 50Hz / 220V-240V		37.0	37.0	34.5
MMD-VNK802HEXE			42.5	42.0	38.5
MMD-VNK1002HEXE			45.0	45.0	42.5

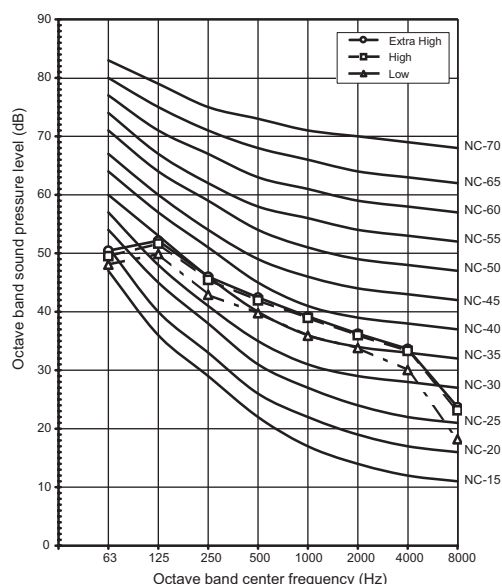
MMD-VNK502HEXE



MMD-VNK802HEXE



MMD-VNK1002HEXE



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8. Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
Air to Air Heat Exchanger with DX coil, Humidifier	MMD-VNK502HEXE	230-1-50	198	264	0.124 x 2	1.5	1.7	15
	MMD-VNK802HEXE	230-1-50	198	264	0.217 x 2	2.6	2.9	15
	MMD-VNK1002HEXE	230-1-50	198	264	0.284 x 2	2.9	3.4	15

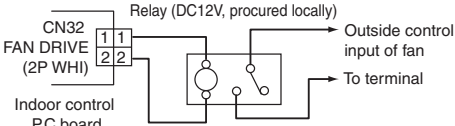
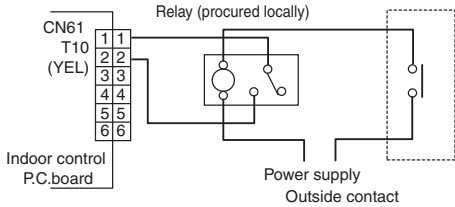
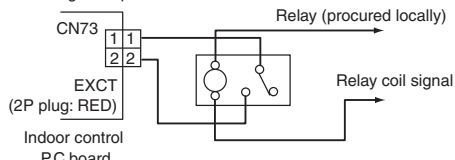
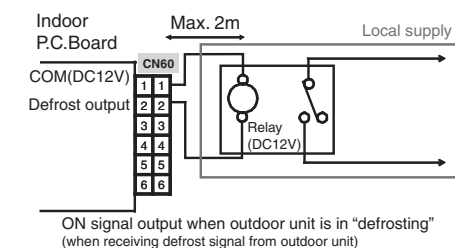
MCA : Minimum Circuit Amps

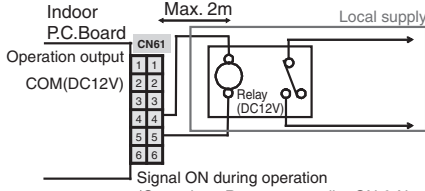
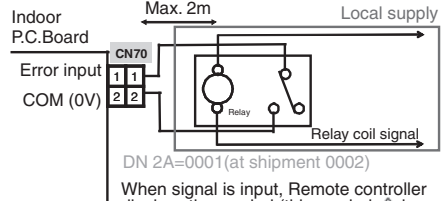
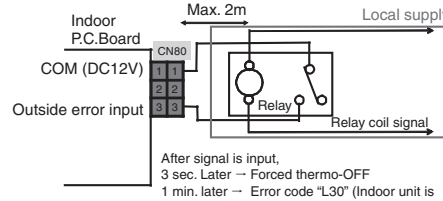
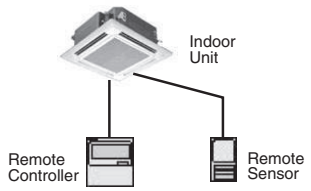
FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

Application controls of indoor unit

No	Control name	Function	Setting method																
1	Function change	Required functions to enable the applied control of the system. (Ex. Setup of TA sensor, body TA sensor / remote controller sensor)	Item code (DN) setting from wired remote controller																
2	Ventilation fan control from remote controller	ON/OFF control can be operated from the wired remote controller when the Heat Exchange Ventilator or ventilation fan is installed in the system. 	Setting from wired remote controller + TCB-KBCN32VEE (cable) Relay (local supply)																
3	Leaving-ON prevention control	Using a door switch or card entry system etc, the leaving-ON of the indoor unit can be prevented, this is done by the setting of the remote controller and relay wiring.  <table border="1"><thead><tr><th>DN 2E</th><th>J01</th><th>Action</th></tr></thead><tbody><tr><td>0000</td><td></td><td>Pulse input ON OFF Pulse width 200 to 300ms Pulse interval 200ms or more</td></tr><tr><td>(At shipment)</td><td></td><td>Static input ON OFF</td></tr><tr><td>0001</td><td></td><td>Leaving ON prevention control Prohibit Mode ON/OFF Reset Permit Mode OFF Mode ON/OFF Prohibit Mode</td></tr><tr><td></td><td></td><td>No action Heating = Lowest set point Cool/Dry = Highest set point Auto/Fan = neglect</td></tr></tbody></table>	DN 2E	J01	Action	0000		Pulse input ON OFF Pulse width 200 to 300ms Pulse interval 200ms or more	(At shipment)		Static input ON OFF	0001		Leaving ON prevention control Prohibit Mode ON/OFF Reset Permit Mode OFF Mode ON/OFF Prohibit Mode			No action Heating = Lowest set point Cool/Dry = Highest set point Auto/Fan = neglect	Setting from wired remote controller + TCB-KBCN61HAE (cable) Relay (local supply)	
DN 2E	J01	Action																	
0000		Pulse input ON OFF Pulse width 200 to 300ms Pulse interval 200ms or more																	
(At shipment)		Static input ON OFF																	
0001		Leaving ON prevention control Prohibit Mode ON/OFF Reset Permit Mode OFF Mode ON/OFF Prohibit Mode																	
		No action Heating = Lowest set point Cool/Dry = Highest set point Auto/Fan = neglect																	
4	Demand control	Thermostat-OFF operation by relay signal. • Wiring example 	TCB-KBCN73DEE (cable) Relay (local supply)																
5	Operation status signal output	 ON signal output when outdoor unit is in "defrosting" (when receiving defrost signal from outdoor unit) 12v output 1pin Defrosting 2pin, Thermo-on 3pin, Cooling 4pin, Heating 5pin, Indoor fan output 6pin output	TCB-KBCN60OPE (cable) Relay (local supply)																

No	Control name	Function	Setting method	Reference No.
6	Operation output Alarm out put	 Indoor P.C.Board Operation output COM(DC12V) Max. 2m Local supply Relay (DC12V) Signal ON during operation (Operation =Remote controller ON & No alarm) [Note] Individual signal output group control is available.If follower indoor unit generates alarm, signal become OFF in this indoor unit only. Alarm output No. 6pin	TCB-KBCN61HAE (cable) Relay (local supply)	
7	Option error input	 Indoor P.C.Board Error input COM (0V) Max. 2m Local supply Relay Relay coil signal DN 2A=0001(at shipment 0002) When signal is input, Remote controller displays the symbol (this symbol  is displayed even when RC is off) Air conditioner dose not stop.	TCB-KBCN70OAE (cable) Relay (local supply)	
8	Outside error input	 Indoor P.C.Board COM (DC12V) Outside error input Max. 2m Local supply Relay Relay coil signal After signal is input, 3 sec. Later -- Forced thermo-OFF 1 min. later -- Error code "L30" (Indoor unit is locked) (Interlock from outside)	TCB-KBCN80EXE (cable) Relay (local supply)	
9	Remote sensor (TCB-TC21LE2)	 Indoor Unit Remote Controller Remote Sensor Remote sensor Remote controller (Master) Remote controller cable (Procured locally) Terminal block for remote controller cable Earth Indoor unit [Note] - Do not change the TA sensor on the remote controller sensor by using item code (DN) setting. 2 remote controllers are prohibited.	Remote sensor (TCB-TC21LE2)	

TOSHIBA AIR CONDITIONING

Advancing the **eco**-evolution

SMMS-i Engineering Data

< Full set version >

Sep, 2011 Second Edition

TOSHIBA CARRIER CORPORATION