

TOSHIBA

E12-341

Leading Innovation >>>

SHRM
SUPER HEAT RECOVERY MULTI



**Engineering
Data Book**

3 compressors & 3 inverters Super Heat Recovery 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 Heat Recovery 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					
 <table border="1"> <tr> <td colspan="2">WARNING</td> </tr> <tr> <td colspan="2">ELECTRICAL SHOCK HAZARD</td> </tr> <tr> <td colspan="2">Disconnect all remote electric power supplies</td> </tr> </table>	WARNING		ELECTRICAL SHOCK HAZARD		Disconnect all remote electric power supplies		WARNING ELECTRICAL SHOCK HAZARD Disconnect all remote electric power supplies before servicing.
WARNING							
ELECTRICAL SHOCK HAZARD							
Disconnect all remote electric power supplies							
 <table border="1"> <tr> <td colspan="2">WARNING</td> </tr> <tr> <td colspan="2">Moving parts.</td> </tr> <tr> <td colspan="2">Do not operate unit with grille removed.</td> </tr> </table>	WARNING		Moving parts.		Do not operate unit with grille removed.		WARNING Moving parts. Do not operate unit with grille removed. Stop the unit before the servicing.
WARNING							
Moving parts.							
Do not operate unit with grille removed.							
 <table border="1"> <tr> <td colspan="2">CAUTION</td> </tr> <tr> <td colspan="2">High temperature parts.</td> </tr> <tr> <td colspan="2">You might get burned when removing this panel.</td> </tr> </table>	CAUTION		High temperature parts.		You might get burned when removing this panel.		CAUTION High temperature parts. You might get burned when removing this panel.
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CAUTION							
BURST HAZARD							
Open the service valves before the operation,							
 <table border="1"> <tr> <td colspan="2">CAUTION</td> </tr> <tr> <td colspan="2">Do not climb onto the fan guard.</td> </tr> <tr> <td colspan="2">Doing so may result in</td> </tr> </table>	CAUTION		Do not climb onto the fan guard.		Doing so may result in		CAUTION Do not climb onto the fan guard. Doing so may result in injury.
CAUTION							
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.



■ Machinery 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.

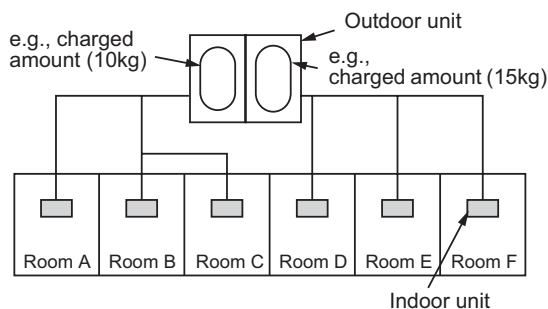
The concentration is as given below.

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

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.

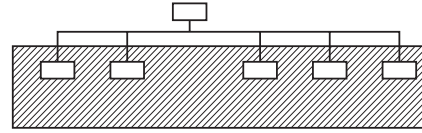
The possible amount of leaked refrigerant gas in rooms D, E and F is 15kg.

Important

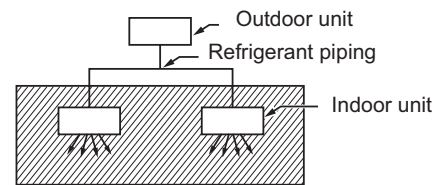
NOTE 2:

The standards for minimum room volume are as follows.

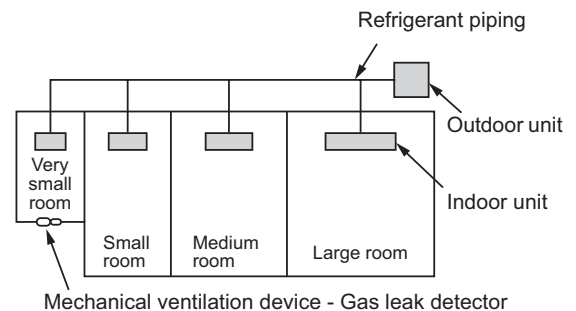
- (1) No partition (shaded portion)



- (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).

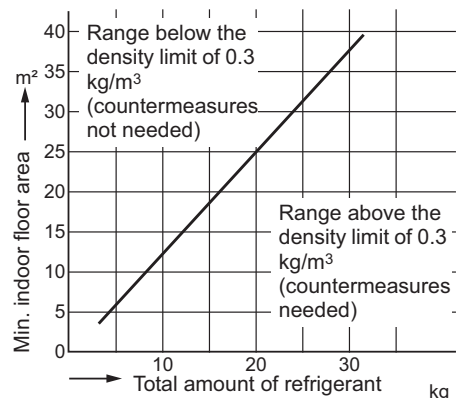


- (3) If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded,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

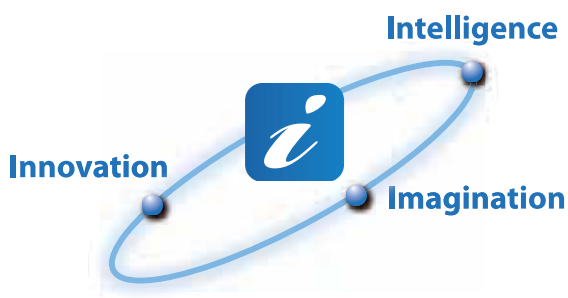




Introducing SHRM-i

Introducing SHRM-i, Super Heat Recovery Multi-i, Toshiba's all-new super-efficient solution for mixed heating and cooling requirements. Building upon the proven technologies of the SMMS-i, the SHRM-i delivers even greater comfort, energy efficiency and utmost reliability. Advanced 3-pipe technology enables heat recovery between indoor units, for unprecedented economy and performance.

The ultimate solution for simultaneous heating and cooling.



**Simultaneous
Heating and Cooling Solution
for Large Buildings**

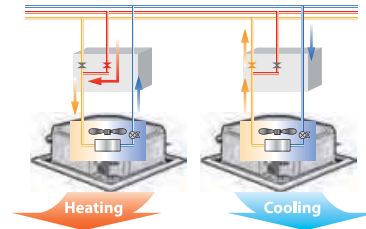


Simultaneous heating and cooling

The SHRM-i allows freely selectable heating and cooling from each indoor unit on a single refrigerant piping system.

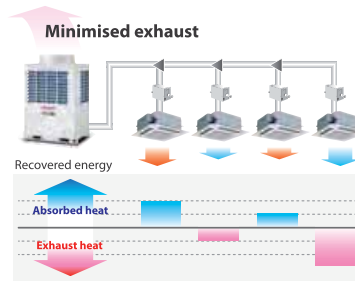
Flexible refrigerant flow

The flow selector unit can automatically shift the flow of refrigerant carried to the indoor unit, thereby switching between heating and cooling modes. Recovered energy from one unit can be used to supply another unit on the same system.



More efficient heat recovery operation than individual heating and cooling only

SHRM-i achieves the highest energy efficiency when both heating and cooling are provided simultaneously, as recovered energy from one zone is recycled for use in another. Highest efficiencies are achieved when heating and cooling capacities are near equal.

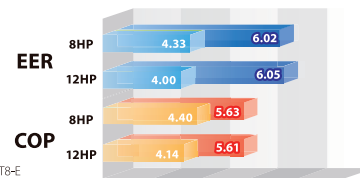


World-class EER and COP at partial load

Adopting the new super-efficient DC twin-rotary compressors and advanced vector-controlled inverters realizes a partial load COP of 5.63 and EER of 6.02 on the 8HP model.

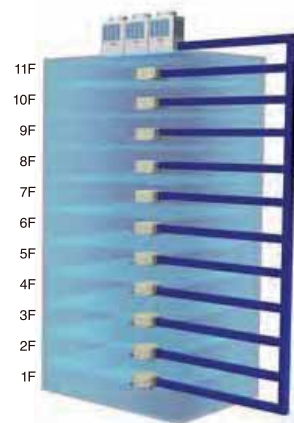
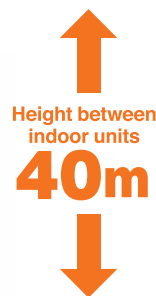
■ Rated
■ 50% partial load

8HP : MMY-MAP0804FT8-E
12HP : MMY-MAP1204FT8-E



Flexible piping configurations mean ease of installation and flexible design

A key advantage of the SHRM-i system is its installation flexibility. Flexible piping configurations allow unsurpassed installation ease. With only a small footprint outdoors, indoor air conditioning units can be placed at a farthest equivalent length of 200m.



*Calculated at 3.5 metres per floor

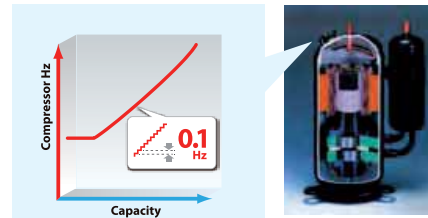


Smart innovations enable ultra-efficient operation

Intelligent systems work collaboratively to provide optimum operational efficiency.

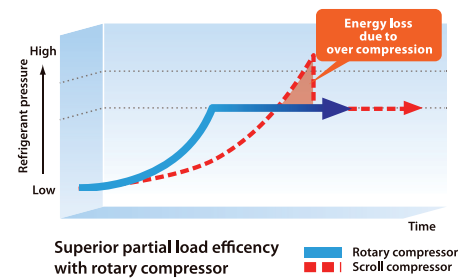
Infinity variable control

Ultra-precise inverter controls the compressor rotation speed in 0.1Hz increments, allowing for fine control over operational loads.



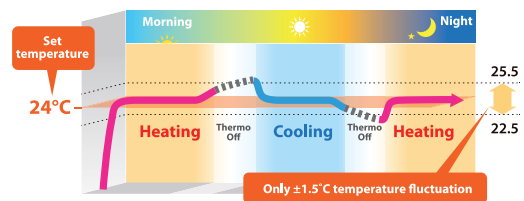
Rotary compressor

Unlike scroll compressors that have to initially exceed capacity in order to achieve target partial load, the rotary compressors can efficiently achieve the same target load with little energy loss.



Precision comfort

What truly makes the SHR*m*-i one the most flexible solutions available is its ability to provide simultaneous heating and cooling. Temperatures can be controlled and maintained precisely throughout the day. Room temperature is monitored and the air conditioning mode is switched to maintain the ideal temperature. As a result, temperature fluctuations are maintained within just $\pm 1.5^{\circ}\text{C}$.



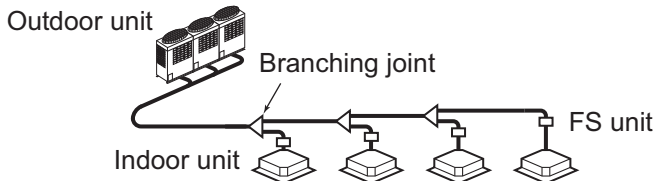


4-1. OUTLINE OF TOSHIBA SHRM-i (Super Heat Recovery Multi System-i)

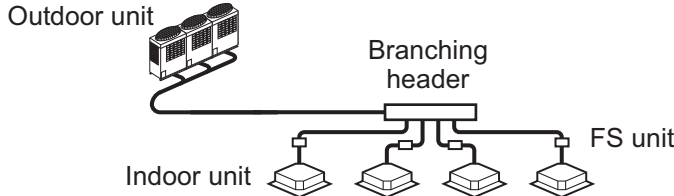
◆ Shortest route design by free branching

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

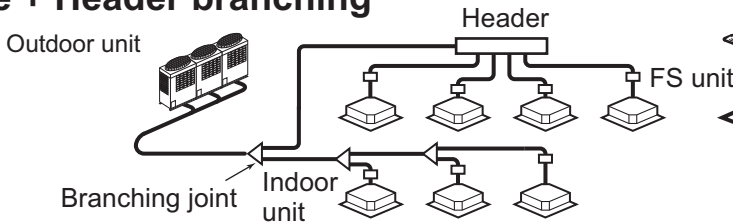
Line branching



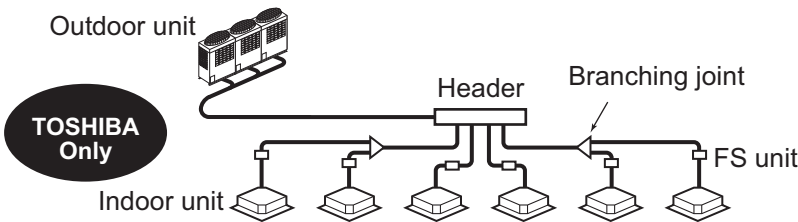
Header branching



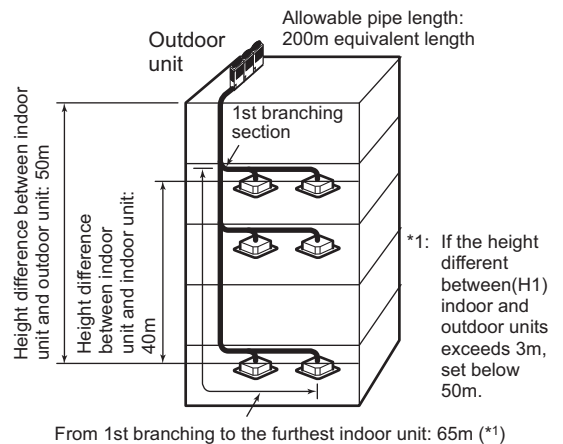
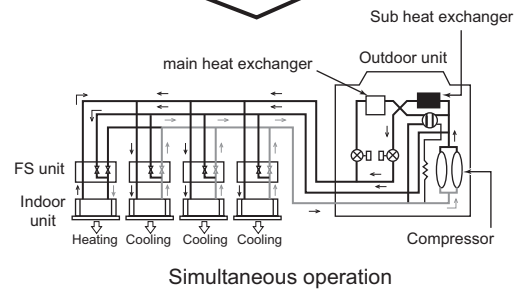
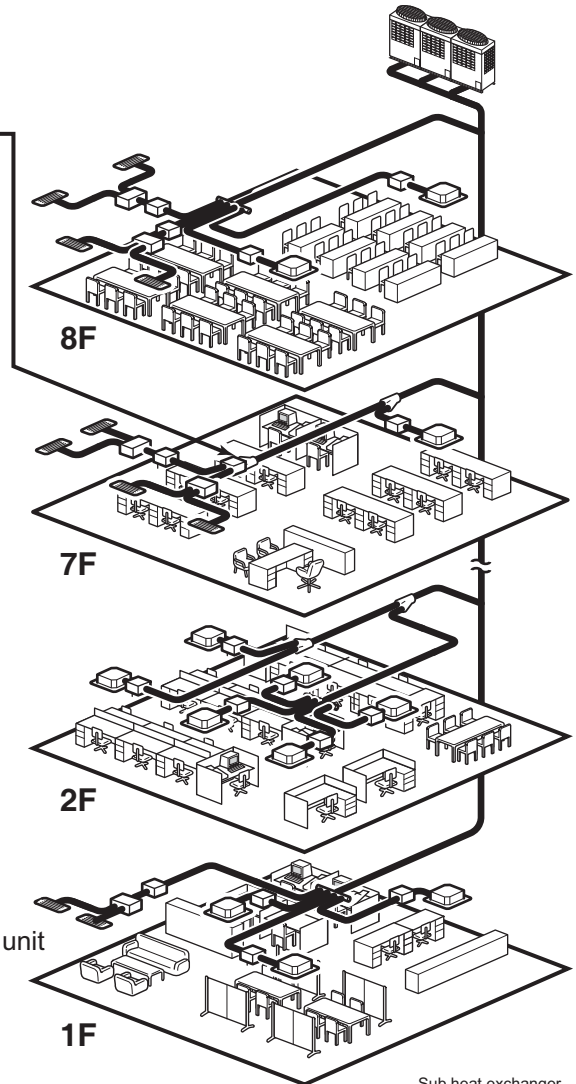
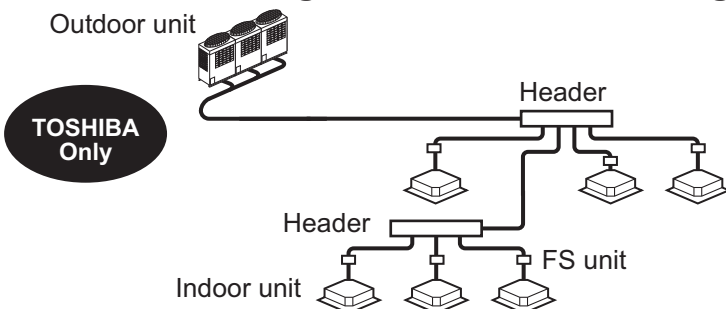
Line + Header branching



Line branching after header branching



Header branching after header branching







4-2. SUMMARY OF SYSTEM EQUIPMENTS

Equipment

Outdoor units


Corresponding HP	Inverter unit				Appearance
	8HP	10HP	12HP	14HP	
Model name MMY-	MAP0804FT8-E	MAP1004FT8-E	MAP1204FT8-E	MAP1404FT8-E	8HP, 10HP  12HP, 14HP 
Cooling capacity (kW)	22.4	28.0	33.5	40.0	
Heating capacity (kW)	25.0	31.5	37.5	45.0	
Power supply	3 phase 50Hz 400V (380-415V)				
Number of connectable indoor units	13	16	20	23	

Combination of outdoor units

Corresponding HP	16HP	18HP	20HP	22HP	24HP	26HP	28HP
Model name MMY-	AP1614FT8-E	AP1814FT8-E	AP2014FT8-E	AP2214FT8-E	AP2414FT8-E	AP2614FT8-E	AP2814FT8-E
Cooling capacity (kW)	45.0	50.4	56.0	61.5	68.0	73.0	78.5
Heating capacity (kW)	50.0	56.5	63.0	69.0	76.5	81.5	88.0
Power supply	3 phase 50Hz 400V (380-415V)						
Combined outdoor units	8HP	10HP	10HP	12HP	14HP	14HP	14HP
	8HP	8HP	10HP	10HP	10HP	12HP	14HP
Number of connectable indoor units	-	-	-	-	-	-	-
	27	30	33	37	40	43	47












Corresponding HP	30HP	32HP	34HP	36HP	38HP	40HP	42HP
Model name MMY-	AP3014FT8-E	AP3214FT8-E	AP3414FT8-E	AP3614FT8-E	AP3814FT8-E	AP4014FT8-E	AP4214FT8-E
Cooling capacity (kW)	85.0	90.0	96.0	101.0	106.5	112.0	118.0
Heating capacity (kW)	95.0	100.0	108.0	113.0	119.5	127.0	132.0
Power supply	3 phase 50Hz 400V (380-415V)						
Combined outdoor units	10HP	12HP	14HP	12HP	14HP	14HP	14HP
	10HP	10HP	10HP	12HP	12HP	14HP	14HP
Number of connectable indoor units	48	48	48	48	48	48	48

FS units (Flow selector units)

Model name	Total capacity of all indoor units	Number of connectable indoor units	Appearance
RBM-Y1123FE	Below 4.0HP	5 or less	
RBM-Y1803FE	4.0 to below 6.4HP	8 or less	
RBM-Y2803FE	6.4 to 10.0HP or less	8 or less	

* Accessory part (Sold separately): Connection cable kit (RBC-CBK15FE) up to 15m.

Branching joints and headers

	Model name	Usage (Classification according to capacity code (*1))				Appearance
Y-shape branching joint (*)(*3)	RBM-BY55FE	Indoor unit: Total below 6.4				
	RBM-BY105FE	Indoor unit: Total 6.4 or more and below 14.2				
	RBM-BY205FE	Indoor unit: Total 14.2 or more and below 25.2				
	RBM-BY305FE	Indoor unit: Total 25.2 or more				
	RBM-BY55E	Indoor unit: Total below 6.4				
	RBM-BY105E	Indoor unit: Total 6.4 or more and below 14.2				
	RBM-BY205E	Indoor unit: Total 14.2 or more and below 25.2				
4-branching header (*)(*4)(*5)	RBM-HY1043FE	Indoor unit: Total below 14.2				
	RBM-HY2043FE	Indoor unit: Total 14.2 or more and below 25.2				
	RBM-HY2043E	Indoor unit: Total 14.2 or more and below 25.2				
8-branching header (*)(*4)(*5)	RBM-HY1083FE	Indoor unit: Total below 14.2				
	RBM-HY2083FE	Indoor unit: Total 14.2 or more and below 25.2				
	RBM-HY1083E	Indoor unit: Total below 14.2				
Branching joint for connection of outdoor units	RBM-BY14FE	Capacity code	Piping at Suction gas side (Y-shape)	Piping at Discharge side (T-shape)	Piping at liquid side (T-shape)	
		Total below 26	 ø31.8 — ø28.6 ø25.4	 ø25.4 — ø25.4	 ø19.1 — ø19.1	
	RBM-BT24FE	Total 26 or more	 ø38.1 — ø38.1 ø28.6	 ø31.8 — ø31.8	 ø22.2 — ø22.2	

*1 "Capacity code" can be obtained by the lists in chapter 4-3 and 4-4.

*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.

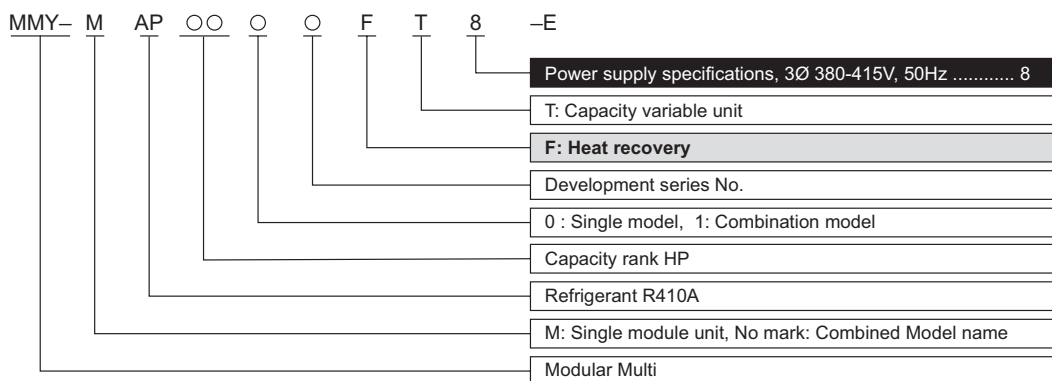
*5 When capacity code of outdoor units is 12 or more and using of 1st branching, use RBM-HY-2043FE/E or RBM-HY-2083FE/E. And if the code is 26 or more, it is not used for 1st branching.



4-3. List of product and combined model name

HP (Capacity code)	Model name MMY-	Number of combined units	Inverter 8HP MMY-	Used Qty	Inverter 10HP MMY-	Used Qty	Inverter 12HP MMY-	Used Qty	Inverter 14HP MMY-	Used Qty
8HP(8)	MAP0804FT8-E	1	MAP0804FT8-E	1						
10HP(10)	MAP1004FT8-E	1			MAP1004FT8-E	1				
12HP(12)	MAP1204FT8-E	1					MAP1204FT8-E	1		
14HP(14)	MAP1404FT8-E	1							MAP1404FT8-E	1
16HP(16)	AP1614FT8-E	2	MAP0804FT8-E	2						
18HP(18)	AP1814FT8-E	2	MAP0804FT8-E	1	MAP1004FT8-E	1				
20HP(20)	AP2014FT8-E	2			MAP1004FT8-E	2				
22HP(22)	AP2214FT8-E	2			MAP1004FT8-E	1	MAP1204FT8-E	1		
24HP(24)	AP2414FT8-E	2			MAP1004FT8-E	1			MAP1404FT8-E	1
26HP(26)	AP2614FT8-E	2					MAP1204FT8-E	1	MAP1404FT8-E	1
28HP(28)	AP2814FT8-E	2							MAP1404FT8-E	2
30HP(30)	AP3014FT8-E	3			MAP1004FT8-E	3				
32HP(32)	AP3214FT8-E	3			MAP1004FT8-E	2	MAP1204FT8-E	1		
34HP(34)	AP3414FT8-E	3			MAP1004FT8-E	2			MAP1404FT8-E	1
36HP(36)	AP3614FT8-E	3					MAP1204FT8-E	3		
38HP(38)	AP3814FT8-E	3					MAP1204FT8-E	2	MAP1404FT8-E	1
40HP(40)	AP4014FT8-E	3					MAP1204FT8-E	1	MAP1404FT8-E	2
42HP(42)	AP4214FT8-E	3							MAP1404FT8-E	3

1. Allocation standard of model name



2. Rang of combined capacity

Number of combined units: 1 to 3 units

Capacity of combined units: 16 HP(16type) to 42 HP(42type)


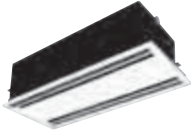
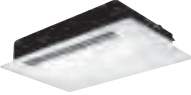

3. Rated conditions

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



4-4. Indoor unit

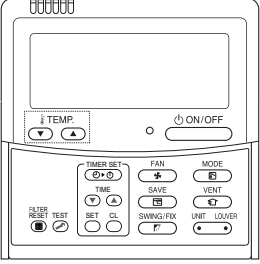
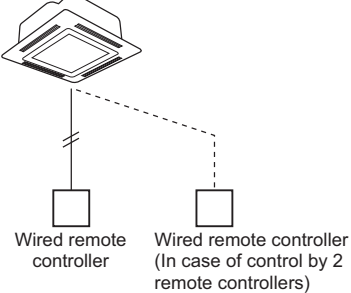
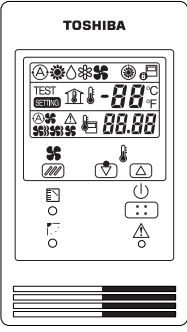
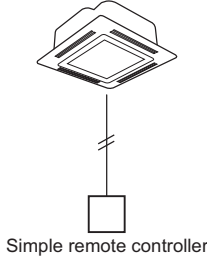

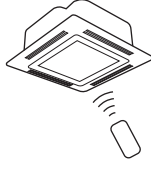

Type	Appearance	Model name	Capacity rank	Capacity code	Cooling capacity (kW)	Heating capacity (kW)		
4-way Air Discharge Cassette Type		MMU-AP0092H	009 type	1.00	2.8	3.2		
		MMU-AP0122H	012 type	1.25	3.6	4.0		
		MMU-AP0152H	015 type	1.70	4.5	5.0		
		MMU-AP0182H	018 type	2.00	5.6	6.3		
		MMU-AP0242H	024 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		
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		
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		
Concealed Duct Type		MMU-AP0244SH-E	024 type	2.50	7.1	8.0		
		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		
Concealed Duct High Static Pressure Type		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		
		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		
Slim Duct Type		MMD-AP0364H-E	036 type	4.00	11.2	12.5		
		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		
		MMD-AP0074SPH-E	007 type	0.80	2.2	2.5		
Ceiling Type		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
Floor Standing Type		MML-AP0244H-E	024 type	2.50	7.1	8.0
		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
Console Type		MMF-AP0564H-E	056 type	6.00	16.0	18.0
		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
Air to Air Heat exchanger with DX-coil Type		MML-AP0184NH-E	018 type	2.00	5.6	6.3
		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) *
Air to Air Heat exchanger with DX-coil, Humidifier Type		MMD-VN1002HEXE	018 type	2.00	8.25(2.32) *	10.92(4.32) *
		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.

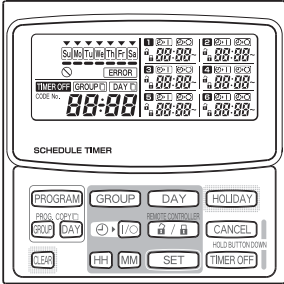
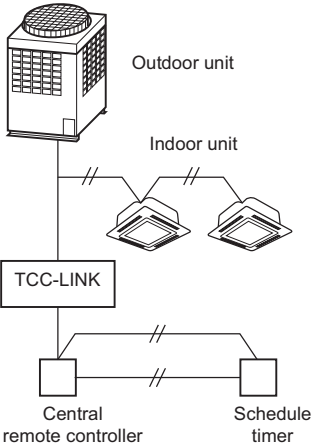
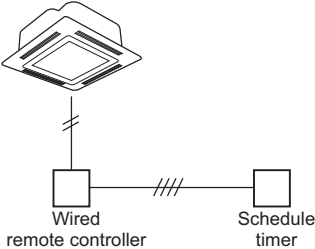
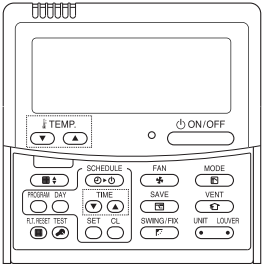
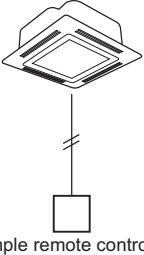
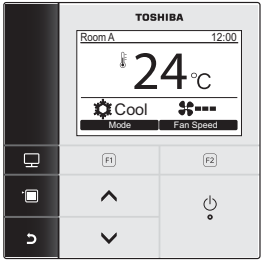
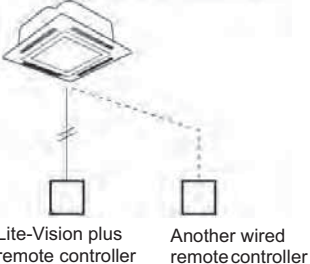
4-5. Remote controller

Name	Model name	Appearance	Application	Function
Wired remote controller	RBC-AMT32E		<p>Connected to indoor unit</p>  <p>Wired remote controller Wired remote controller (In case of control by 2 remote controllers)</p>	<ul style="list-style-type: none"> • 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		<p>Connected to indoor unit</p>  <p>Simple remote controller</p>	<ul style="list-style-type: none"> • Start/Stop • Temperature setting • Change of air flow • Check code display
Wireless remote controller kit	RBC-AX32U(W)-E RBC-AX32U(WS)-E		<p>Connected to indoor unit</p> 	<ul style="list-style-type: none"> • Start/Stop • Mode change • Temperature setting • Change of air flow • Timer function • Control by 2 remote controllers is available. • Check code display <p>RBC-AX32U(W)-E RBC-AX32U(WS)-E (For 4-way Air Discharge Cassette)</p> <p>RBC-AX32CE2 (For Under Ceiling, 1-way Air Discharge Cassette SH)</p> <p>TCB-AX32E2 (For Compact 4-way Cassette, 1-way Air Discharge Cassette YH, Concealed Duct Standard, Slim Duct, Floor Standing Cabinet, Floor Standing)</p> <p>RBC-AX23UW(W)-E (For 2-way Air Discharge Cassette)</p>
	RBC-AX23UW(W)-E			

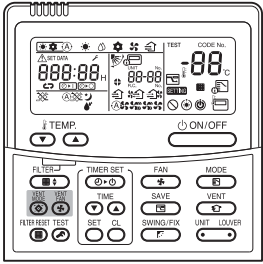
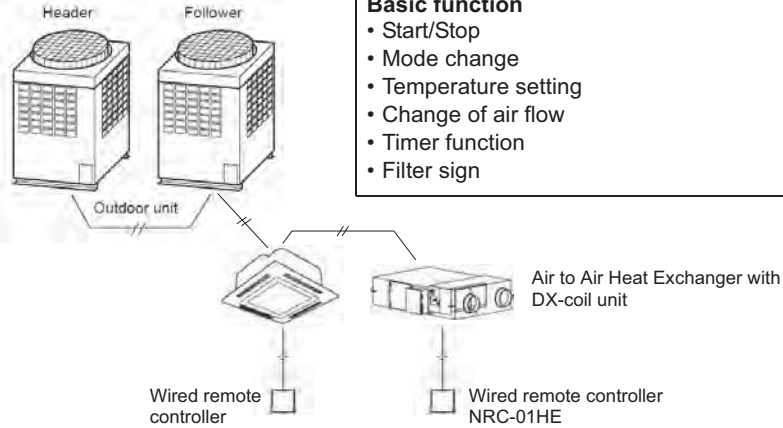


Name	Model name	Appearance	Application	Function
ON-OFF controller	TCB-CC163TLE2		<p>Connected to outdoor unit, indoor unit</p>	<ul style="list-style-type: none"> Individual control up to 16 indoor units. Setting of simultaneous ON/OFF 3 times for each day of the week when combined with schedule timer. Connected to 2 remote controllers is available.
	Central remote controller	TCB-SC642TLE2		<p>Connected to outdoor unit, indoor unit</p>
BMS-CM1280TLE				<ul style="list-style-type: none"> 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



Name	Model name	Appearance	Application	Function
Schedule timer	TCB-EXS21TE		<p>Schedule timer mode</p> 	<p>Schedule timer mode</p> <ul style="list-style-type: none"> • 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 <p>Weekly timer mode</p> <ul style="list-style-type: none"> • 7 types of weekly schedule and 3 programmings per day • Can set ON/OFF by one-minute interval <p>Weekly timer mode</p> <p>Connected to central remote controller or wired remote controller</p> 
Remote controller with schedule timer (7-day timer function)	RBC-AMS41E		<p>Connected to indoor unit</p> 	<ul style="list-style-type: none"> • Clock display • Schedule timer: Possible to program schedule timer (7-day timer) function • Possible to program 8 functions for each day of the week <p>* The following items can be set in program: Operation time, Operation start/stop, Operation mode, Temperature setting, Restriction on button operation.</p>
Lite-Vision plus Remote Controller	RBC-AMS51E-EN/ES		<p>Connected to indoor unit</p> 	<p>Display</p> <ul style="list-style-type: none"> • Full dot display with back light • Multilingual language(11 languages) <ul style="list-style-type: none"> -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 <p>Energy Saving</p> <ul style="list-style-type: none"> • 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 <p>Schedule timer</p> <ul style="list-style-type: none"> • 8 programs per day • Off reminder timer <p>Others</p> <ul style="list-style-type: none"> • Easy to use by simple button • Night operation mode • Key Lock



Name	Model name	Appearance	Application	Function
Wired remote controller for Air to Air Heat Exchanger with DX coil unit	NRC-01HE		 <p style="text-align: center;">(When all A2A HEXs with DX-coil or group operation with standard indoor units, use NRC-01HE.)</p>	<p>Ventilation</p> <ul style="list-style-type: none"> • Ventilation start/stop • Ventilation mode change • Change of ventilation fan speed <p>Basic function</p> <ul style="list-style-type: none"> • Start/Stop • Mode change • Temperature setting • Change of air flow • Timer function • Filter sign

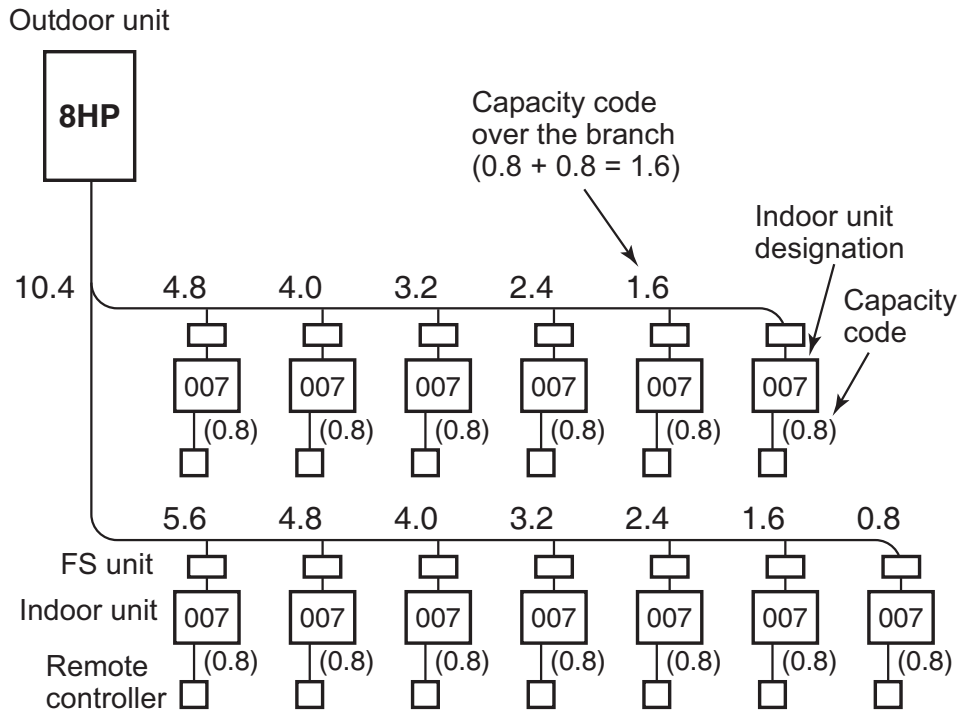


5-1. Basic system (examples)

8 HP system

- Max. indoor unit : 13 units
- Capacity code of indoor unit : (Min. : 5.6
Max. : 10.8

Capacity code
Total 10.4
No. of total units
13

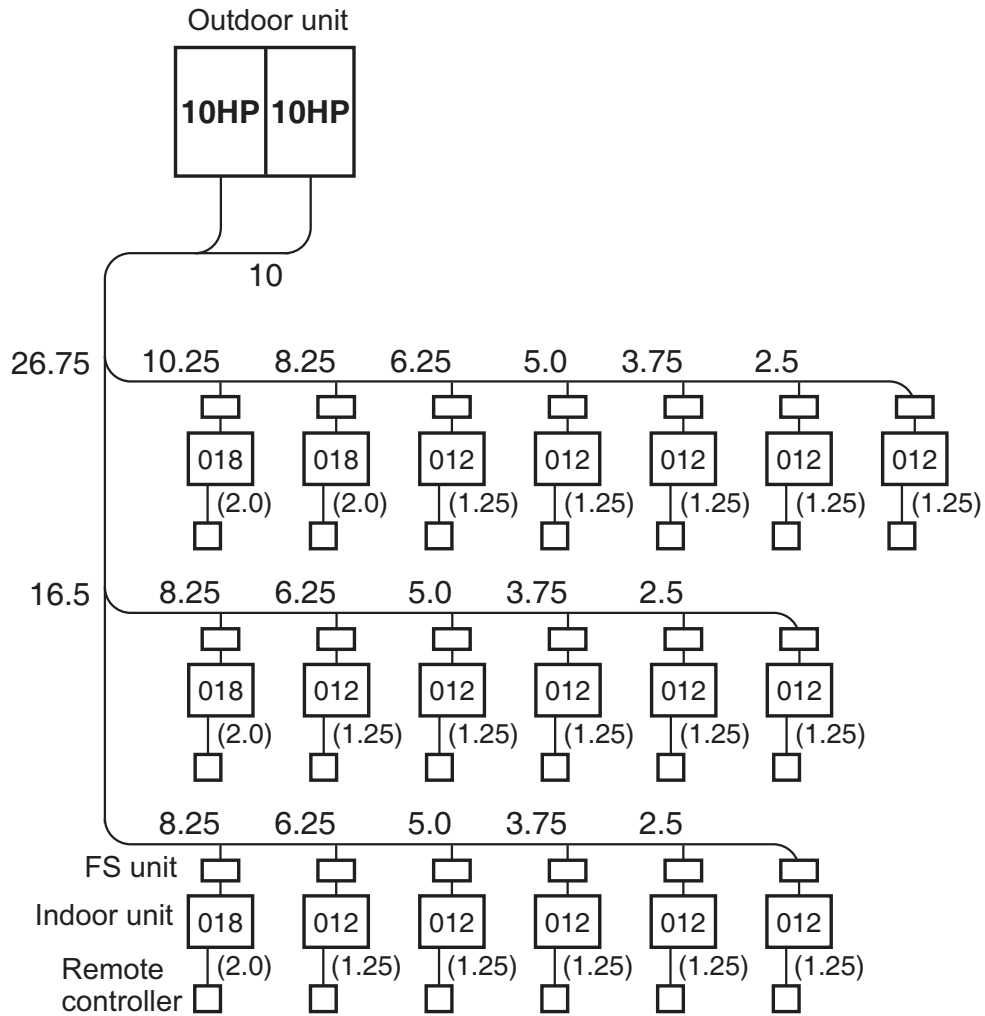




20 HP system

- Max. indoor unit : 33 units
- Capacity code of indoor unit : (Min. : 14
Max. : 27)

Capacity code
Total 26.75
No. of total units
19

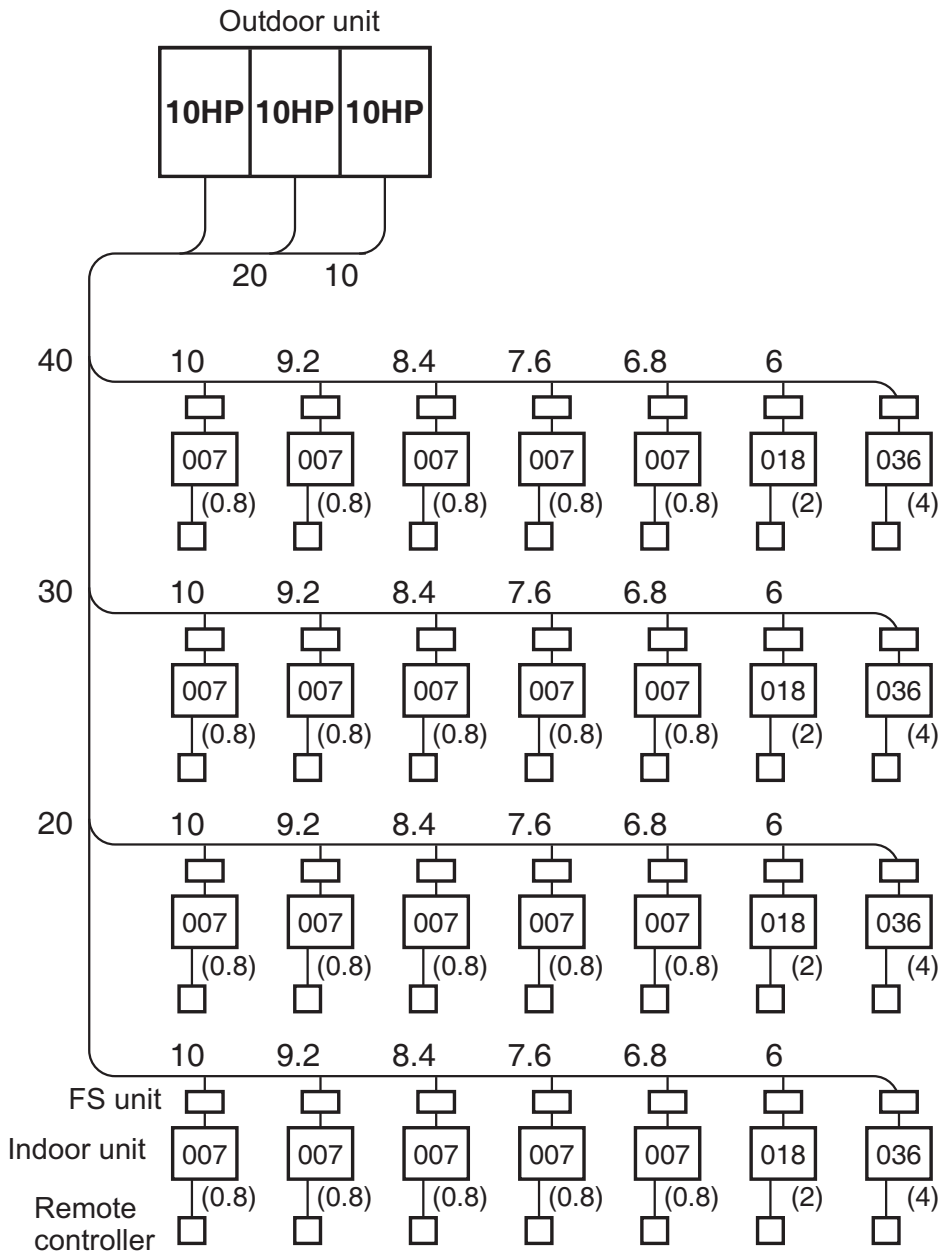




30 HP system

- Max. indoor unit : 48 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min. : 21} \\ \text{Max. : 40.5} \end{array} \right.$

Capacity code
Total 40
No. of total units
28

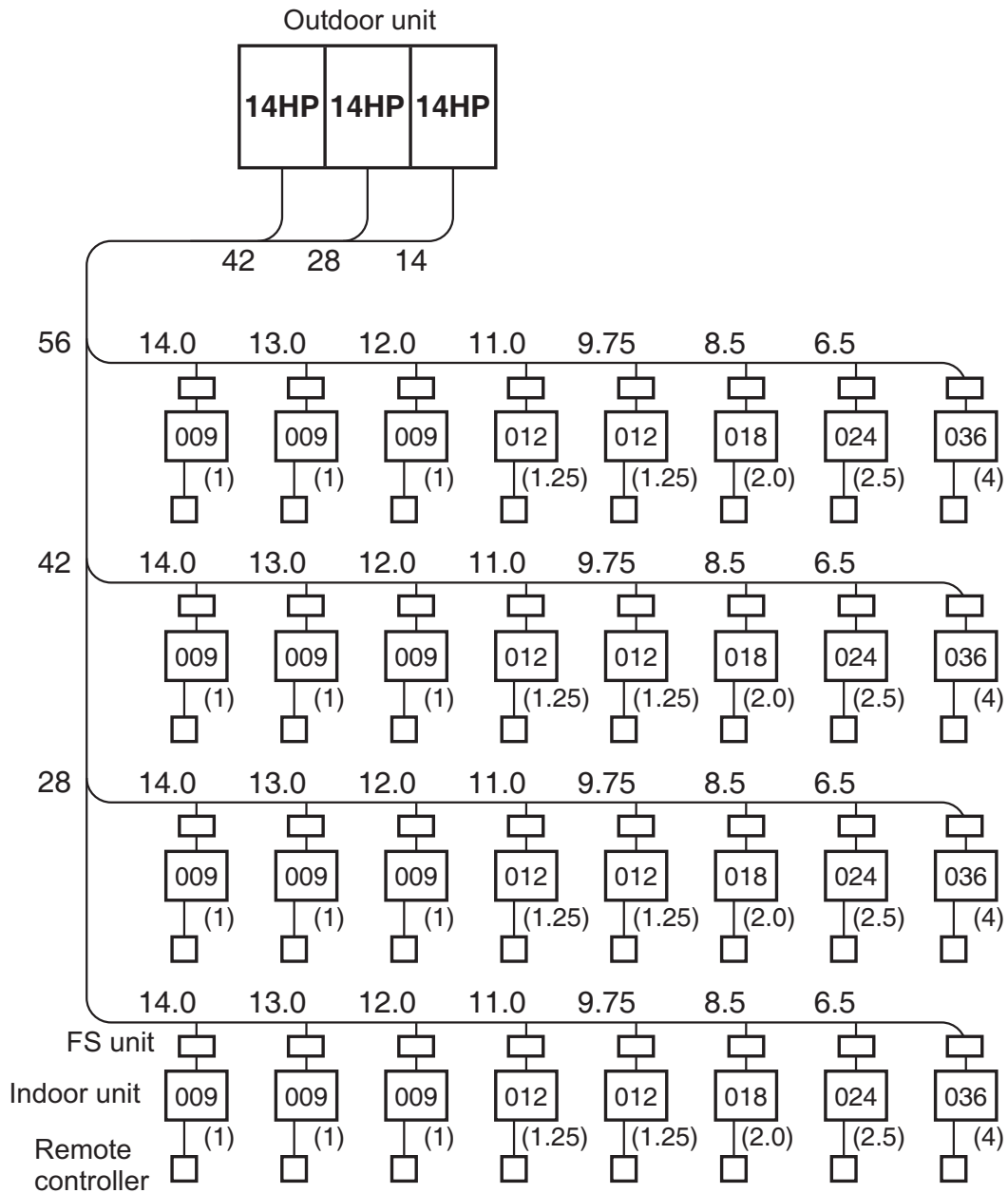




42 HP system

- Max. indoor unit : 48 units
- Capacity code of indoor unit : (Min. : 29.4
Max. : 56.7

Capacity code
Total 56
No. of total units
32





5-2. Air to Air Heat exchanger with DX-coil Type

30 HP system

Connecting limitation

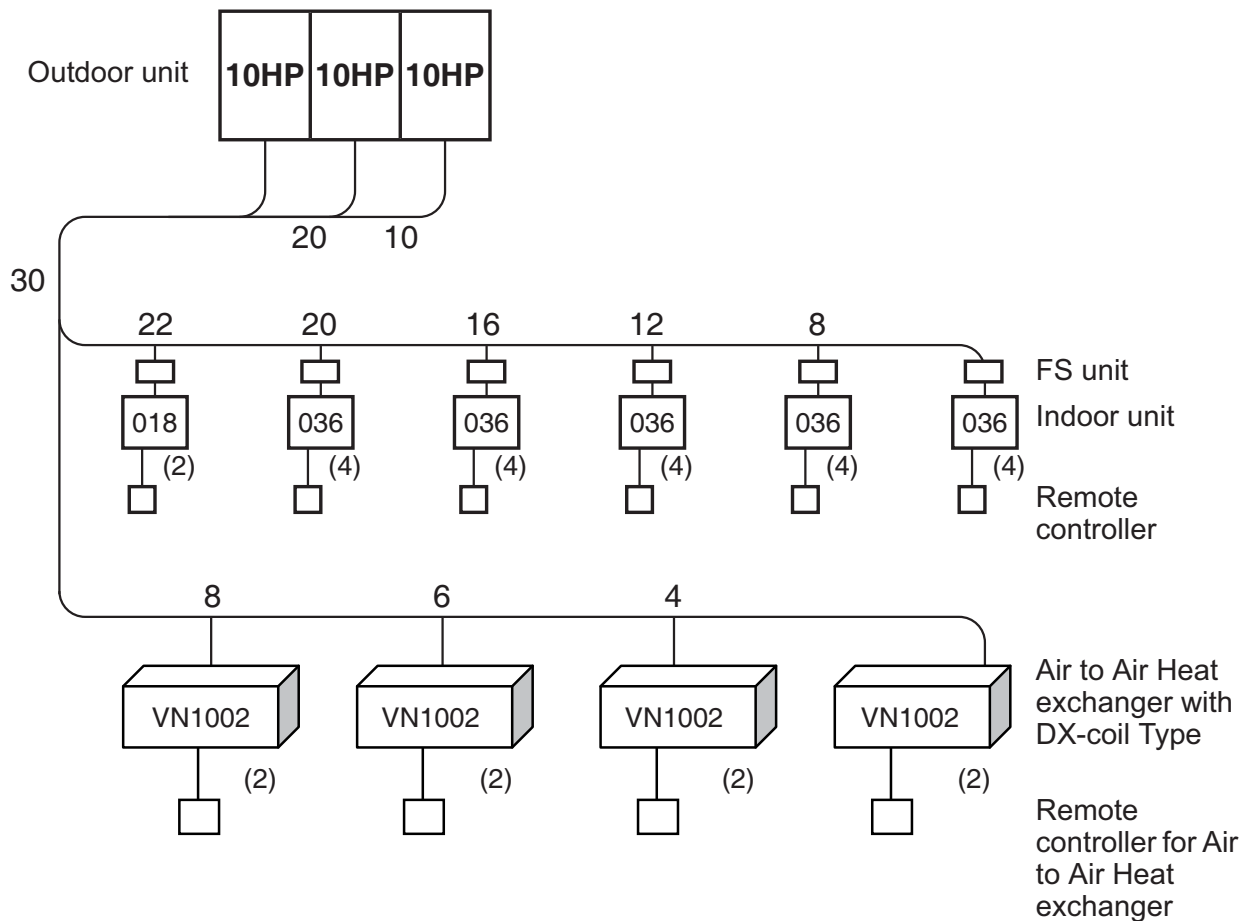
<Ratio against outdoor units>

- The total capacity of Air to Air Heat exchanger with DX-coil Type and the indoor units is restricted to 80 to 135% against the capacity of SHRM-i system.
- When the height between indoor units H2 is bigger than 15m, the maximum ratio is 105%.

<Ratio within indoor unit side>

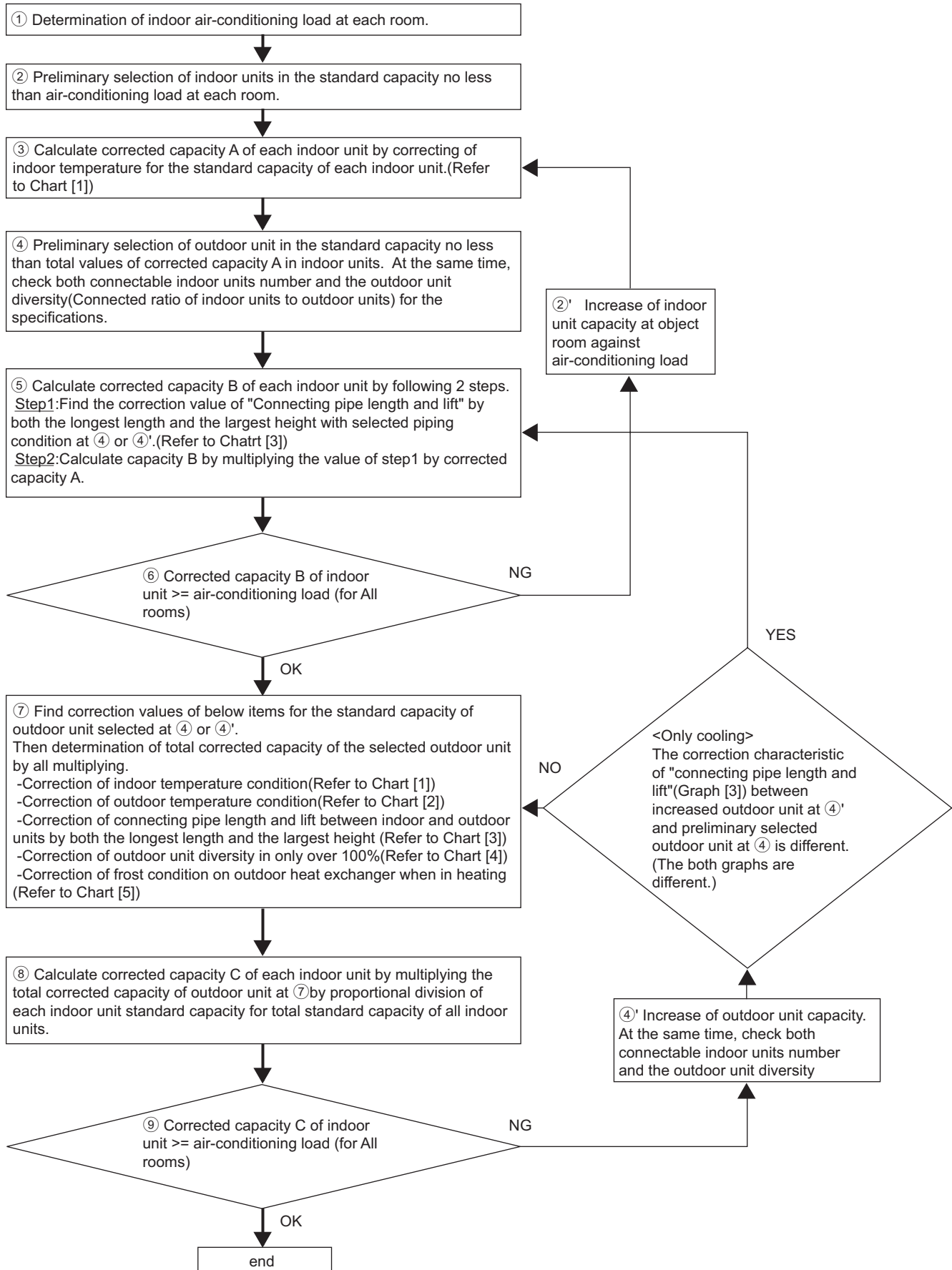
- The allowable total capacity of Air to Air Heat exchanger with DX-coil Type shall be 30% or less against the total capacity of the indoor units including this type.

Capacity code
Total 30
No. of total units
10



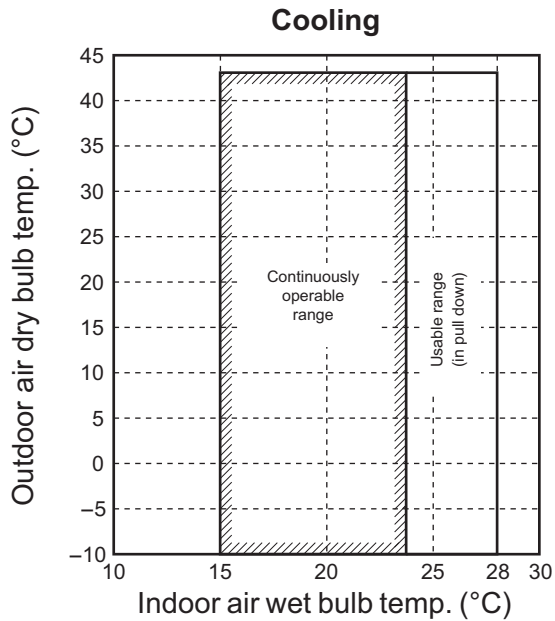


6-1. Selection flow chart

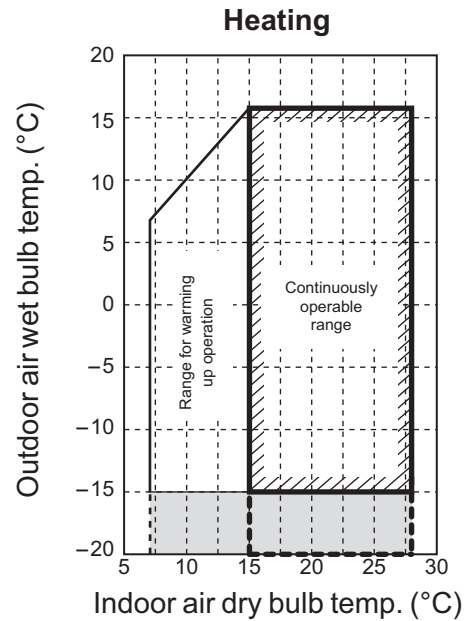




6-2. Operational temperature range



The cooling performance may decline considerably when total operating capacity of cooling indoor units is less than 4HP while ambient temperature is below 0°C.



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.

Avoid the following place

Places where ambient temperature falls below -15°C for more than 72 hours running.

The outdoor heat exchanger may be damaged by the frost.



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 recovery)	Capacity code of outdoor unit	Max. number of indoor units	Total capacity code of indoor units
MMY-MAP0804FT8-E	8	13	5.6 to 10.8
MMY-MAP1004FT8-E	10	16	7.0 to 13.5
MMY-MAP1204FT8-E	12	20	8.4 to 16.2
MMY-MAP1404FT8-E	14	23	9.8 to 18.9
MMY-AP1604FT8-E	16	27	11.2 to 21.6
MMY-AP1814FT8-E	18	30	12.6 to 24.3
MMY-AP2014FT8-E	20	33	14.0 to 27.0
MMY-AP2214FT8-E	22	37	15.4 to 29.7
MMY-AP2414FT8-E	24	40	16.8 to 32.4
MMY-AP2614FT8-E	26	43	18.2 to 35.1
MMY-AP2814FT8-E	28	47	19.6 to 37.8
MMY-AP3014FT8-E	30	48	21.0 to 40.5
MMY-AP3214FT8-E	32	48	22.4 to 43.2
MMY-AP3414FT8-E	34	48	23.8 to 45.9
MMY-AP3614FT8-E	36	48	25.2 to 48.6
MMY-AP3814FT8-E	38	48	26.6 to 51.3
MMY-AP4014FT8-E	40	48	28.0 to 54.0
MMY-AP4214FT8-E	42	48	29.4 to 56.7

70 to 135% of outdoor unit capacity

6-3-3. Combination ratio between indoor units and outdoor units.

Compared with the capacity code of the outdoor unit, the total value of capacity code of the connectable indoor units differs based on the height difference between the indoor units.

- When the height difference between the indoor units is 15m or less : Up to 70 to 135% of the combination ratio of indoor units to outdoor units
- When the height difference between the indoor units is over 15m : Up to 70 to 105% of the combination ratio of indoor units to outdoor units

NOTE:

The case of "Air to Air Heat exchanger with DX-coil" Type is below.

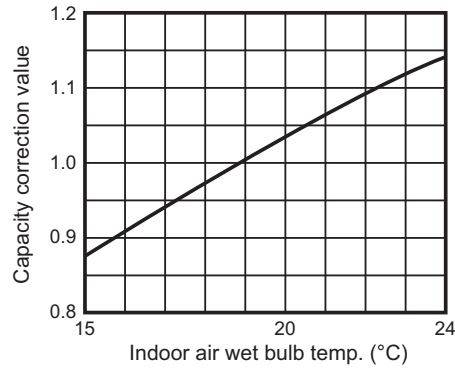
- When the height difference between the indoor units is 15m or less: Up to 80 to 135% of the combination ratio of all indoor units to outdoor units
When the height difference between the indoor units is over 15m: Up to 80 to 105% of the combination ratio of all indoor units to outdoor units
- Up to 30% of the internal ratio with total capacity codes of the connecting indoor units
(The connection only of this type with SHRM-i is not allowed.)



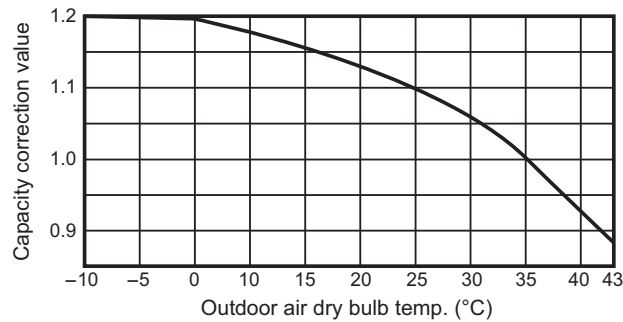
6-4. Cooling/heating capacity characteristics

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

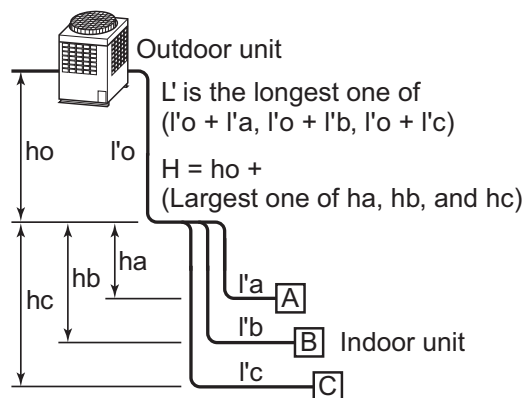
[1] Indoor air wet bulb temperature vs. capacity correction value



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



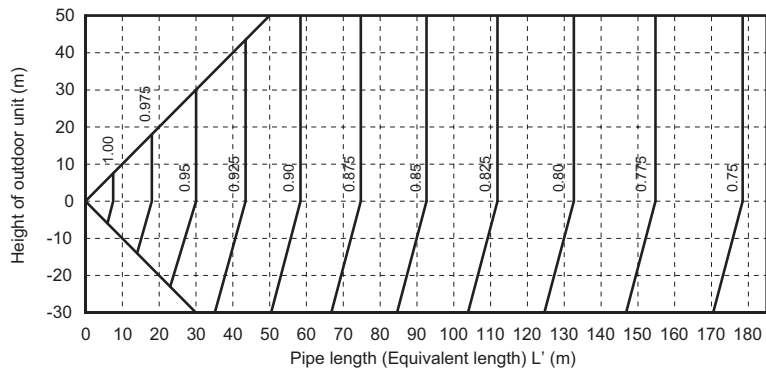
[3] Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value



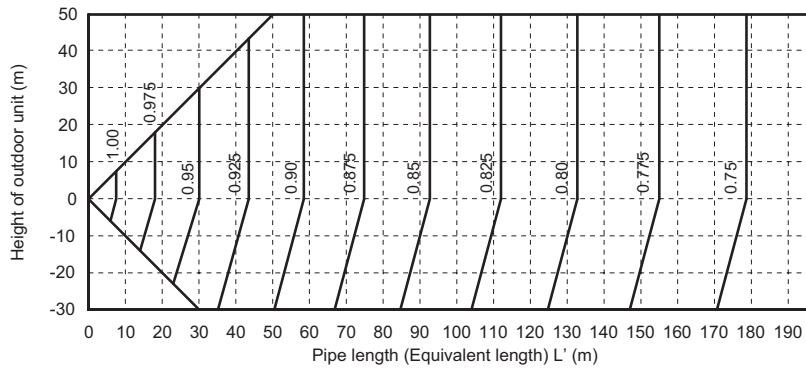
HP	Cooling		Heating
	Pipe length	Graph	
8	185	A1	H
10	185	B1	
12	185	A1	
14	185	A1	
16	195	A2	
18	195	B2	
20	195	B2	
22	195	A2	
24	195	A2	
26	195	B2	
28	195	B2	
30	200	B3	
32	200	B3	
34	200	B3	
36	200	A3	
38	200	B3	
40	200	B3	
42	200	B3	



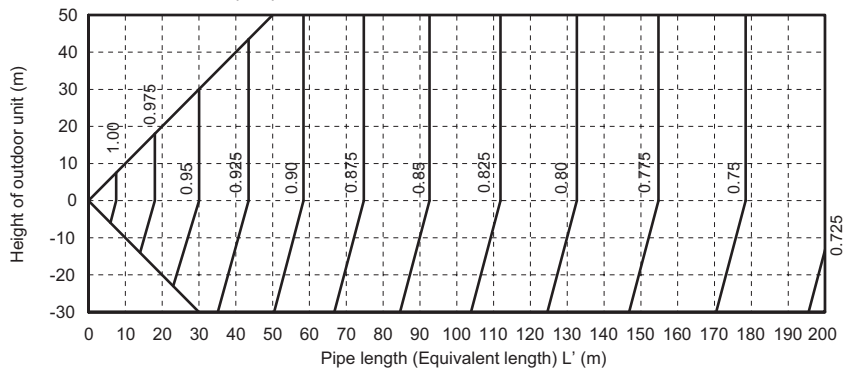
Outdoor unit (A1)

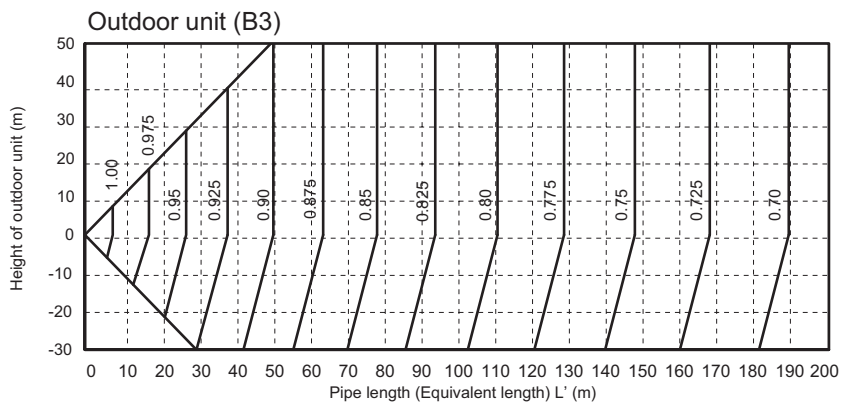
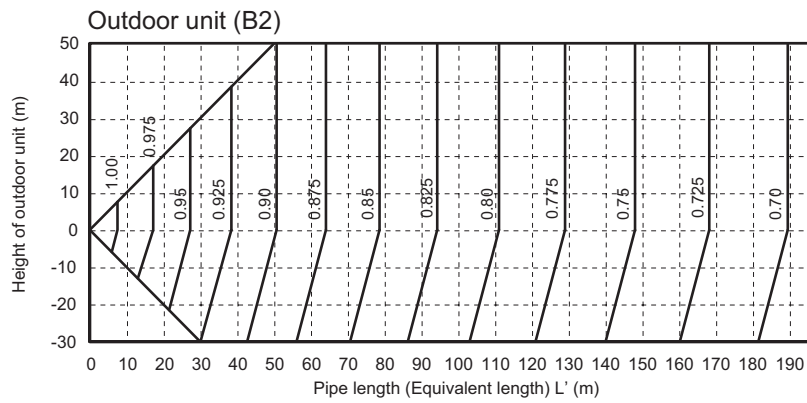
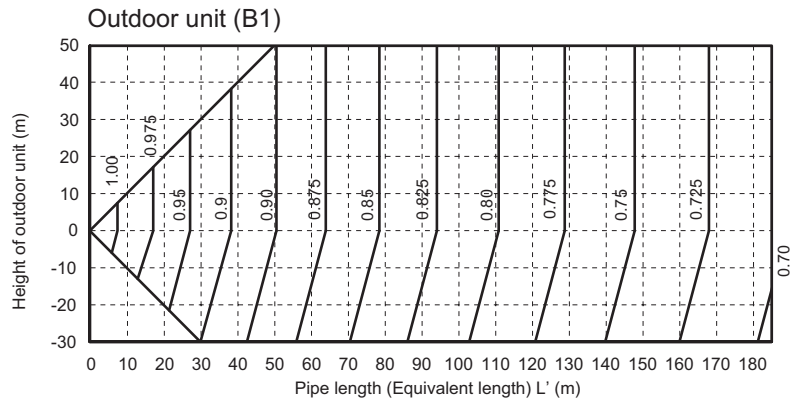


Outdoor unit (A2)



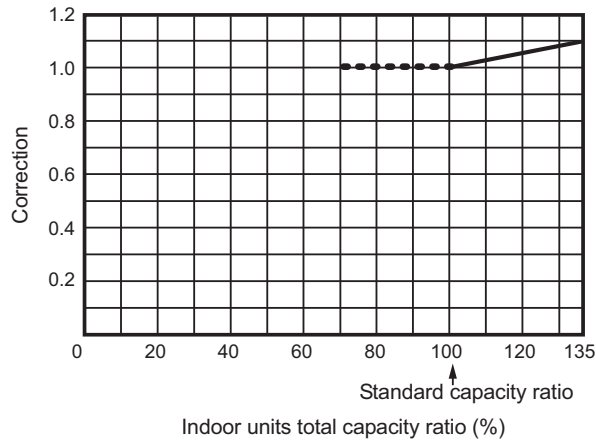
Outdoor unit (A3)







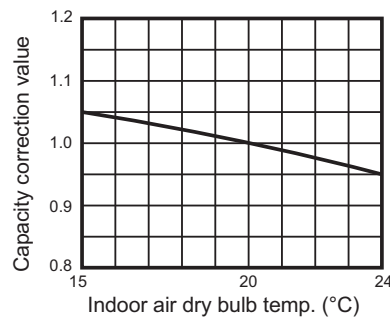
[4]* Correction of outdoor unit diversity



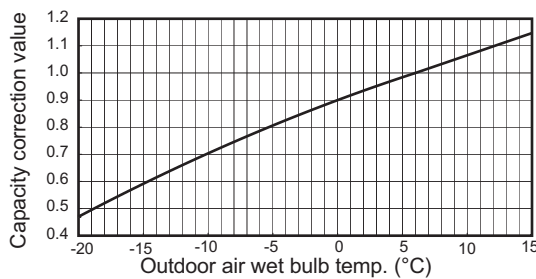
*: Coefficient to use for the correction of the outdoor unit capacity when the total capacity of the indoor units are not equal to the outdoor unit capacity.

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

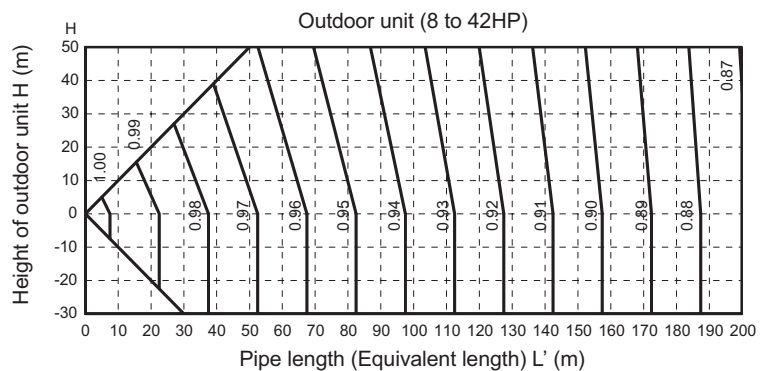
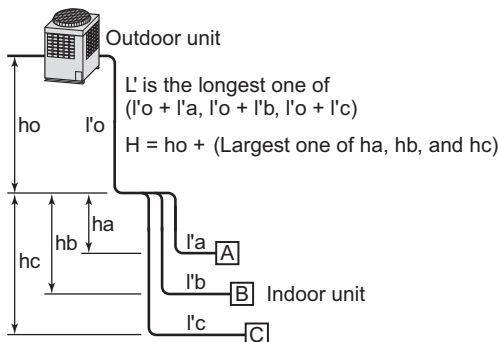
[1] Indoor air dry bulb temperature vs. capacity correction value



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

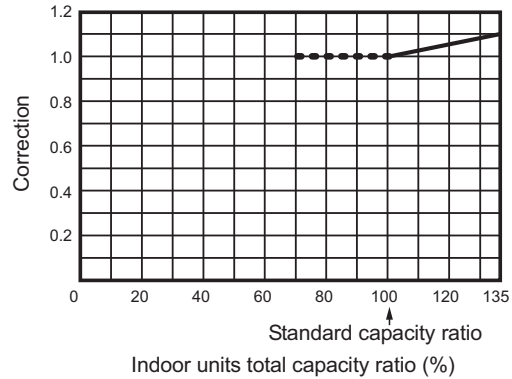


[3] Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value





[4]* Correction of outdoor unit diversity



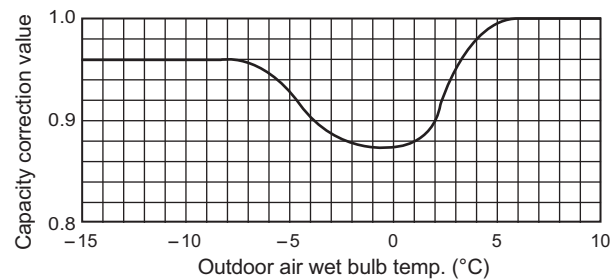
*: Coefficient to use for the correction of the outdoor unit capacity when the total capacity of the indoor units are not equal to the outdoor unit capacity.

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 When cooling : 27.0 CDB/19.0 CWB When heating : 20.0 CDB/ - Equivalent pipe length : 46m	Outdoor temperature When cooling : 35.0 CDB/ - When heating : 6.0 CDB/3.0 CWB 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 Determine 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-AP2214FT* (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% matches "70 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)

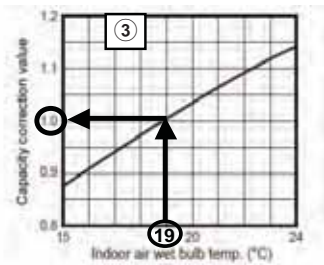
→ In this case, all Capacity B are bigger than air-conditioning load for both cooling and heating. Go to ⑦.



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

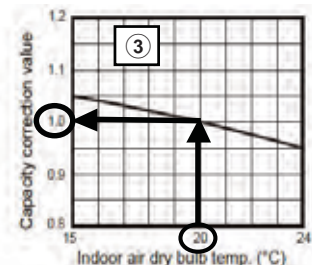
Cooling charts

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



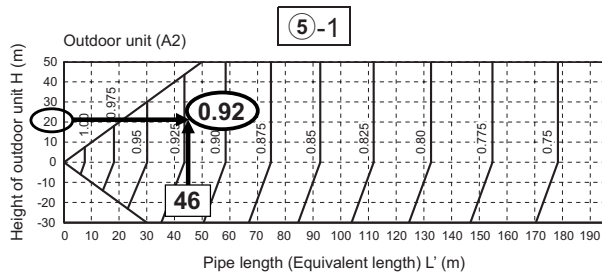
Heating charts

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

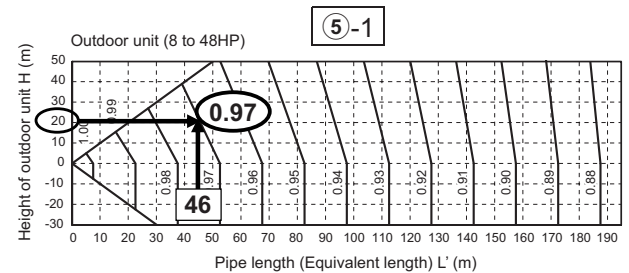


Selection of piping chart by selected outdoor unit			
HP	Cooling		Heating
	Pipe length	Graph	
8	185	A1	H
10	185	B1	
12	185	A1	
14	185	A1	
16	195	A2	
18	195	B2	
20	195	B2	
22	195	A2	
24	195	A2	
26	195	B2	
28	195	B2	
30	200	B3	
32	200	B3	
34	200	B3	
36	200	A3	
38	200	B3	
40	200	B3	
42	200	B3	

[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 N/A / Heating N/A (Refer to 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 $61.5kW \times 1.0 \times 1.0 \times 0.92 = 56.6kW$

Heating $69.0kW \times 1.0 \times 0.95 \times 0.97 \times 0.95 = 60.4kW$

- 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 = $56.6kW \times (7.1kW / 61.3kW) = 6.6kW$

Heating : Capacity C = $60.4kW \times (8.0kW / 68.9kW) = 7.0kW$

Calculate Capacity C of remain rooms by the similar method.

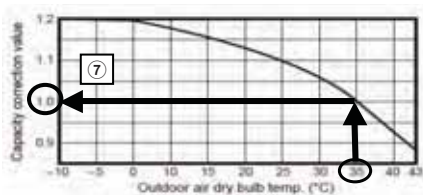
- ⑨ Compare Capacity C of indoor unit with air-conditioning load (for all rooms)

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

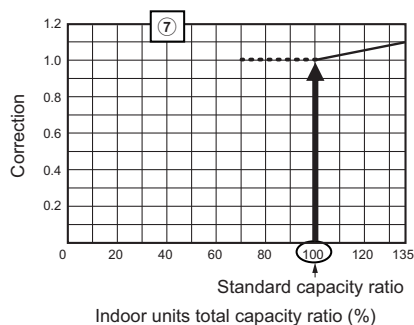
→ In this case, all Capacity C are bigger than air-conditioning load for both cooling and heating. All rooms are OK and selection ends.

Cooling charts

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

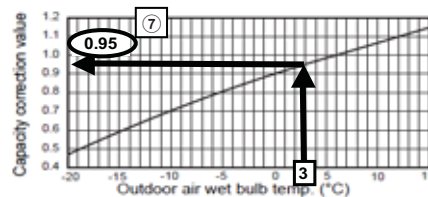


[4] Correction of outdoor unit diversity

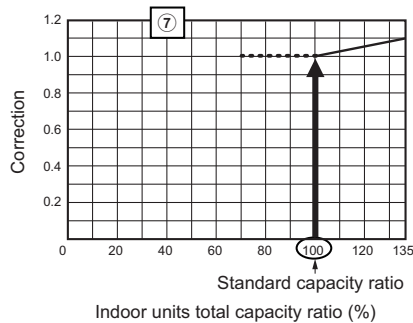


Heating charts

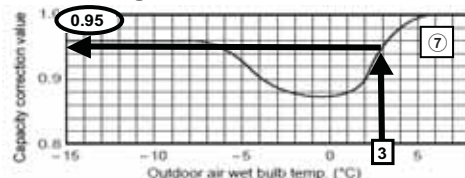
[2] Outdoor air wet bulb temperature vs. capacity correction value



[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 When cooling : 27.0 CDB/19.0 CWB When heating : 20.0 CDB/ - Equivalent pipe length : 46m	Outdoor temperature When cooling : 35.0 CDB/ - When heating : 6.0 CDB/3.0 CWB 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

Floor	Room name	Condition of indoors		Model name	Capacity correction and selection for indoor unit					
		Air-conditioning load			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

Preliminary selection of outdoor unit		
Model name	Cooling (kW)	Heating (kW)
MMY-AP2214FT* (22HP model)	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					5.2	5.5
	Office 2					4.2	4.4
	Locker room 1					3.3	3.5
	Meeting room 2					12.9	14.0
	Locker room 2					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

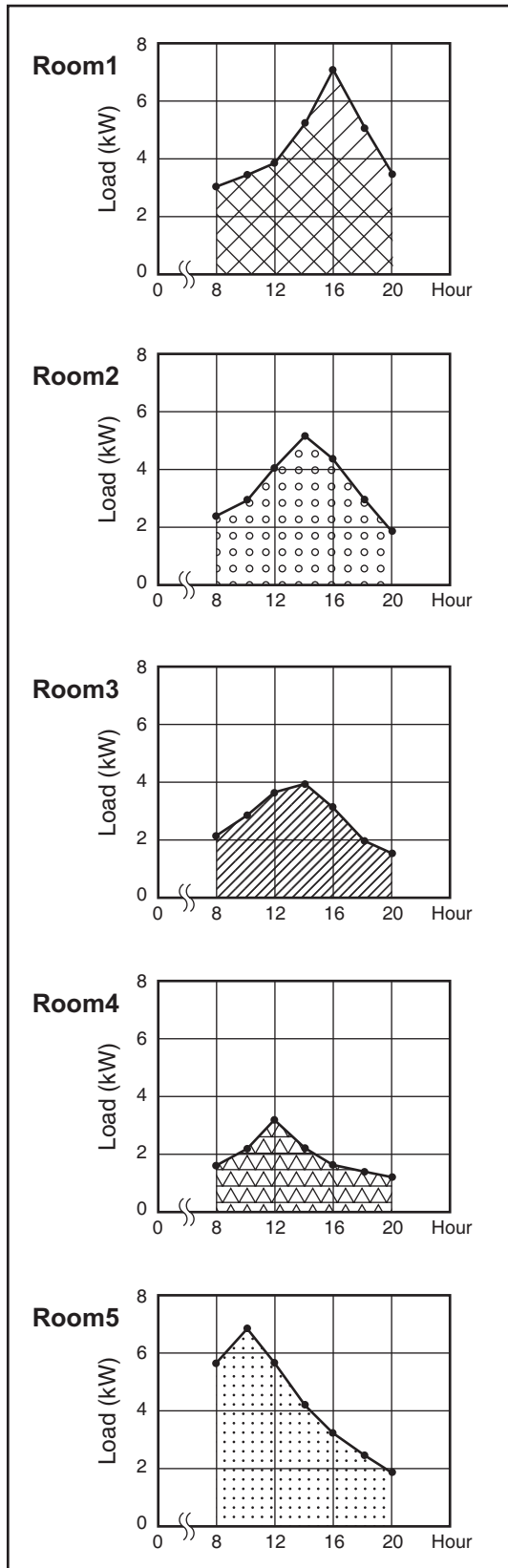
Floor	Room name	Condition of indoors		Equipment Selection			Judgment result	
		Air-conditioning load		Model name	Corrected Capacity C		Cooling	Heating
		Cooling (kW)	Heating (kW)		Cooling (kW)	Heating (kW)		
1	Office 1	6.0	6.2	MMU-AP0242H	6.6	7.0	OK	OK
	Meeting room 1	4.6	5.0	MMU-AP0182H	5.2	5.5	OK	OK
	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-AP2214FT*	56.6	60.4	OK	OK

Example: Equipment selection based on system load profile

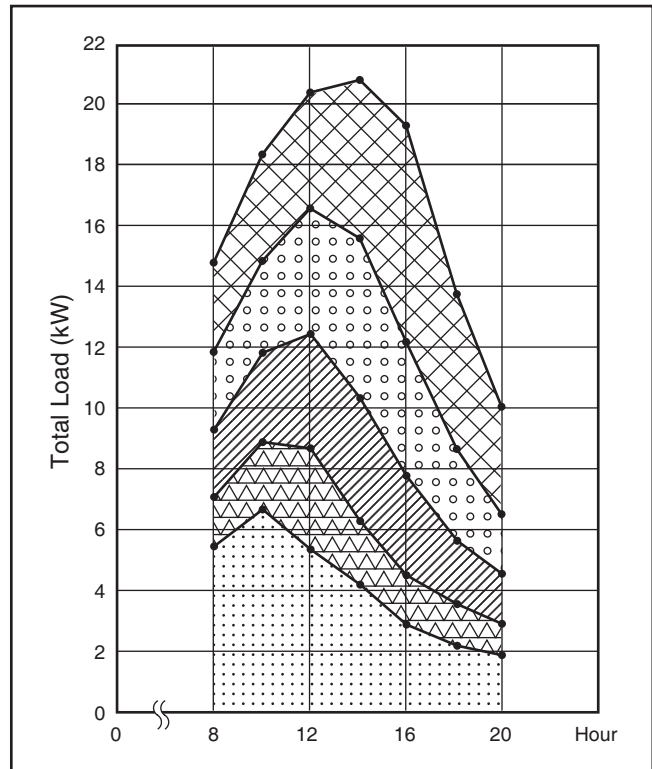
Since the five rooms on the floor face different directions, their hourly cooling load profile will be also different.

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

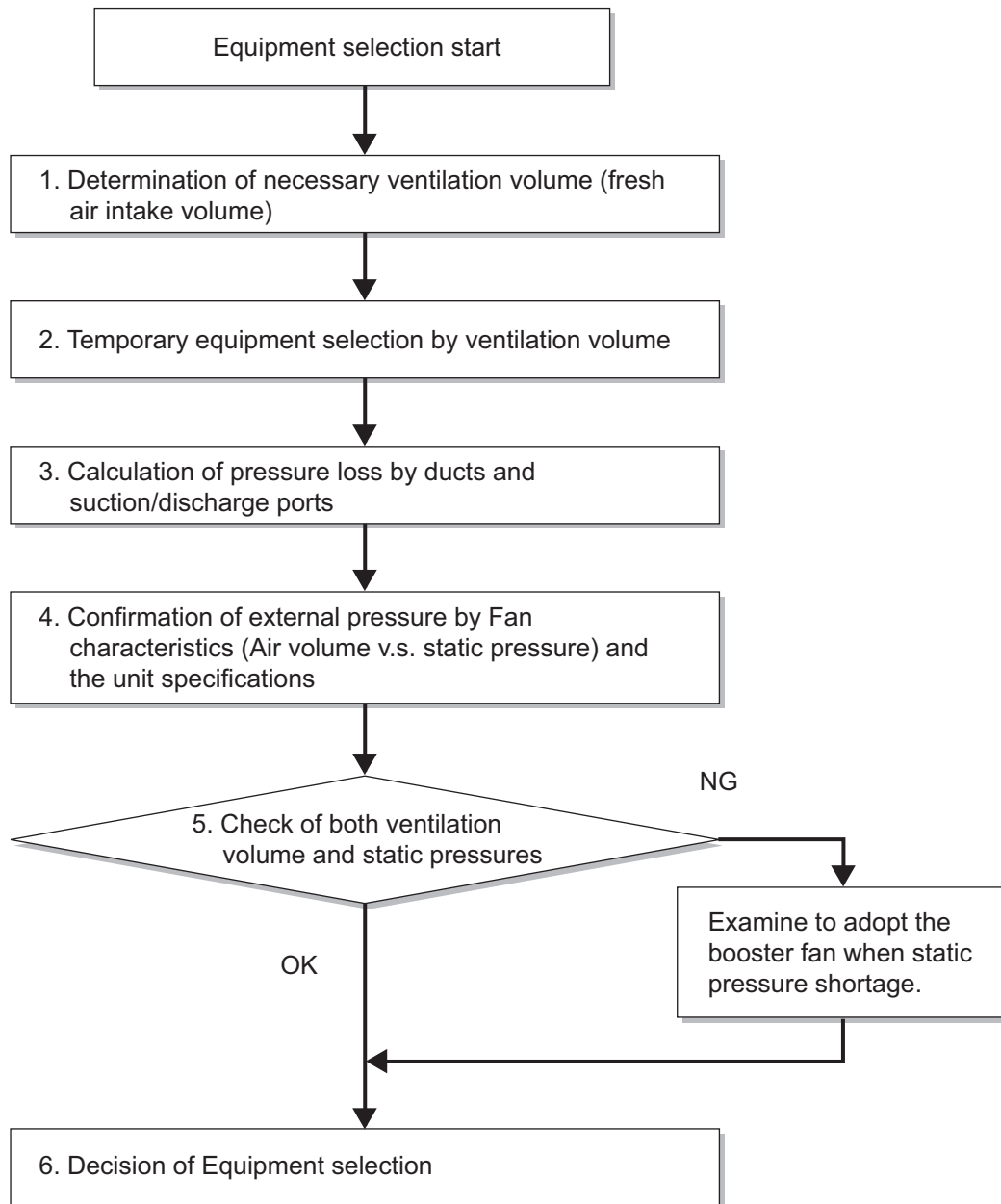


1. The total load on the floor is calculated by adding the hourly cooling loads of the five rooms.
2. The maximum value of total load is used to select outdoor module.



6-6. Selection procedure for Air to Air Heat exchanger with DX-coil Type

6-6-1. Selection flow chart



Note : Air to Air Heat exchanger with DX-coil Type is selected by necessary ventilation volume (fresh air intake volume). And this type operates to bring fresh air close to the room temperature, but is not to control the room temperature. For control of room temperature, it is necessary to set the other air-conditioners.

6-6-2. Example of equipment selection

<Condition>

Necessary ventilation volume : 1000m³/h

Pressure loss by ducts (including suction/discharge ports) : 100Pa

<Selection>

MMD-VN1002HEXE(High) is selected by the Fan characteristics.



7-1. 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.

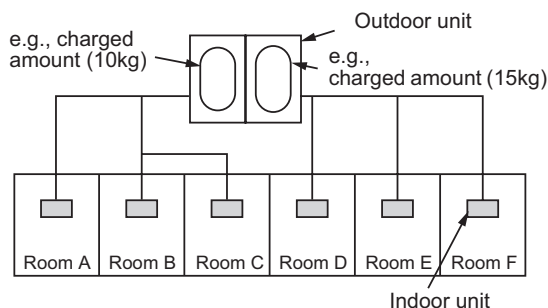
The concentration is as given below.

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

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.

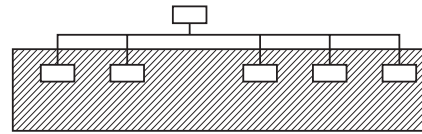
The possible amount of leaked refrigerant gas in rooms D, E and F is 15kg.

Important

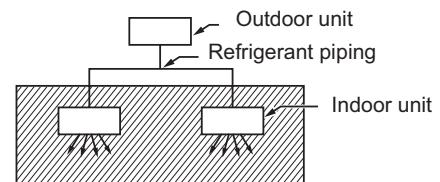
NOTE 2:

The standards for minimum room volume are as follows.

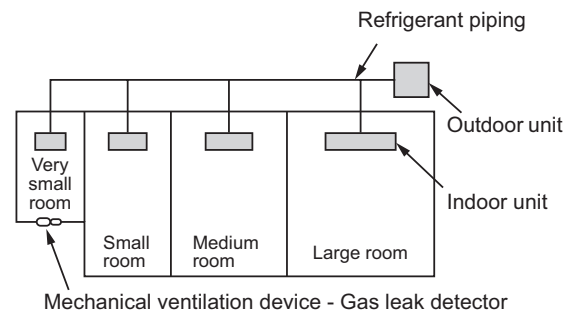
- (1) No partition (shaded portion)



- (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).

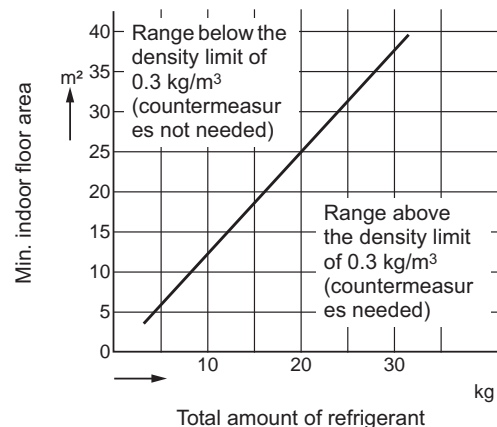


- (3) If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded,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



NOTE 3:

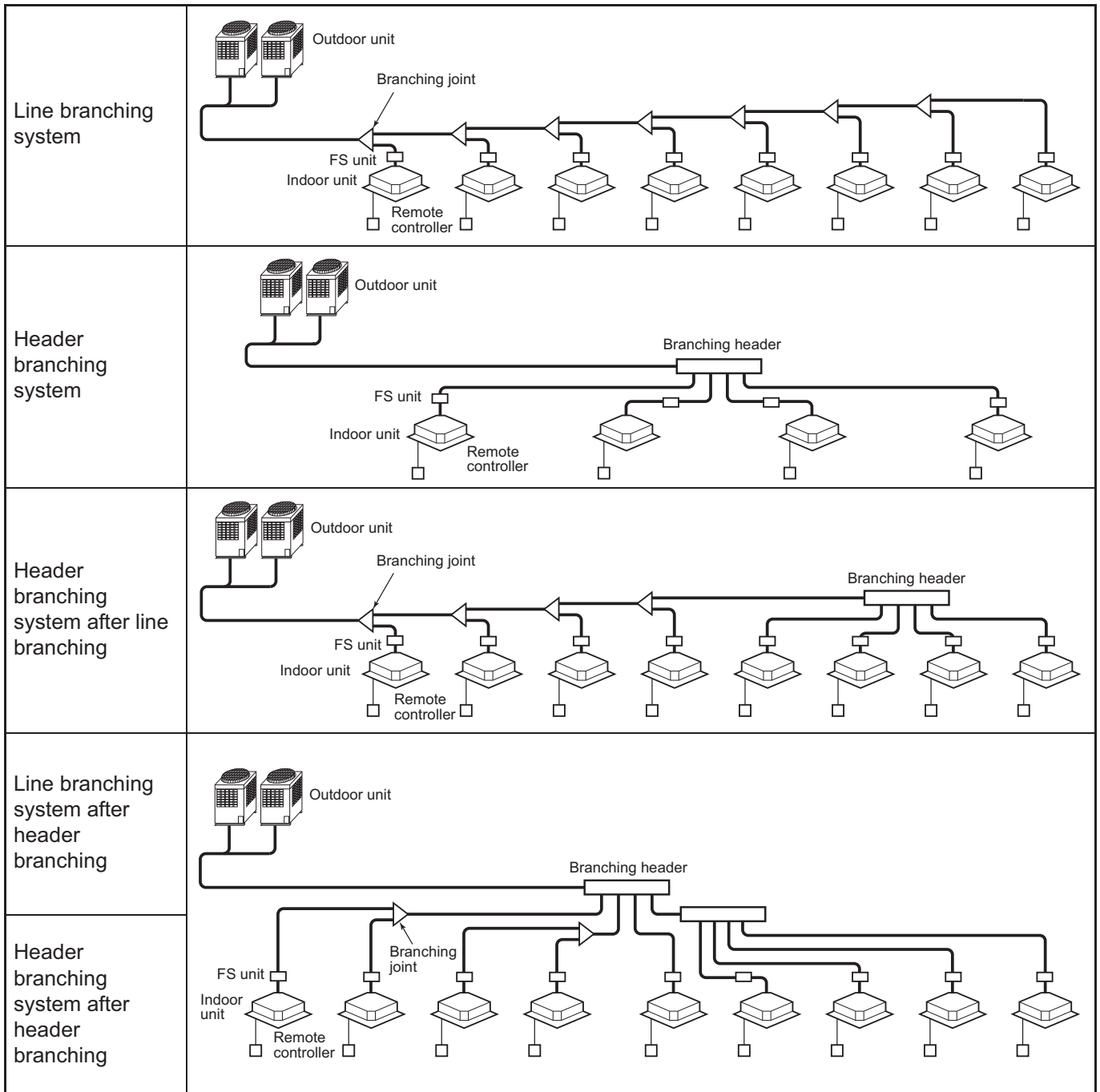
The minimum indoor floor area compared with the amount of refrigerant is roughly as follows: (When the ceiling is 2.7m high)



7-2. Free branching system

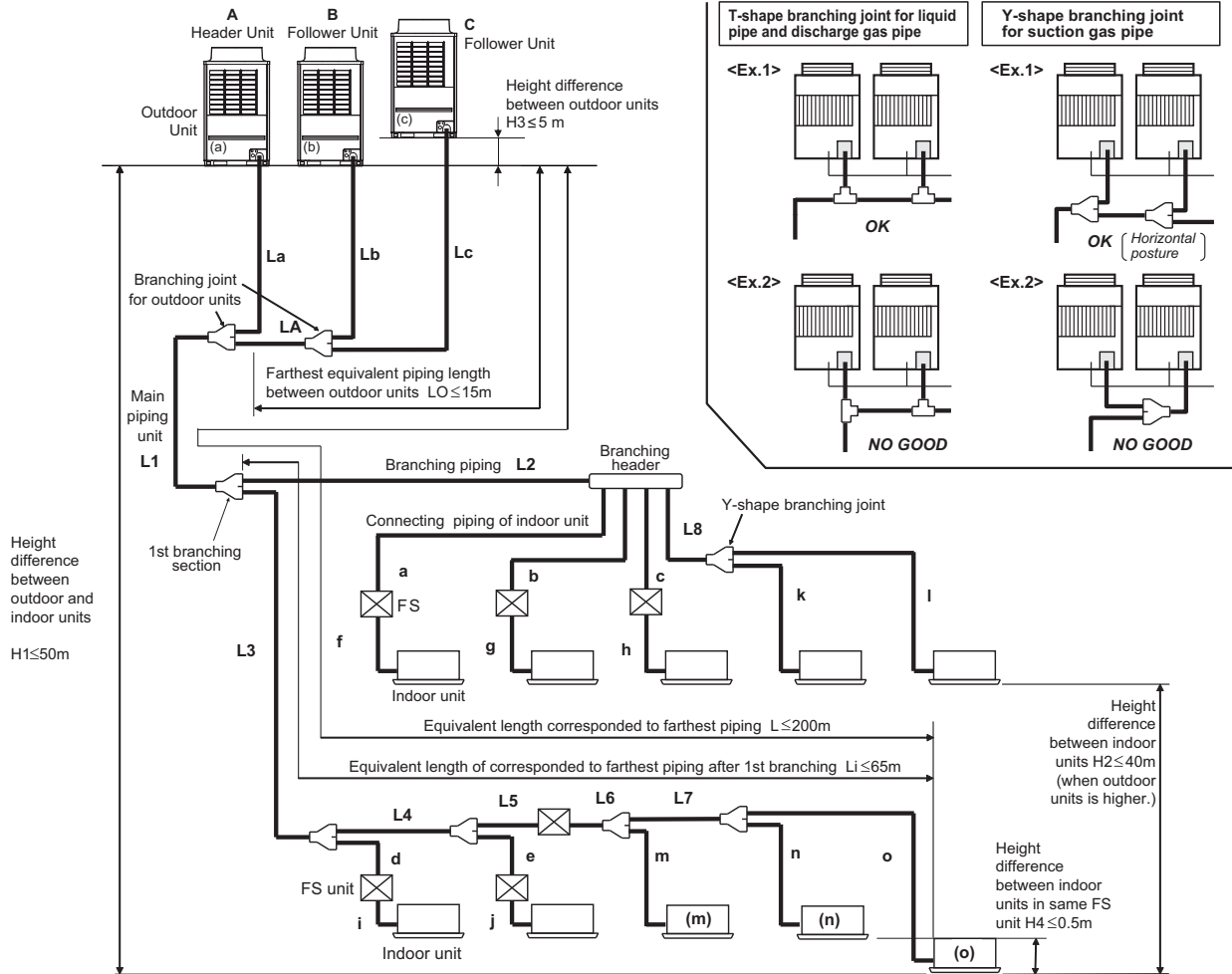
- ① Line branching system
- ② Header branching system
- ③ Header branching system after line branching
- ④ Line branching system after header branching
- ⑤ Header branching system after header branching

The above five branching systems are available 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	3 units	
Max. capacity of combined outdoor units	42 HP	
Max. No. of connected indoor units	48 units	
Max. capacity of combined indoor units	H2 ≤ 15m	135%
	H2 > 15m	105%

Cautions for installation

- Set the outdoor unit first connected to the bridging pipe to the indoor units as the header unit.
- Install the outdoor units in order of their capacity codes: A (header unit) ≥ B ≥ C
- When connecting gas pipes to indoor units, use Y-shaped branching joints to keep pipes level.
- In T-shape branching joint of outdoor unit for liquid pipe, piping to indoor units shall be perpendicular to piping to the header outdoor unit like as <Ex.1>. Do not connect piping like as <Ex.2>.

Farthest piping length L by capacity of outdoor units

Capacity (HP)	8 ~ 14	16 ~ 28	30 ~ 42
Equivalent length (m)	185	195	200
Real length (m)	165	175	180

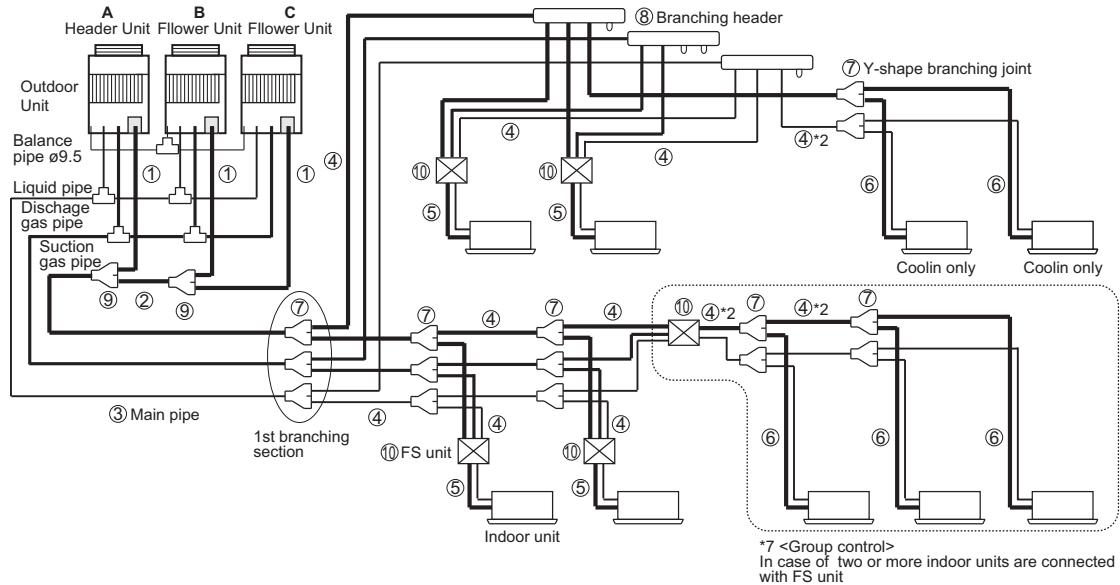
Allowable length and height difference of refrigerant piping

			Allowable value	Piping section	
Piping length	Total extension of pipe (Liquid pipe, real length)	Below 34HP	300m	LA + La + Lb + Lc + L1 + L2 + L3 + L4 + L5 + L6 + L7 + L8 + a + b + c + d + e + f + g + h + i + j + k + l + m + n + o	
		34HP or more	500m		
	Farthest piping Length L (*1)(*3)	Equivalent length		200m	LA + Lc + L1 + L3 + L4 + L5 + L6 + L7 + o
		Real length		180m	
	Max. equivalent length of main piping	H2 > 3m	Equivalent length	100m	L1
			Real length	85m	
		H2 ≤ 3m	Equivalent length	120m	
			Real length	100m	
	Equivalent length of farthest piping from 1st branching Li (*1)	H1 > 3m		50m	L3 + L4 + L5 + L6 + L7 + o
		H1 ≤ 3m		65m	
Farthest equivalent piping length between outdoor units LO (*1)			15m	LA + Lc (LA + Lb)	
Max. equivalent length of outdoor unit connecting piping			10m	La, Lb, Lc	
Max. real length of indoor unit connecting piping			30m	a + f, b + g, c + h, d + i, e + j, k, l	
Max. real length between FS unit and indoor unit			15m	f, g, h, i, j	
Max. equivalent length between branching joints			50m	L2, L3, L4, L8	
Height difference	Height between indoor and outdoor units H1	Upper outdoor unit	50m	-	
		Lower outdoor unit	30m	-	
	Height between indoor units H2	Upper outdoor unit	40m	-	
		Lower outdoor unit (*4)	15m	-	
Height between outdoor units H3 (*5)			5m	-	
<In case of two or more indoor units are connected with FS unit>					
	Max. equivalent piping length in group of the FS unit		30m	L5 + L6 + m, L5 + L6 + L7 + n, L5 + L6 + L7 + o	
	Max. real length between FS unit and the wired indoor unit (*2)		15m	L6 + m, L6 + L7 + n, L6 + L7 + o	
	Height difference between indoor units in same FS unit H4		0.5m	-	

*1: Farthest outdoor unit from the first branch: (C), farthest indoor unit: (o)
 *2: Run wires to one indoor unit and flow selector unit linked with one of those remote controllers if flow selector unit is connected to multiple indoor units.
 *3: Allowable values for length equivalent to furthest pipe are shown below and they vary according to performance rank of outdoor unit.
 22.4 to 40.0: 185 m, 45.0 to 78.5: 195 m, 85.0 to 118.0: 200 m
 *4: When system capacity is greater than 28 HP, height difference between indoor units is limited to 3 m. If the piping exceeds 3 m with a capacity greater than 28 HP there may be a case of capacity shortage in cooling.
 *5: Ensure that the header unit is installed below all connected follower outdoor unit(s). Possible product failure may occur if header unit is installed above any follower unit(s).



7-4. Selection of refrigerant piping



*7 <Group control>
In case of two or more indoor units are connected with FS unit

① Pipe size of outdoor unit (Table 1)

Model name MMY-	Suction gas side	Discharge gas side	Liquid side
MAP0804FT8-E	ø22.2	ø19.1	ø12.7
MAP1004FT8-E	ø22.2	ø19.1	ø12.7
MAP1204FT8-E	ø28.6	ø19.1	ø12.7
MAP1404FT8-E	ø28.6	ø22.2	ø15.9

② Connecting pipe size between outdoor units (Table 2)

<Balance pipe ø9.5>

Total capacity code of outdoor units at downstream side *1 *6	Suction gas side	Discharge gas side	Liquid side
16 to below 22	ø28.6	ø22.2	ø15.9
22 or more	ø34.9	ø28.6	ø19.1

③ Size of main pipe (Table 3)

Total capacity code of all outdoor units *1	Suction gas side	Discharge gas side	Liquid side
8 to below 12	ø22.2	ø19.1	ø12.7
12 to below 14	ø28.6	ø19.1	ø12.7
14 to below 16	ø28.6	ø22.2	ø15.9
16 to below 22	ø28.6	ø22.2	ø19.1
22 to below 26	ø34.9	ø28.6	ø19.1
26 to below 36	ø34.9	ø28.6	ø22.2
36 or more	ø41.3	ø34.9	ø22.2

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

④ Pipe size between branching sections (Table 4)*2 *8

Total capacity code of indoor units at downstream side *1	Suction gas side	Discharge gas side	Liquid side
6.4 or less	ø15.9	ø12.7	ø9.5
6.4 to below 12.2	ø22.2	ø19.1	ø12.7
12.2 to below 16.2	ø28.6	ø22.2	ø15.9
16.2 to below 20.2	ø28.6	ø22.2	ø19.1
20.2 to below 25.2	ø34.9	ø28.6	ø19.1
25.2 to below 35.2	ø34.9	ø28.6	ø22.2
35.2 or more	ø41.3	ø34.9	ø22.2

⑤ Pipe size between FS unit and indoor unit (Table 5)

Capacity rank of indoor unit	Gas side	Liquid side
007 type to 012 type	ø9.5	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 Pipe size between branching and indoor unit (Table 6)

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

⑦ Selection of Y branching joint (Table 7)*3 *4

Y-shape branching joint	Capacity rank of indoor unit	Model name	
		For 3 pipes	For 2 pipes
	Below 6.4	RBM-BY55FE	RBM-BY55E
	6.4 to below 14.2	RBM-BY105FE	RBM-BY105E
	14.2 to below 25.2	RBM-BY205FE	RBM-BY205E
	25.2 or more	RBM-BY305FE	RBM-BY305E

⑧ Selection of branching header (Table 8)*3 *4 *5

Branching header	Capacity rank of indoor unit	Model name	
		For 3 pipes	For 2 pipes
	For 4 branching	Below 14.2	RBM-HY1043FE
		14.2 to below 25.2	RBM-HY2043FE
	For 8 branching	Below 14.2	RBM-HY1083FE
		14.2 to below 25.2	RBM-HY2083FE

⑨ Selection of branching joint for outdoor unit (Table 9)

Total capacity code of outdoor units at downstream side**6	Joints				Model name
	Suction gas (Y-shape)	Discharge gas (T-shape)	Liquid (T-shape)	Balance (T-shape)	
Below 26	ø31.8 ø28.6 ø25.4	ø25.4 ø25.4	ø19.1 ø19.1	ø9.5 ø9.5	RBM-BT14FE
26 or more	ø38.1 ø38.1 ø28.6	ø31.8 ø31.8	ø22.2 ø22.2	ø9.5 ø9.5	RBM-BT24FE

⑩ Selection of FS unit (Table 10)

Total capacity of indoor units	Max. number of connectable indoor units	Model name
Below 4.0HP	5	RBM-Y1123FE
4.0 to below 6.4HP	8	RBM-Y1803FE
6.4 to 10.0HP or less	8	RBM-Y2803FE

Note

- *1 Code is determined according to the capacity rank.
- *2 If the piping size becomes over main piping size, select the size same as main piping.
- *3 Branching pipe on the 1st branch should be selected according to the capacity code of the outdoor unit
- *4 In case total capacity code of indoor units exceeds the capacity code of the outdoor unit, the pipe size should be selected based on the capacity of the outdoor unit.
- *5 For 1 line after header branching, indoor units with a total maximum capacity code of 6.0 in total can be connected.
When the 1st branch is a header with the outdoor total capacity codes of 12 to 26, apply the model RBM-HY2043FE/E(4-branch) or RBM-HY2083FE/E(8-branch) regardless of the total capacity code of the down-stream indoor units.
And when 26 or more, branching header cannot be used as first branch.
- *6 Starting point is main pipe in downstream side
- *7 When two or more indoor units are connected with one FS unit, the operation is group control with one remote controller.
- *8 Two piping between branching sections in cooling only and downstream of FS unit uses liquid pipe and suction gas pipe.



7-5. Charging requirement with additional refrigerant

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

Calculating the amount of additional refrigerant required



Refrigerant in the system when shipped from the factory

		8HP	10HP	12HP	14HP
Refrigerant amount charged in factory	Heat recovery model	11.0kg	11.0kg	11.0kg	11.0kg

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] =

$$[\text{Real length of liquid pipe}] \times \left[\text{Additional refrigerant charge amount per liquid pipe 1m (Table 1)} \right] \times 1.3 + \left[\text{Compensation by system HP (Table 2)} \right]$$

Example : Additional charge amount R (kg) = {(L1 x 0.025kg/m) + (L2 x 0.055kg/m) + (L3 x 0.105kg/m) + (L4 x 0.160kg/m) + (L5 x 0.250kg/m)} x 1.3 + (2.5kg)

L1 : Real total length of liquid pipe Ø 6.4 (m)
 L2 : Real total length of liquid pipe Ø 9.5 (m)
 L3 : Real total length of liquid pipe Ø 12.7 (m)
 L4 : Real total length of liquid pipe Ø 15.9 (m)
 L5 : Real total length of liquid pipe Ø 19.1 (m)
 System : 30HP

Table 1

Pipe dia. at liquid side	Ø 6.4	Ø 9.5	Ø 12.7	Ø 15.9	Ø 19.1	Ø 22.2
Additional refrigerant amount/1m	0.025kg	0.055kg	0.105kg	0.160kg	0.250kg	0.350kg

Table 2

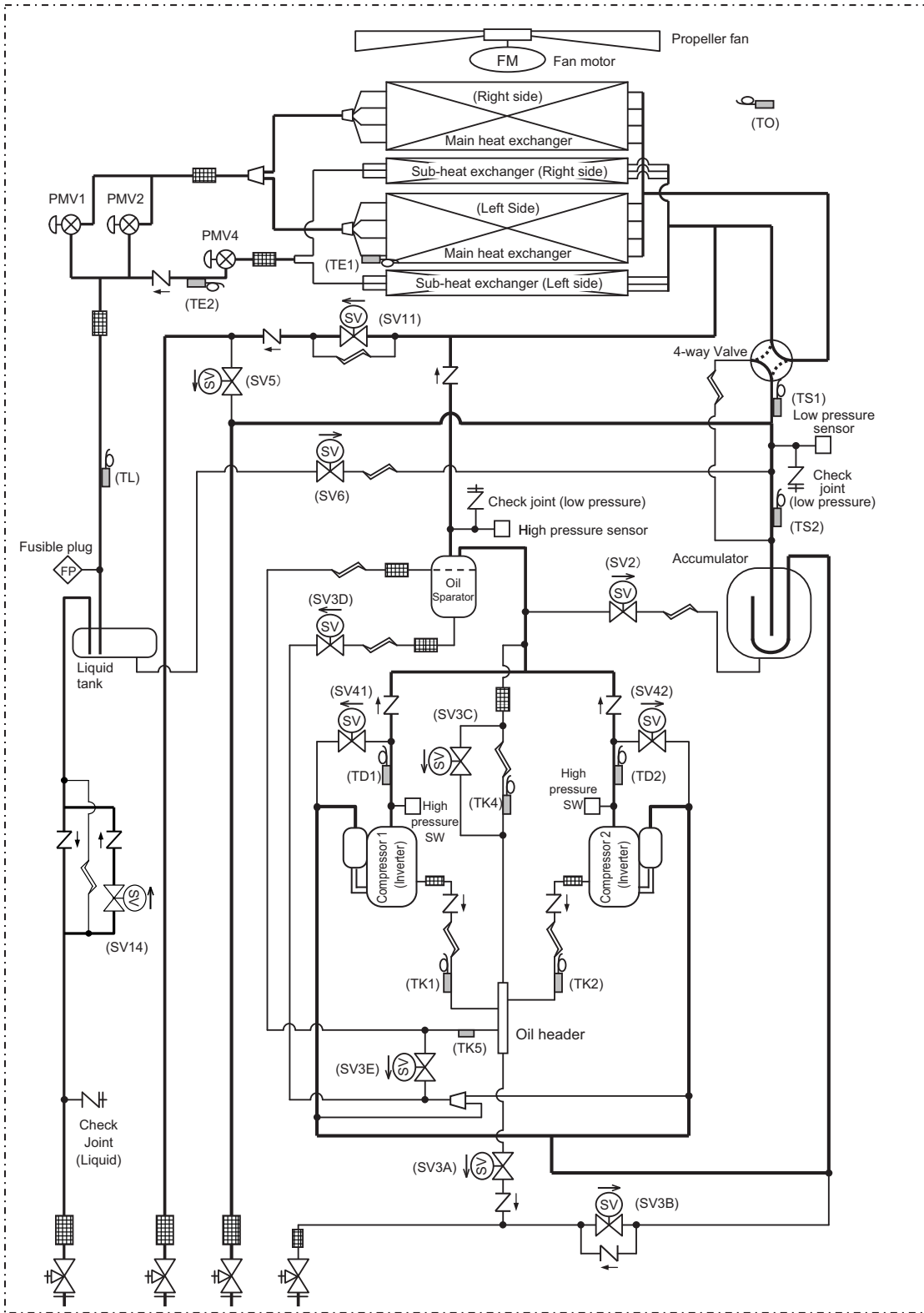
Combinated horse power (HP)	Outdoor combination (HP)			Compensation by system HP (kg)
8	8	-	-	2
10	10	-	-	3
12	12	-	-	8
14	14	-	-	10
16	8	8	-	0
18	10	8	-	1.5
20	10	10	-	3.5
22	12	10	-	7.5
24	14	10	-	8.5
26	14	12	-	11
28	14	14	-	12
30	10	10	10	2.5
32	12	10	10	5
34	14	10	10	6
36	12	12	12	8
38	14	12	12	9.5
40	14	14	12	11
42	14	14	14	12.5



8-1. Outdoor Unit

Inverter Unit (8, 10HP)

Model : MMY-MAP0804FT*, MAP1004FT*



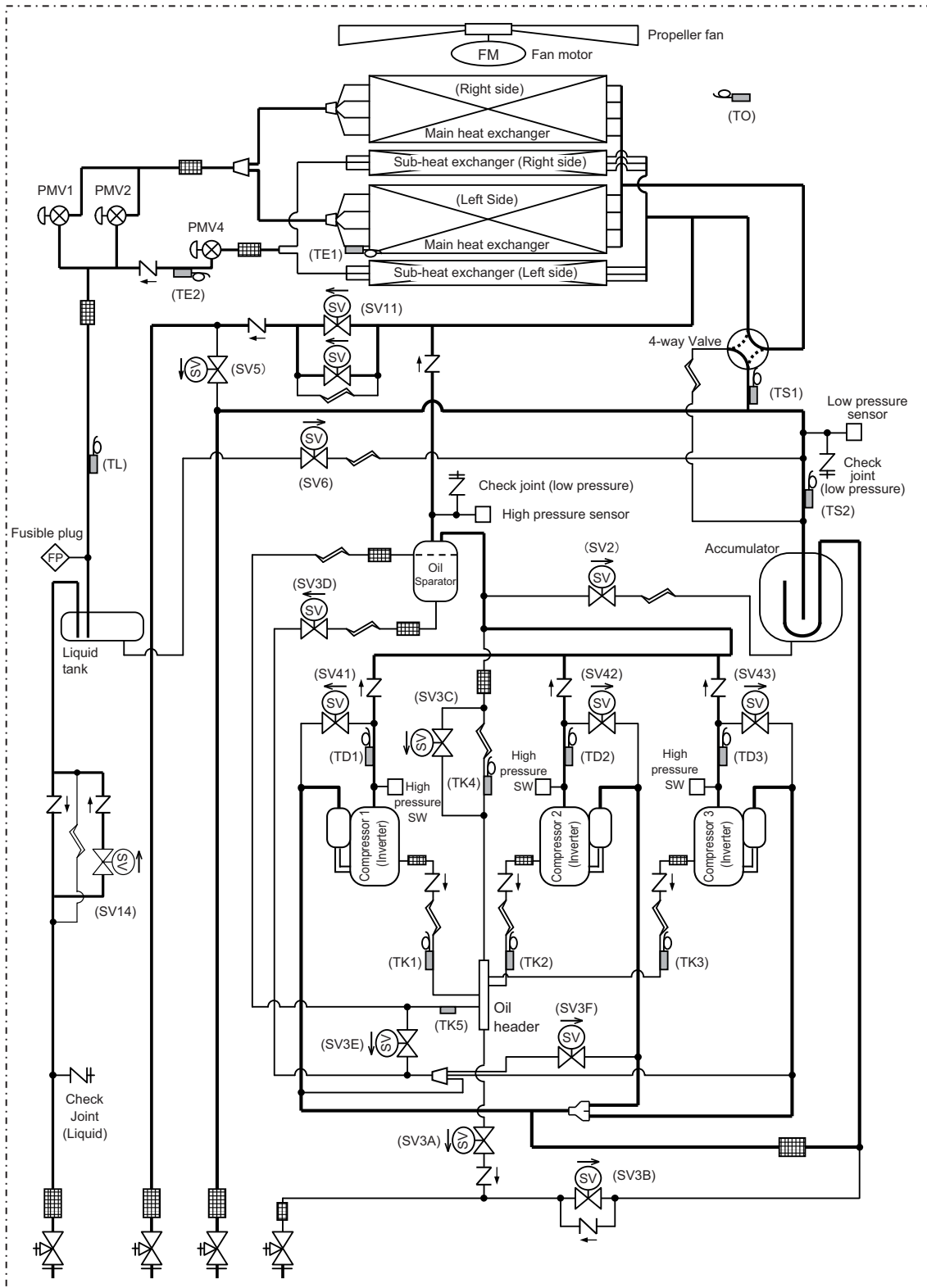
Liquid side service valve
 Discharge side service valve
 Suction side service valve
 balance pipe service valve

Symbol							
Symbol	Solenoid Valve	Capillary Tube	Check Valve	Check Joint	Strainer	Temperature Sensor	Distributor



Inverter Driven Unit (12, 14HP)

Model Name : MMY-MAP1204FT*, MAP1404FT*



Liquid side service valve
 Discharge side service valve
 Suction side service valve
 balance pipe service valve

Symbol							
Symbol	Solenoid Valve	Capillary Tube	Check Valve	Check Joint	Strainer	Temperature Sensor	Distributor



8-2. Explanation of Functional Parts

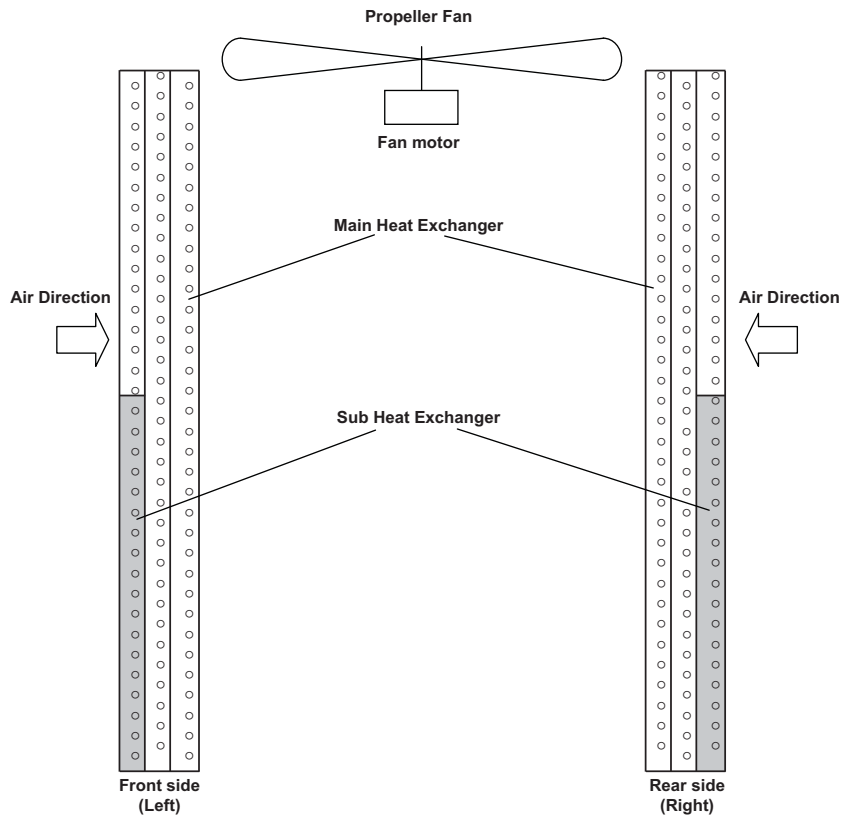
Model : MMY-MAP0804FT8*, MAP1004FT*, MAP1204FT8*, MAP1404FT*

Functional part name		Outline of the function
Solenoid valve	1. SV3A	(Connector CN321: White) 1) Collects oil in the oil header during ON time
	2. SV3B	(Connector CN321: White) 1) Return oil in the balance pipe to the compressor
	3. SV3C	(Connector CN321: White) 1) Pressurize oil in the oil header during ON time
	4. SV3D	(Connector CN322: White) 1) Reserve oil in the oil separator during OFF time 2) Supplies oil in the oil separator to the compressor during ON time
	5. SV3E	(Connector CN322: White) 1) Turns ON during operation, and balances the oil between the compressors
	6. SV3F	(Connector CN323: White) 1) Balances the oil level between the compressors
	7. SV2	(Connector CN311: White) For hot gas bypass 1) Low pressure release function 2) High pressure release function 3) Gas balance function during stop time
	8. SV41 SV42 SV43	(SV41 Connector CN312: Blue, SV42 Connector CN312: Blue, SV43 Connector CN313: Red) Start compensation valve of compressor 1) For gas balance start, 2) High pressure release function, 3) Low pressure release function
	9. SV5	(Connector CN314: White) 1) For gas balance during operation mode change 2) For low pressure balance in all cooling operation
	10. SV6	(Connector CN315: White) 1) Liquid bypass function for discharge temperature release (cooling bypass function) 2) refrigerant recovery function from stopped follower unit
	11. SV11	(Connector CN319 : White) 1) Discharge gas line shut-down function in all cooling and defrosting operation
	12. SV14	(Connector CN336 : Yellow) 1) Liquid line shut-down function for preventing liquid accumulation in stop of follower units
4-way valve	(Connector CN317:Blue) 1) Cooling/heating exchange, 2) Reverse defrost, 3) Main/sub heat exchanger exchange	
Pulse motor valve	PMV1, 2	(Connector CN300, 301: White) 1) Super heat control function in heating operation 2) Under cool adjustment function in cooling operation 3) Liquid line shut-down function while follower unit stops 4) Distribution control in simultaneous operation
	PMV4	(Connector CN303: Red) 1) Controls flow rate for sub-heat exchanger in simultaneous operation (distribution in heating) 2) Preventive function for high-pressure rising in heating operation
Oil separator	1) Prevention for rapid decreasing of oil (Decreases oil flowing to the cycle) 2) Reserve function of surplus oil	
Temp. sensor	1. TD1 TD2 TD3	(TD1 Connector CN502: White, TD2 Connector CN503: Pink, TD3 Connector CN504: Blue) 1) Protection of compressor discharge temp
	2. TS1	(Connector CN505: White) 1) Controls super heat with PMV1, 2 in heating operation and simultaneous operation
	3. TS2	(Connector CN506: Black) 1) For refrigerant recovery control in all cooling and mainly cooling operation 2) Detects overheating on refrigeration cycle
	4. TE1	(Connector CN520: Green) 1) Controls defrost in all heating and majority heating operation 2) Controls outdoor fan in all heating and simultaneous operation
	5. TE2	(Connector CN521: Red) 1) Controls flow distribution in simultaneous operation
	6. TK1, TK2, TK3, TK4, TK5	(TK1 Connector CN531: Black, TK2 Connector CN532: Green, TK3 Connector CN533: Red, TK4 Connector CN534: Yellow, TK5 Connector CN535: Red) 1) Judges oil level of the compressor
	7. TL	(Connector CN523: White) 1) Detects sub-cool in all cooling and simultaneous operation
	8. TO	(Connector CN507: Yellow) 1) Detects outside temperature
Pressure sensor	1. High pressure sensor	(Connector CN501: Red) 1) Detects high pressure and controls compressor capacity 2) Detects high pressure in all cooling operation, and controls the fan in low ambient cooling operation 3) Controls sub-cool of heating indoor unit 4) Controls outdoor fan speed in majority cooling operation
	2. Low pressure sensor	(Connector CN500: White) 1) Detects low pressure in all cooling and simultaneous operation and controls compressor capacity 2) Detects low pressure in all heating and simultaneous operation, and controls the super heat
Heater	Compressor case heater	(Compressor 1 Connector CN331: White, Compressor 2 Connector CN332: Blue, Compressor 3 Connector CN333: Black) 1) Prevents liquid accumulation to compressor
	Accumulator case heater	(Connector CN334: Red) 1) Prevents liquid accumulation to accumulator
Balance pipe	1) Oil balancing in each outdoor unit	

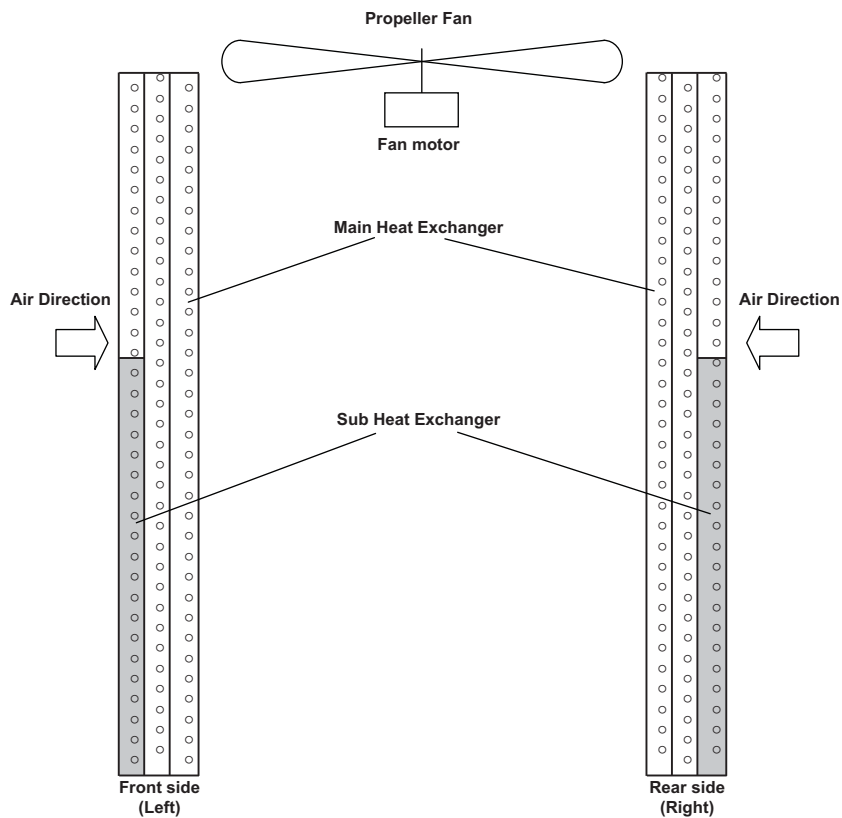


8-3. Heat Exchanger of Outdoor unit

Model : MMY-MAP0804FT*, MAP1004FT*



Model : MMY-MAP1204FT*, MAP1404FT*



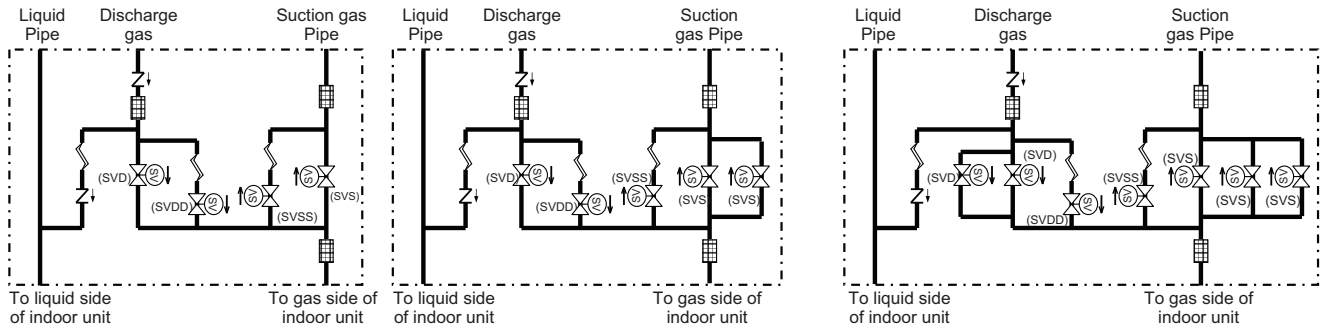


8-4. FS Unit (Flow Selector Unit)

Model RBM-Y1123FE

Model RBM-Y1803FE

Model RBM-Y2803FE



Symbol				
	Solenoid Valve	Capillary Tube	Check Valve	Strainer

Functional part name	Functional outline	
Solenoid Valve	SVD	(Discharge gas pipe shut-down valve) 1) High pressure line in heating
	SVS	(Suction gas pipe shut-down valve) 1) Low pressure line in cooling
	SVDD	(Pressurization valve) 1) Pressurizes indoor unit during the ON operation when indoor unit starts heating.
	SVSS	(Depressurization valve) 1) Returns refrigerant in indoor unit when stopped or in thermo-OFF status. 2) Depressurizes indoor unit during the ON operation when the indoor unit stops heating.

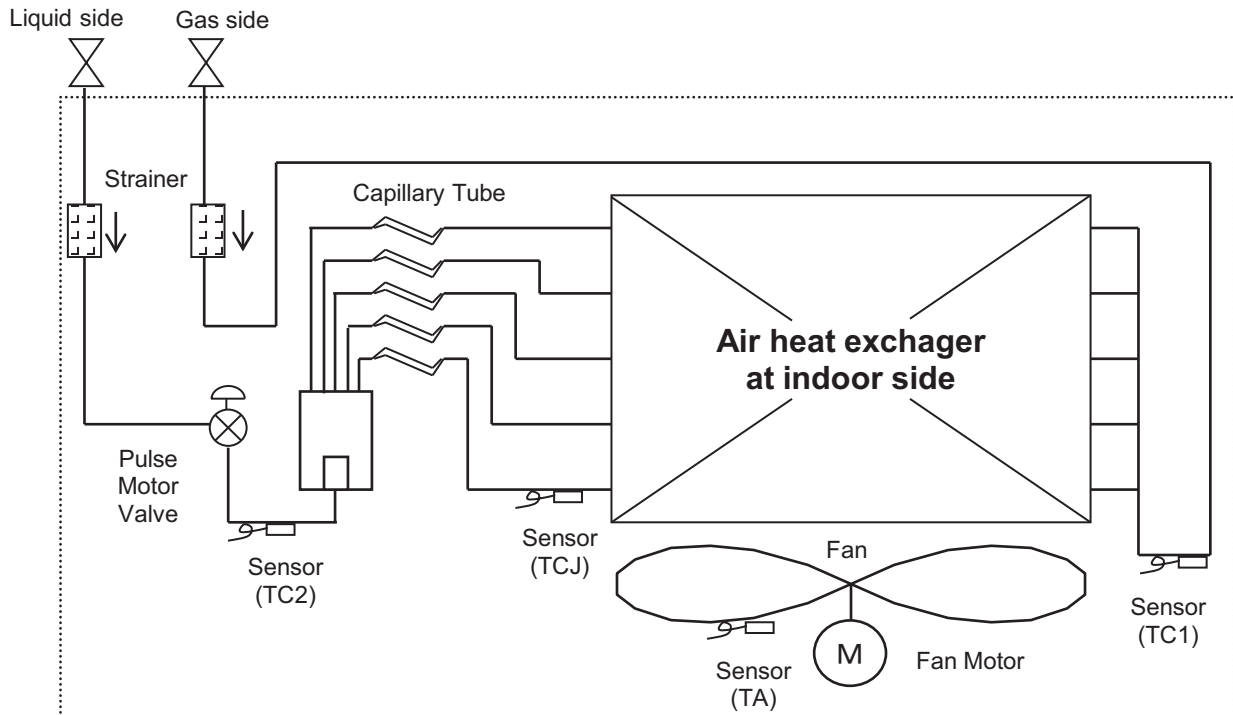
Valve Control of FS Unit

Mode	SVD	SVDD	SVS	SVSS
1. Stop	OFF	OFF	OFF	ON (OFF)*
2. Cooling (Thermo OFF)	OFF	OFF	OFF	ON
3. Cooling (Thermo ON)	OFF	OFF	ON	ON
4. Heating (Thermo OFF)	ON	OFF	OFF	OFF
5. Heating (Thermo ON)	ON	OFF	OFF	OFF

* When system stops



8-5. Indoor Unit



(Note) MMU-AP0074YH-E to AP0124YH-E type air conditioners have no TC2 sensor.

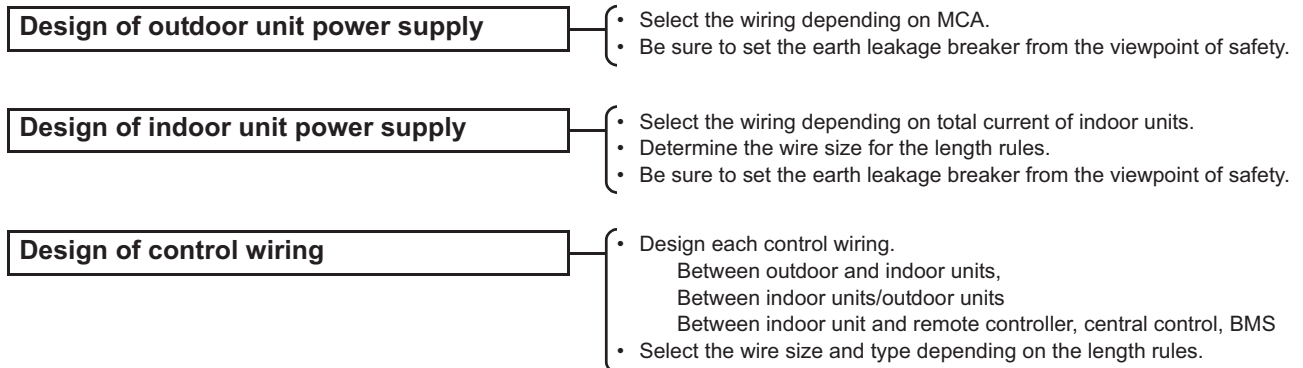
Functional part name		Functional outline
Pulse Motor Valve	PMV	(Connector CN082 (6P): Blue) 1) Controls super heat in cooling operation 2) Controls under cool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. sensor	1.TA	(Connector CN104 (2P): Yellow) 1) Detects indoor suction temperature
	2.TC1	(Connector CN100 (3P): Brown) 1) Controls PMV super heat in cooling operation
	3.TC2	(Connector CN101 (2P): Black) 1) Controls PMV under cool in heating operation
	4.TCJ	(Connector CN102 (2P): Red) 1) Controls PMV super heat in cooling operation 2) [MMU-AP0074 to AP0124YH-E only] Controls PMV under cool in heating operation



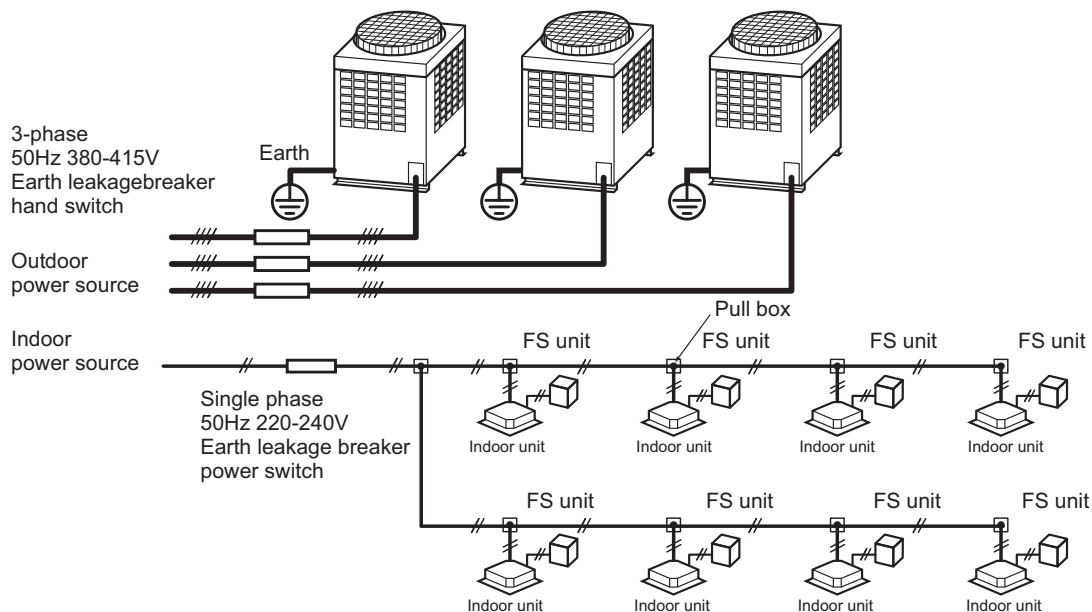
9-1. General

- 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



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.

NOTE:

Control wire and power supply wire between the FS unit and the indoor unit are supplied as an accessory complete with the FS unit. (Wire length : 6m)

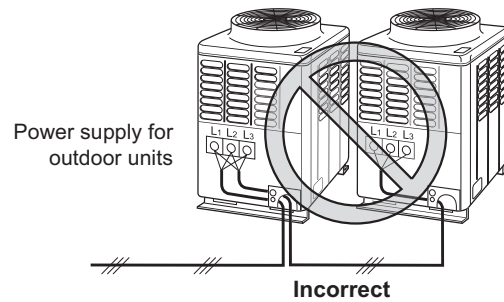
If the length between indoor and FS unit exceeds 5m, connect by using the connection cable kit sold separately (RBC-CBK15FE).



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).

Every outdoor unit must have a dedicated power supply.



Outdoor unit data

Single outdoor unit

HP	Heat Pump Model MMY-	Power Supply		Voltage Range		Output				MCA (A)	MOCP (A)
						Compressor			Fan Motor (kW)		
		Phase and frequency	Nominal Voltage	Min (V)	Max (V)	Unit No.1 (kW)	Unit No.2 (kW)	Unit No.3 (kW)			
8	MAP0804FT8-E	3N~ 50Hz	380-400-415V	342	456	2.3 x 2			1.0	24.5	32
10	MAP1004FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2			1.0	27.1	32
12	MAP1204FT8-E	3N~ 50Hz	380-400-415V	342	456	2.6 x 3			1.0	31.2	40
14	MAP1404FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3			1.0	36.4	50

Combination of outdoor unit

HP	Heat Pump Model MMY-	Power Supply		Voltage Range		Output				MCA (A)	MOCP (A)
						Compressor			Fan Motor (kW)		
		Phase and frequency	Nominal Voltage	Min (V)	Max (V)	Unit No.1 (kW)	Unit No.2 (kW)	Unit No.3 (kW)			
16	AP1614FT8-E	3N~ 50Hz	380-400-415V	342	456	2.3 x 2	2.3 x 2		1.0 x 2	49.0	63
18	AP1814FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	2.3 x 2		1.0 x 2	51.6	63
20	AP2014FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2		1.0 x 2	54.2	63
22	AP2214FT8-E	3N~ 50Hz	380-400-415V	342	456	2.6 x 3	3.1 x 2		1.0 x 2	58.3	80
24	AP2414FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3	3.1 x 2		1.0 x 2	63.5	80
26	AP2614FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3	2.6 x 3		1.0 x 2	67.6	80
28	AP2814FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3	3.1 x 3		1.0 x 2	72.8	100
30	AP3014FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	3.1 x 2	1.0 x 3	81.3	100
32	AP3214FT8-E	3N~ 50Hz	380-400-415V	342	456	2.6 x 3	3.1 x 2	3.1 x 2	1.0 x 3	85.4	100
34	AP3414FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3	3.1 x 2	3.1 x 2	1.0 x 3	90.6	125
36	AP3614FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3	2.6 x 3	3.1 x 2	1.0 x 3	93.6	125
38	AP3814FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3	3.1 x 3	3.1 x 2	1.0 x 3	98.8	125
40	AP4014FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3	3.1 x 3	2.6 x 3	1.0 x 3	104	125
42	AP4214FT8-E	3N~ 50Hz	380-400-415V	342	456	3.1 x 3	3.1 x 3	3.1 x 3	1.0 x 3	109	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
	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-AP0242WH	230-1-50	198	264	0.020	0.32	0.40	15
2-Way Air Discharge Cassette Type	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
1-Way Air Discharge Cassette Type	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
	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
Concealed Duct Type	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
	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
Concealed Duct High Static Pressure Type	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
	MMD-AP0274H-E	230-1-50	198	264	0.160	1.55	1.94	15
Slim Duct Type	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
	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
Slim Duct Type	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
	MMD-AP0184SPH-E	230-1-50	198	264	0.060	0.47	0.59	15

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

FLA : Full Load Amps
kW : Fan Motor Rated Output (kW)



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
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
	MMF-AP0564H-E	230-1-50	198	264	0.160	1.84	2.30	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

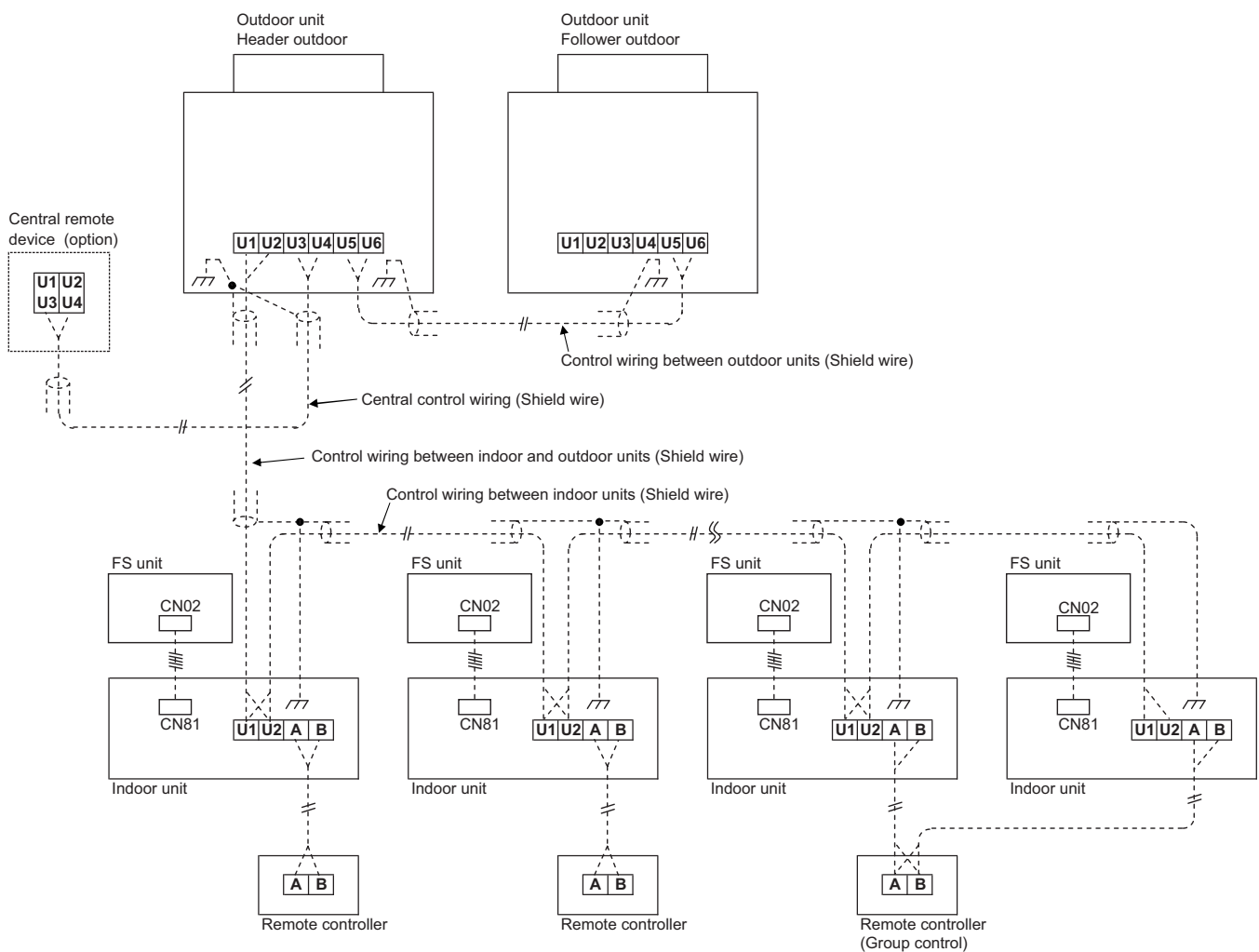
Model \ Item	Power supply wiring			
	Wire size			
All models of indoor units	2.0mm ² (AWG#14)	Max. 20m	3.5mm ² (AWG#12)	Max. 50m
FS unit	Be sure to use the supplied cable. If the length between the indoor and FS unit exceeds 5 m, connect by using the connection cable kit (RBC-CBK15FE). (Sold separately)			

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



- Communication wiring and central control wiring use 2-core non-polarity wires.
Use 2-core shield wires to prevent noise trouble.
- Connecting the closed end terminal of shield wire.
(Connected to all connecting sections in each unit)
- Use 2-core non-polarity wire for remote controller. (A, B terminals)
Use 2-core non-polarity wire for wiring of group control. (A, B terminals)
- Control wire and power line wire between FS unit and indoor unit are the accessory parts of FS unit. (Wire length : 6m)
If the length between indoor unit and FS unit exceeds 5m, connect by using the connection cable kit sold separately (RBC-CBK15FE).



Restriction of control wiring

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

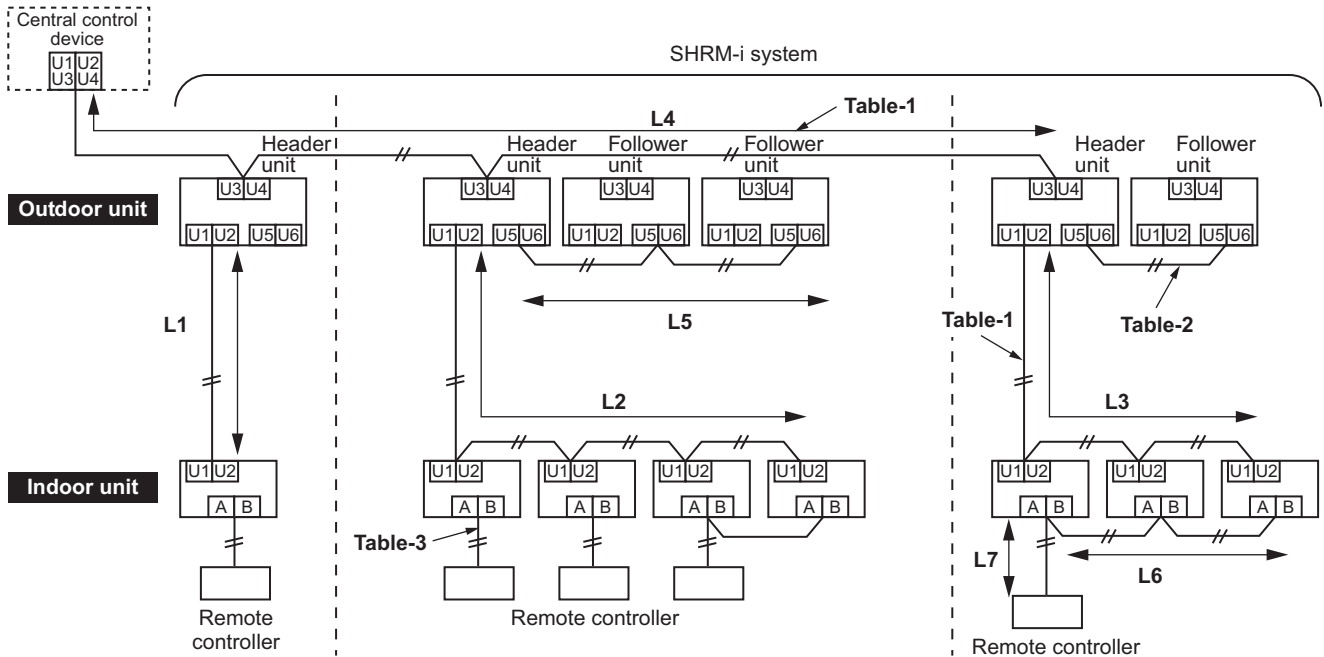


Table-1 Control wiring between indoor and outdoor units (L1, L2, L3), Central control wiring (L4)

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)

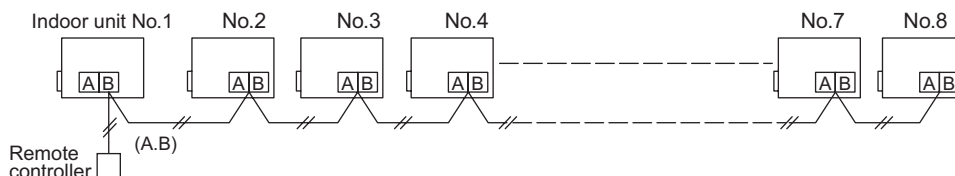
Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.25 mm ² to 2.0 mm ² /Up to 100 m (L5)

Table-3 Remote controller wiring (L6, L7)

Wire	2-core
Size	0.5 mm ² to 2.0 mm ²
Length	<ul style="list-style-type: none"> 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)

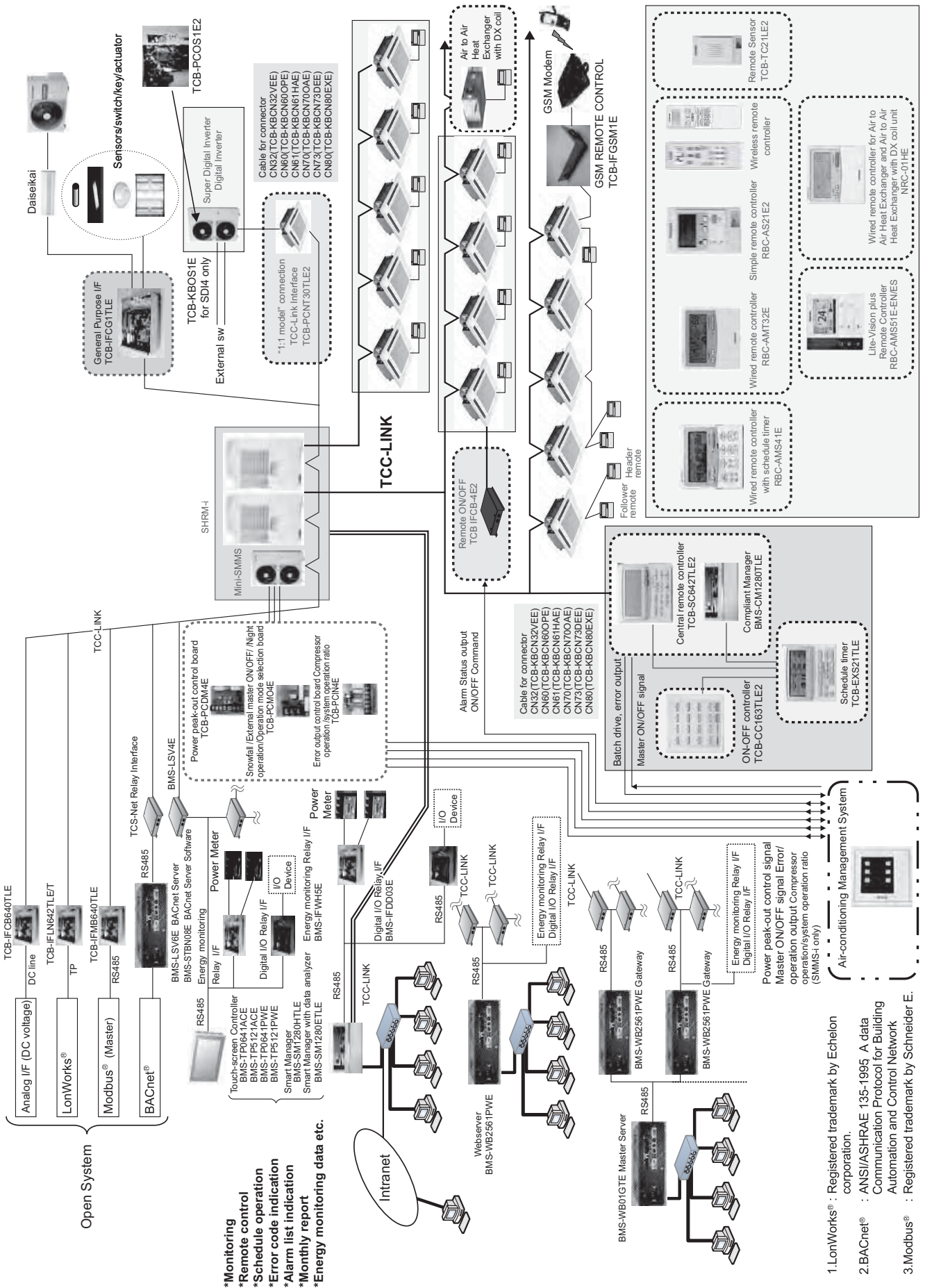
Group Operation through a Remote Controller

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





10-1. Outline of application Control chart



- *Monitoring
- *Remote control
- *Schedule operation
- *Error code indication
- *Alarm list indication
- *Monthly report
- *Energy monitoring data etc.

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
<p>10-2-1</p>	<p>Individual control Air conditioner is individually operated at a distance.</p>		<ul style="list-style-type: none"> 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 RBC-AX32U(W)-E, RBC-AX32U(WS)-E, RBC-AX23UW(W)-E, RBC-AX32CE2, TCB-AX32E2
<p>10-2-2</p>	<p>GROUP control One remote controller can control a group of up to a max. 8 indoor units. Operating on the same setting.</p>		<ul style="list-style-type: none"> 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 RBC-AX32U(W)-E, RBC-AX32U(WS)-E, RBC-AX23UW(W)-E, RBC-AX32CE2, TCB-AX32E2
<p>10-2-3</p>	<p>Two remote control Air conditioner is controlled by two remote controllers in two locations.</p>		<ul style="list-style-type: none"> 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 RBC-AX32U(W)-E, RBC-AX32U(WS)-E, RBC-AX23UW(W)-E, RBC-AX32CE2, TCB-AX32E2
<p>10-2-4</p>	<p>Control by schedule timer Schedule timer mode and Weekly timer mode</p>		<ul style="list-style-type: none"> Wired remote controller RBC-AMT32E Central remote controller TCB-SC642TLE2 Schedule timer TCB-EXS21TLE



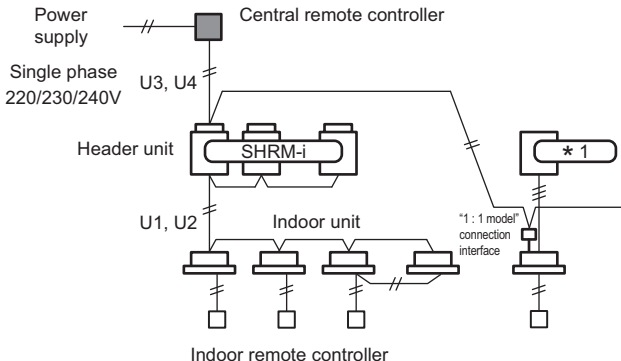
10-3. Application control for central remote controller

	Basic function	System diagram	Model
<p>10-3-1</p>	<p>Central management controllers for 64/128 units</p>	<p>Function of central remote controller</p> <p>TCB-SC642TLE2</p> <ul style="list-style-type: none"> 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. <p>BMS-CM1280TLE</p> <ul style="list-style-type: none"> 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 <p>Common</p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Central remote controller TCB-SC642TLE2 BMS-CM1280TLE ON-OFF controller TCB-CC163TLE2 <p>Indoor remote controller</p> <ul style="list-style-type: none"> 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 RBC-AX32U(W)-E RBC-AX32U(WS)-E RBC-AX23UW(W)-E RBC-AX32CE2 TCB-AX32E2





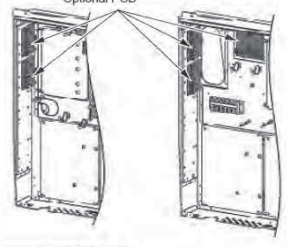
	Basic function	System diagram	Model
<p>10-3-2</p>	<p>Central remote controller + Schedule timer</p> <p>Weekly operation schedule can be set by connecting a schedule timer to the central remote controller</p>		<ul style="list-style-type: none"> Central remote controller TCB-SC642TLE BMS-CM1280TLE ON-OFF controller TCB-CC163TLE2 + Schedule timer TBC-EXS21TLE <p>Indoor remote controller</p> <ul style="list-style-type: none"> 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
<p>10-3-3</p>	<p>Either one of the two controllers can be set as side control without indoor remote controller.</p> <p>Please prepare a wired remote controller for operation confirming of indoor unit in advance.</p>		<ul style="list-style-type: none"> Central remote controller TCB-SC642TLE2 BMS-CM1280TLE ON-OFF controller TCB-CC163TLE2 <p>Indoor remote controller</p> <ul style="list-style-type: none"> Wired remote controller RBC-AMT32E Wired remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES Wireless remote controller kit RBC-AX32U(W)-E RBC-AX32U(WS)-E RBC-AX23UW(W)-E RBC-AX32CE2 TCB-AX32E2




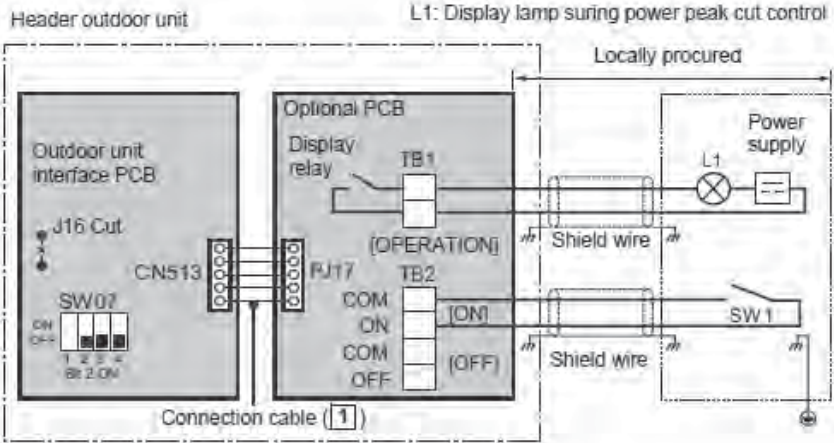
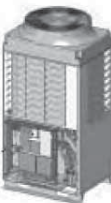
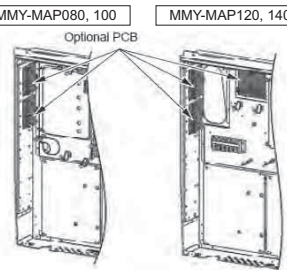
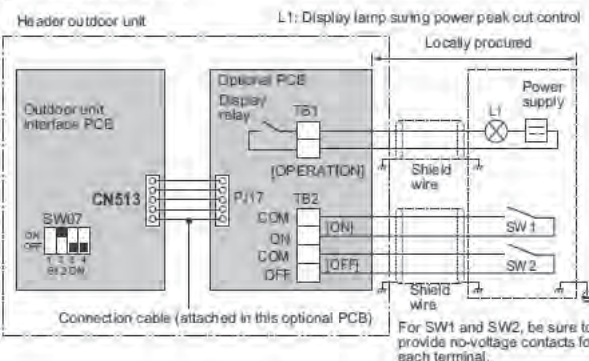
	Basic function	System diagram	Model
<p>10-3-4</p>	<p>Central management control with "1 : 1 model"</p>	 <p>* TOSHIBA Digital Inverter System and Super Digital Inverter System</p>	<ul style="list-style-type: none"> • Central remote controller TCB-SC642TLE2 BMS-CM1280TLE • ON-OFF controller TCB-CC163TLE2 • "1 : 1 model" connection interface TCB-PCNT30TLE2 <p>High-wall type for SDI/DI is not necessary this. 4-way and compact 4-way 4 series cassette type for SDI/DI need the metal fitting kit (TCB-PX30MUE).</p> <p>Indoor remote controller</p> <ul style="list-style-type: none"> • 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 RBC-AX32U(W)-E RBC-AX32U(WS)-E RBC-AX23UW(W)-E RBC-AX32CE2 TCB-AX32E2




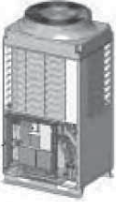
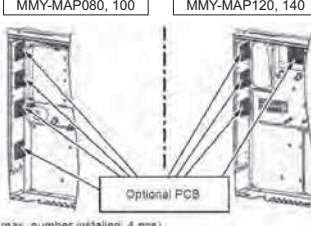
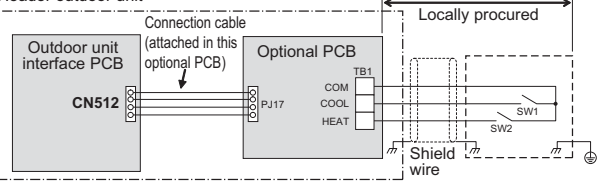


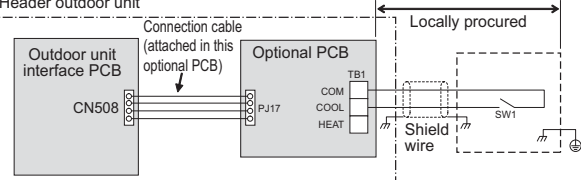










10-4. Application controls by optional P.C. board of outdoor unit

Model name	Appearance	Function																		
TCB-PCDM4E	 <p>Size : 71 x 85 (mm)</p>	<p>[1] Power peak-cut Control</p> <ul style="list-style-type: none"> 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. <p>Standard Specifications (Wiring example)</p>																		
	<p>Application</p>  <p>MMY-MAP080, 100 MMY-MAP120, 140</p> <p>Optional PCB</p>  <p>(max. number installed: 1 pc)</p> <p>* Install the optional P.C. board in the outdoor header unit.</p>	<p>Header outdoor unit L1: Display lamp during power peak cut control</p> <p>Locally procured</p> <p>Outdoor unit interface PCB Optional PCB</p> <p>Display relay TB1</p> <p>[OPERATION] TB2</p> <p>COM [ON]</p> <p>ON [OFF]</p> <p>COM [OFF]</p> <p>OFF</p> <p>Shield wire</p> <p>Shield wire</p> <p>Shield wire</p> <p>Connection cable (attached in this optional PCB)</p> <p>Power supply</p> <p>SW1</p> <p>SW2</p> <p>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.</p> <p><SW07 (bit 2) OFF [2-stage switching]></p> <table border="1"> <thead> <tr> <th colspan="2">Input</th> <th colspan="2">SW07 (bit 1)</th> <th rowspan="2">Display relay (L1)</th> </tr> <tr> <th>SW1</th> <th>SW2</th> <th>Bit 1 OFF</th> <th>Bit 1 ON</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>ON</td> <td>100% (normal operation)</td> <td>100% (normal operation)</td> <td>OFF</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>0% (forced stop)</td> <td>Approx. 60% (upper limit regulated)</td> <td>ON</td> </tr> </tbody> </table>	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)
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																


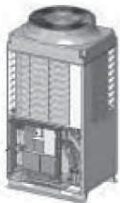
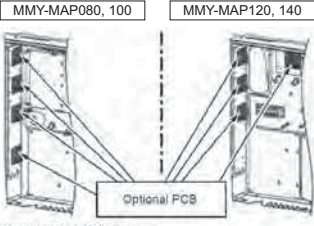
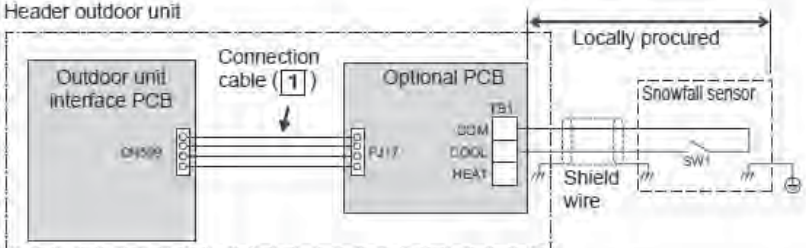


Model name	Appearance	Function																																												
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">TCB-PCDM4E</p>	 <p>Size : 55.5 x 60 (mm)</p>	<p>For one input function (SMMS-i and SHRM-i)</p> <p>Power peak-cut ON-OFF control is made possible on SMMS-i and SHRM-i on the [ON] terminal input (SW1) by cutting the jumper lead (J16) of the center outdoor unit interface PCB. (Wiring example)</p> 																																												
	<p>Application</p>  <p>MMY-MAP080, 100 MMY-MAP120, 140</p>  <p>(max. number installed: 1 pc)</p> <p>* Install the optional P.C. board in the outdoor header unit.</p>	<p><SW07 (bit 2) OFF [2-stage switching]></p> <p>Power peak-cut control turns ON when SW1 in the wiring example is ON (continuous make).</p> <table border="1"> <thead> <tr> <th rowspan="2">Jumper lead J16</th> <th rowspan="2">Input SW1</th> <th colspan="2">SW07 (bit 1)</th> <th rowspan="2">Display relay (L1)</th> </tr> <tr> <th>Bit 1 OFF</th> <th>Bit 1 ON</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Cut</td> <td>OFF</td> <td>100% (normal operation)</td> <td>100% (normal operation)</td> <td>OFF</td> </tr> <tr> <td>ON</td> <td>0% (forced stop)</td> <td>Approx. 60% (upper limit regulated)</td> <td>ON</td> </tr> </tbody> </table> <p>Enhanced Specifications (Wiring example)</p>  <p><SW07 (bit 2) ON [4-stage switching]></p> <table border="1"> <thead> <tr> <th colspan="2">Input</th> <th colspan="2">SW07 (bit 1)</th> <th rowspan="2">Display relay (L1)</th> </tr> <tr> <th>SW1</th> <th>SW2</th> <th>Bit 1 OFF</th> <th>Bit 1 ON</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>100% (normal operation)</td> <td>100% (normal operation)</td> <td>OFF</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>Approx. 80% (upper limit regulated)</td> <td>Approx. 85% (upper limit regulated)</td> <td>ON</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>Approx. 60% (upper limit regulated)</td> <td>Approx. 75% (upper limit regulated)</td> <td>ON</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>0% (forced stop)</td> <td>Approx. 60% (upper limit regulated)</td> <td>ON</td> </tr> </tbody> </table>	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	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)
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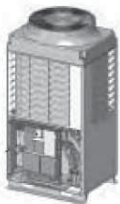
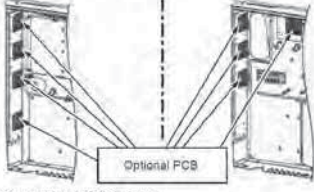
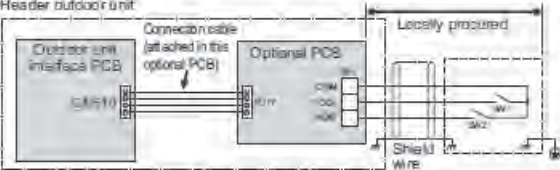


Model name	Appearance	Function																
TCB-PCMO4E	 <p>Size : 55.5 x 60 (mm)</p>	<p>[2] External master ON/OFF control</p> <ul style="list-style-type: none"> • Feature The outdoor unit starts or stop the system. • Function By connecting the cable (attached in this optional PCB) to the interface 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). 																
	<p>Application</p>   <p>(max. number installed, 4 pcs)</p> <p>* Install the optional P.C. board in the outdoor header unit.</p>	<div style="border: 1px dashed black; padding: 5px;"> <p>Header outdoor unit</p>  <p>SW1: Operation input switch SW2: Stop input switch</p> </div> <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>Batch-operates indoor units.</td> </tr> <tr> <td>HEAT (SW2)</td> <td>ON OFF </td> <td>Batch-stops indoor units.</td> </tr> </tbody> </table> <p>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</p> <p>[3] Night time operation(sound reduction) control</p> <ul style="list-style-type: none"> • Purpose : Reducing noise from an outdoor unit • Functions The rotation speed of the compressor and fan can be restricted during input of the night time signal to reduce noise by connecting to the PCB of outdoor units. • Operation The outdoor unit connection is for the header unit (U1). <div style="border: 1px dashed black; padding: 5px;"> <p>Header outdoor unit</p>  <p>SW1: Night time signal switch</p> </div> <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>Night time control</td> </tr> <tr> <td>ON OFF </td> <td>Normal time control</td> </tr> </tbody> </table> <p>Be sure to provide no-voltage continuous contacts for each terminal.</p>	Terminal	Input signal	Operation	COOL (SW1)	ON OFF 	Batch-operates indoor units.	HEAT (SW2)	ON OFF 	Batch-stops indoor units.	Terminal	Input signal	Operation	COOL (SW1)	ON OFF 	Night time control	ON OFF 
Terminal	Input signal	Operation																
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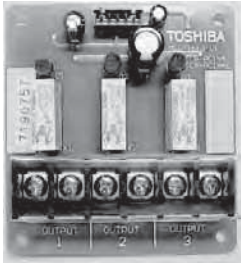
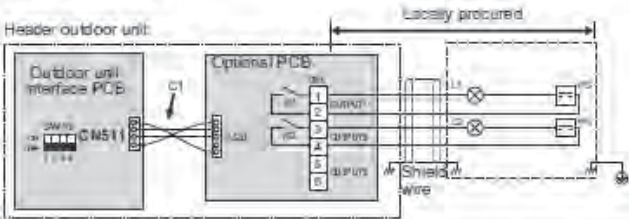
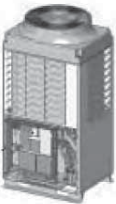
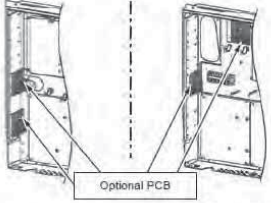


Model name	Appearance	Function																																																											
TCB-PCMO4E	 <p>Size : 55.5 x 60 (mm)</p>	<p>Sound reduction and approximation capacity(reference)</p> <table border="1"> <thead> <tr> <th rowspan="2">System</th> <th rowspan="2">Model</th> <th rowspan="2">Sound reduction level dB(A)</th> <th colspan="2">Capacity</th> </tr> <tr> <th>Cooling</th> <th>Heating</th> </tr> </thead> <tbody> <tr> <td rowspan="2">SMMS</td> <td>0501HT</td> <td>50</td> <td>approx. 85%</td> <td>approx. 80%</td> </tr> <tr> <td>0601HT</td> <td>50</td> <td>approx. 75%</td> <td>approx. 70%</td> </tr> <tr> <td rowspan="5">SMMS-i</td> <td>0804HT</td> <td>50</td> <td>approx. 85%</td> <td>approx. 80%</td> </tr> <tr> <td>1004HT</td> <td>50</td> <td>approx. 70%</td> <td>approx. 65%</td> </tr> <tr> <td>1204HT</td> <td>50</td> <td>approx. 60%</td> <td>approx. 55%</td> </tr> <tr> <td>1404HT</td> <td>53</td> <td>approx. 80%</td> <td>approx. 80%</td> </tr> <tr> <td>1604HT</td> <td>53</td> <td>approx. 70%</td> <td>approx. 70%</td> </tr> <tr> <td rowspan="3">SHRM-i</td> <td>0804FT</td> <td>50</td> <td>approx. 90%</td> <td>approx. 85%</td> </tr> <tr> <td>1004FT</td> <td>50</td> <td>approx. 75%</td> <td>approx. 70%</td> </tr> <tr> <td>1204FT</td> <td>53</td> <td>approx. 90%</td> <td>approx. 80%</td> </tr> <tr> <td></td> <td></td> <td>1404FT</td> <td>53</td> <td>approx. 80%</td> <td>approx. 70%</td> </tr> </tbody> </table>				System	Model	Sound reduction level dB(A)	Capacity		Cooling	Heating	SMMS	0501HT	50	approx. 85%	approx. 80%	0601HT	50	approx. 75%	approx. 70%	SMMS-i	0804HT	50	approx. 85%	approx. 80%	1004HT	50	approx. 70%	approx. 65%	1204HT	50	approx. 60%	approx. 55%	1404HT	53	approx. 80%	approx. 80%	1604HT	53	approx. 70%	approx. 70%	SHRM-i	0804FT	50	approx. 90%	approx. 85%	1004FT	50	approx. 75%	approx. 70%	1204FT	53	approx. 90%	approx. 80%			1404FT	53	approx. 80%	approx. 70%
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		1204HT	50	approx. 60%	approx. 55%																																																								
		1404HT	53	approx. 80%	approx. 80%																																																								
		1604HT	53	approx. 70%	approx. 70%																																																								
SHRM-i	0804FT	50	approx. 90%	approx. 85%																																																									
	1004FT	50	approx. 75%	approx. 70%																																																									
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		1404FT	53	approx. 80%	approx. 70%																																																								
Application																																																													
	<p>Condition Cooling : (Indoor 27deg DB, 19deg WB) (Outdoor temperature 25deg DB) Heating : (Indoor 20 deg DB) (Outdoor temperature 7deg DB, 6 deg WB)</p>																																																												
 <p>MMY-MAP080, 100 MMY-MAP120, 140</p> <p>Optional PCB</p> <p>(max. number installed, 4 pcs)</p>	<p>Microphone position Front 1m, Height 1m</p>																																																												
<p>* Install the optional P.C. board in the outdoor header unit.</p>	<p>[4] Snowfall fan control</p>																																																												
	<ul style="list-style-type: none"> • Purpose : Rotating the fan to prevent snow accumulation • Feature 																																																												
	<p>Outdoor fan is operated from the snowfall signal received from the outside.</p>																																																												
	<p>▼ Functions The outdoor unit fan operates at snowfall by connecting to the outdoor unit interface PCB.</p>																																																												
<p>▼ Operation</p>																																																													
 <p>Header outdoor unit</p> <p>Outdoor unit interface PCB (OH500)</p> <p>Optional PCB (FJ17)</p> <p>Connection cable (1)</p> <p>Locally procured: Snowfall sensor, SW1, Shield wire</p>																																																													
<p>SW1: Snowfall detection switch (snowfall sensor)</p>																																																													
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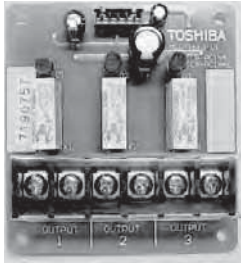
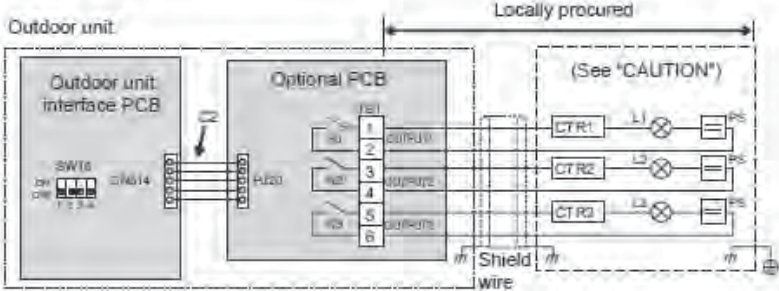
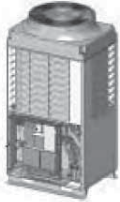
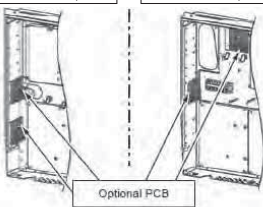


Model name	Appearance	Function																																																							
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">TCB-PCMO4E</p>	 <p>Size : 55.5 x 60 (mm)</p>	<p>[5] Operation mode selection control</p> <ul style="list-style-type: none"> • Purpose: Limiting operation modes to cooling and heating only • Feature This control can restrict the selectable operation mode. <p>▼ Function The heating/cooling mode of the system can be selected by connecting to the interface PCB of outdoor units.</p> <p>▼ Operation The outdoor unit connection is for the header unit (U1).</p>																																																							
	<p style="text-align: center;">Application</p>  <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px;">MMY-MAP080, 100</div> <div style="border: 1px solid black; padding: 2px;">MMY-MAP120, 140</div> </div>  <p>(max. number installed, 4 pcs)</p> <p>* Install the optional P.C. board in the outdoor header unit.</p>	 <p>SW1: Cooling mode specified input switch SW2: Heating mode specified input switch</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="2">Input Signal</th> <th rowspan="2">Operation: Selected operation mode</th> </tr> <tr> <th>Cooling (SW1)</th> <th>Heating (SW2)</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>OFF</td> <td>Cooling operation only</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>Heating operation only</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>Normal operation</td> </tr> </tbody> </table> <p>Each terminal should be connected to dry contact.</p> <p>About Switching of Processing of Indoor Unit Operation State [Setting can be changed on SMMS-i and SHRM-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.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Jumper lead</th> <th colspan="3">Details of Processing</th> </tr> </thead> <tbody> <tr> <td rowspan="4">J01 connected (factory default)</td> <td colspan="3">Unallowed indoor units in a mode other than the selected operation mode are not treated as priority (thermo OFF state). (Unallowed indoor units)</td> </tr> <tr> <td>Operation Mode</td> <td>Operation State</td> <td>Remote control</td> </tr> <tr> <td>Cooling unit</td> <td>Air blow operation at blow rate set on remote control</td> <td rowspan="3">⏻ indicator is displayed.</td> </tr> <tr> <td>Heating unit</td> <td>Air blow operation at super-slow blow rate</td> </tr> <tr> <td>Air blow unit</td> <td>Regular air blow operation at blow rate set on remote control</td> </tr> <tr> <td rowspan="4">J01 cut</td> <td colspan="3">Indoor units in a mode other than the selected operation mode are forcibly switched to the selected operation mode.</td> </tr> <tr> <td>PC board selection mode</td> <td colspan="2">Remote control operation/display</td> </tr> <tr> <td>Normal</td> <td>*, ∆, ☀, or ❄ can be selected</td> <td rowspan="3">When using the remote control, ⏻ (mode select control) indicator is displayed.</td> </tr> <tr> <td>Cool</td> <td>Only *, ∆, or ❄ can be selected</td> </tr> <tr> <td>Heat</td> <td>Only ☀ or ❄ can be selected</td> </tr> </tbody> </table> <p>▼ 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.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>PC board selection mode</th> <th colspan="2">Remote control operation/display</th> </tr> </thead> <tbody> <tr> <td>Normal</td> <td>*, ∆, ☀, or ❄ can be selected</td> <td rowspan="3">When using the remote control, ⏻ (mode select control) indicator is displayed.</td> </tr> <tr> <td>Cool</td> <td>Only *, ∆, or ❄ can be selected</td> </tr> <tr> <td>Heat</td> <td>Only ☀ or ❄ can be selected</td> </tr> </tbody> </table>	Input Signal		Operation: Selected operation mode	Cooling (SW1)	Heating (SW2)	ON	OFF	Cooling operation only	OFF	ON	Heating operation only	OFF	OFF	Normal operation	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	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
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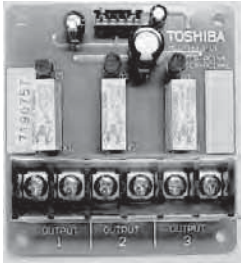
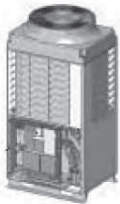
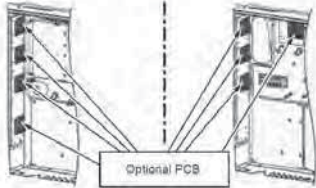
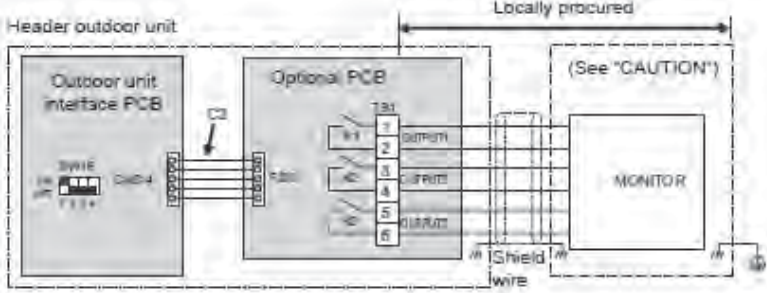


Model name	Appearance	Function																			
TCB-PCIN4E	 <p>Size: 73 x 79 (mm)</p>	<p>[6] Error / Operation Output</p> <ul style="list-style-type: none"> • Feature Operation and error monitoring is possible. <p>▼ Function The operation error output PCB can indicate operation and error states by connecting to the interface PCB of outdoor units.</p> <p>▼ 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.</p> <p>Wiring example</p> 																			
	<p style="text-align: center;">Application</p>  <div style="display: flex; justify-content: space-around;"> <div>MMY-MAP080, 100</div> <div>MMY-MAP120, 140</div> </div>  <p style="text-align: center;">Optional PCB (max. number installed: 2 pcs)</p> <p>* Install the optional P.C. board in the outdoor header unit.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">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> <p>* [OUTPUT3] is normally output when power is turned out.</p>	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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Model name	Appearance	Function																									
TCB-PCIN4E	 <p>Size: 73 x 79 (mm)</p>	<p>[7] Compressor Operation Output (SMMS-i and SHRM-i)</p> <ul style="list-style-type: none"> • Feature Outputs the operation status of the compressors in each outdoor unit. <p>▼ 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.</p> <p>▼ 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.</p> <p>Wiring example</p> 																									
	<p style="text-align: center;">Application</p>  <p>MMY-MAP080, 100 MMY-MAP120, 140</p>  <p style="text-align: center;">Optional PCB (max. number installed: 2 pcs)</p> <p>* Install the optional P.C. board in individual outdoor unit</p>	<table border="1"> <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
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Model name	Appearance	Function																																															
TCB-PCIN4E	 <p>Size: 73 x 79 (mm)</p>	<p>[8] Operating Rate Output (SMMS-i and SHRM-i)</p> <ul style="list-style-type: none"> • Feature Relay turn ON/OFF depending on the running rate of the system. <p>▼ Functions The operation state can be remotely checked since the system operating rate signal can be output externally.</p> <p>▼ 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.</p> <table border="1"> <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="8">System operating rate output</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>FA=0%</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>0%<FA<20%</td> </tr> <tr> <td></td> <td>OFF</td> <td>ON</td> <td>OFF</td> <td>20%≤FA<35%</td> </tr> <tr> <td></td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>35%≤FA<50%</td> </tr> <tr> <td></td> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>50%≤FA<65%</td> </tr> <tr> <td></td> <td>ON</td> <td>OFF</td> <td>ON</td> <td>65%≤FA<80%</td> </tr> <tr> <td></td> <td>OFF</td> <td>ON</td> <td>ON</td> <td>80%≤FA<95%</td> </tr> <tr> <td></td> <td>ON</td> <td>ON</td> <td>ON</td> <td>95%≤FA</td> </tr> </tbody> </table> <p style="text-align: right;">OFF=relay open ON=relay closed</p>	Functions	SW16	OUTPUT1	OUTPUT2	OUTPUT3	Operating rate FA	System operating rate output	ON	OFF	OFF	OFF	FA=0%	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
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10-5. Application control of optional devices connectable to indoor units

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

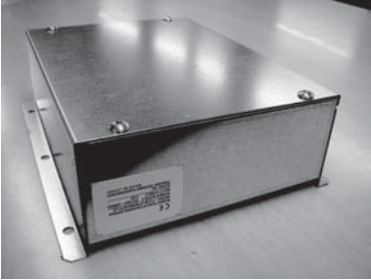
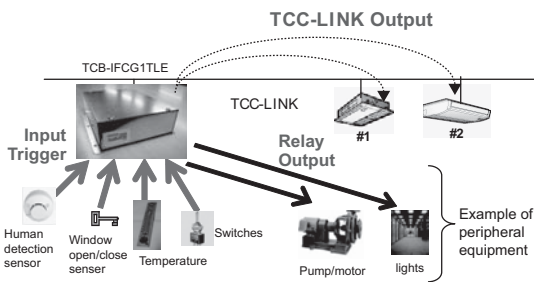
Model name	Appearance	Function
TCB-IFCB-4E2		<ul style="list-style-type: none"> Start and stop of the air conditioner is possible by an external signal and indication of operation/alarm externally.
	<p>Appearance</p>	<p>Function</p> <ul style="list-style-type: none"> Monitoring ON/OFF status (for indoor 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	<p>(85 x 52 mm)</p> <p>Install optional P.C. board in E-parts of the indoor unit.</p>	<ul style="list-style-type: none"> Link adapter for "1:1 model" to enable connection to VRF system network <p>1:1 model : Super digital inverter Digital inverter</p> <ul style="list-style-type: none"> High-wall type does not need this interface. Some types of indoor units (2 series compact, 4-way discharge cassette 4 series, etc.) need the metal case TCB-PX30MUE to use this interface. Refer to the Installation manual of each unit for details.
	<p>Appearance</p>	<p>Connection of cables</p>
		<p>Wiring diagram of indoor P.C. board</p>

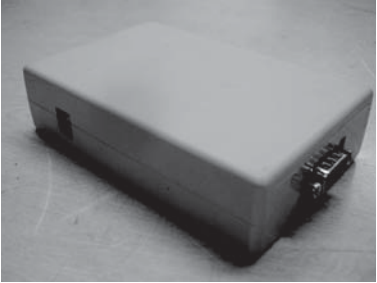
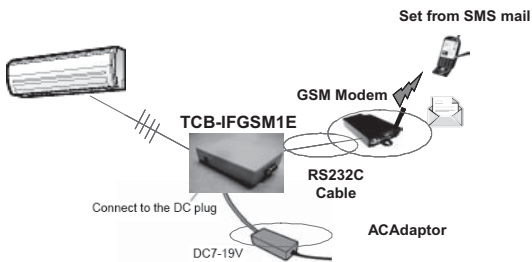


10-5-3. General purpose Interface


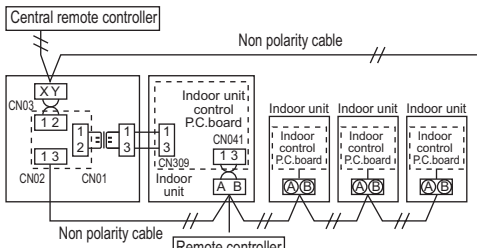
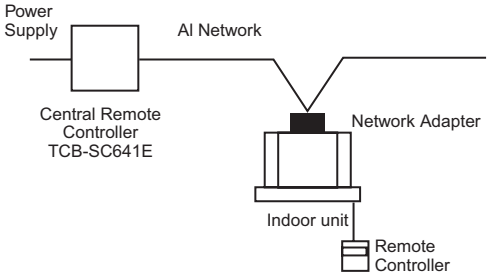
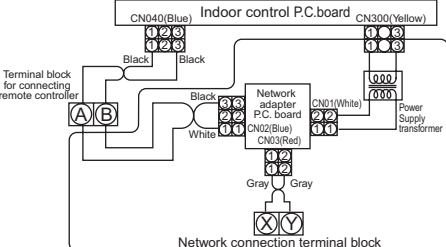
Model name	Appearance	Function																						
TCB-IFCG1TLE		<p>Provide various applied controls that enable connection between the indoor unit and external equipments.</p> <ul style="list-style-type: none"> • Equipped with 4 Relay contact outputs, 2 Analogue Outputs through which a central controller 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, SMMS, SMMS-i, MiNi-SMMS, SHRM, SRIM-i) 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). <p>Programmable Control by Special Tool</p> <ul style="list-style-type: none"> • Operation of specified indoor units can be programmed on site with input ports level change. 																						
	<p style="text-align: center;">Central control via tcc-link Connectable with HA terminal (4pin input/output), alarm input Interlocking Operation (below)</p> 	<p>Connection to Tcc-link Interlocking operation with indoors and input ports.</p> <ul style="list-style-type: none"> • 2 Analog/5 Digital inputs can interlock with 64 indoors and 4 Relays. • 12 programs possible. <p>Port specification</p> <table border="1"> <thead> <tr> <th>Input/output ports</th> <th>Channel number</th> <th>Main spec</th> <th>Connected Device/Apparatus example</th> </tr> </thead> <tbody> <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> </tbody> </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		<p>Controlling and Monitoring Toshiba air conditioning from registered mobile phone.</p> <ul style="list-style-type: none"> • 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 DI/SDI, SMMS, SMMS-i, MiNi-SMMS, SHRM, SRIM-i • 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
	 <p>Set from SMS mail</p> <p>Connect to the DC plug</p> <p>DC7-19V</p> <p>ACAdaptor</p>	<p>Non LAN / Internet area Secured Remote control or monitoring of air-conditioner ON/OFF control/monitoring</p> <ul style="list-style-type: none"> • 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	 <p>Install optional P.C. board in E-parts of indoor unit.</p>	<ul style="list-style-type: none"> • Indoor units of VRF system are controlled by AI-NETWORK central remote controller. Connectable indoor units per group. <p style="text-align: center;">Connection of cables</p> 
	<p style="text-align: center;">Appearance</p> 	<p style="text-align: center;">Wiring diagram of indoor P.C. board</p> 

10-6. Application control for network

10-6-1. LONWORKS

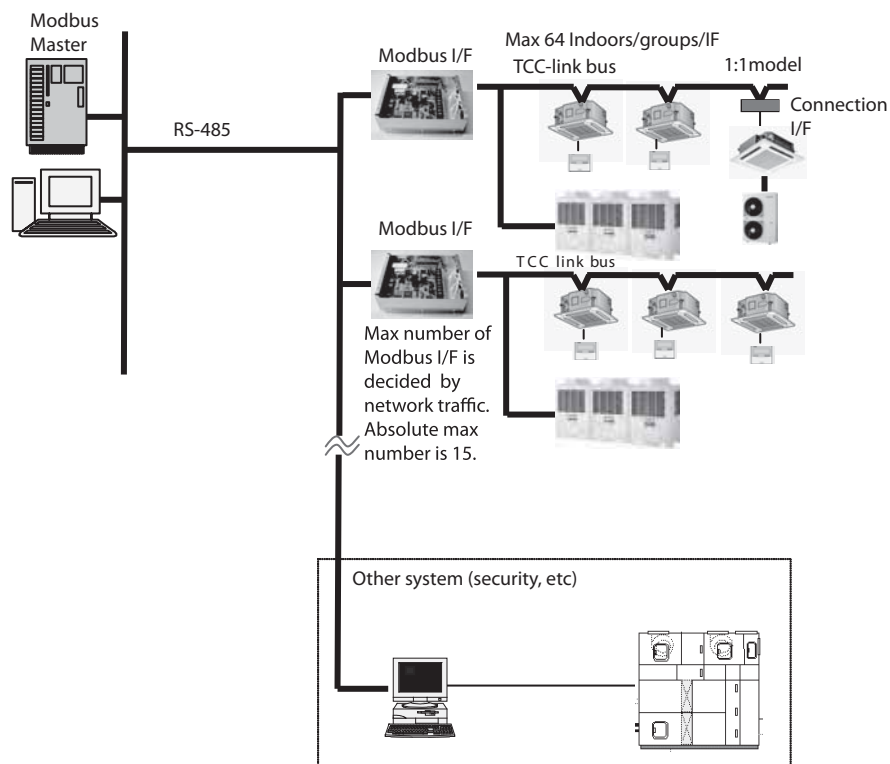
System diagram	Model
<p>Max 64 Indoors/groups/IF</p> <p>Twisted pair line Free/Bus topology</p> <p>LONWORKS Controller</p> <p>LON I/F</p> <p>TCC-link bus</p> <p>1:1 model</p> <p>Connection I/F</p> <p>LON I/F</p> <p>Max number of LON I/F is decided by network traffic or points numbers. Absolute max number is 127.</p> <p>Other system (security, etc)</p>	<ul style="list-style-type: none"> • LON Interface TCB-IFLN642TLE • “1:1model” connection TCC-Link Interface TCB-PCNT30TLE2 • Wired Remote controller RBC-AMT32E • Wireless Remote controller RBC-AX32U(W)-E RBC-AX32U(WS)-E RBC-AX23UW(W)-E RBC-AX32CE2 TCB-AX32E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES <p>[Note] Xif file:</p> <ul style="list-style-type: none"> • controller commissioning without LON Interface

10-6-2. BACnet

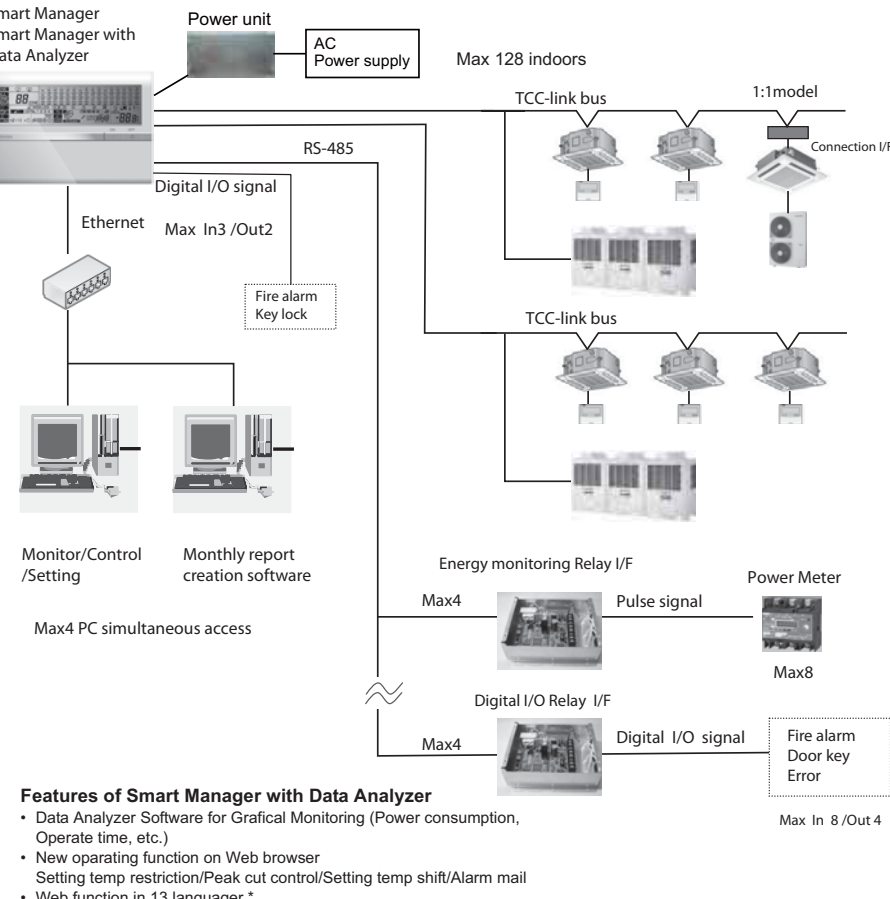
System diagram	Model
<p>Max 128Indoors</p> <p>BACnet server</p> <p>RS-485</p> <p>Ethernet</p> <p>BACnet Server Software</p> <p>Max number of BACnet server depends on IP network and upper system.</p> <p>In case of 10BASE-T: Category 3 or Category 5 In case of 100BASE-TX: Category 5 (*)BACnet IP, (Annex J)</p> <p>Ethernet</p> <p>Other system</p> <p>Central management controller</p> <p>Relay I/F</p> <p>TCC-link bus</p> <p>1:1 model</p> <p>Connection I/F</p> <p>Relay I/F</p> <p>Max8</p>	<ul style="list-style-type: none"> • 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-AX32U(W)-E RBC-AX32U(WS)-E RBC-AX23UW(W)-E RBC-AX32CE2 TCB-AX32E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES <p>[Note] Pc BACnet explorer:</p> <ul style="list-style-type: none"> • Commissioning for BACnet server (local supply)



10-6-3. Modbus

System diagram	Model
 <p>Modbus Master</p> <p>RS-485</p> <p>Modbus I/F</p> <p>Max 64 Indoors/groups/IF</p> <p>TCC-link bus</p> <p>1:1 model</p> <p>Connection I/F</p> <p>Modbus I/F</p> <p>TCC link bus</p> <p>Max number of Modbus I/F is decided by network traffic. Absolute max number is 15.</p> <p>Other system (security, etc.)</p>	<ul style="list-style-type: none"> • Modbus I/F • TCB-IFMB640TLE • “1:1model” connection • TCC-Link Interface • TCB-PCNT30TLE2 • Wired Remote controller • RBC-AMT32E • Wireless Remote controller • RBC-AX32U(W)-E • RBC-AX32U(WS)-E • RBC-AX23UW(W)-E • RBC-AX32CE2 • TCB-AX32E2 • Wired Remote controller with schedule timer • RBC-AMS41E • RBC-AMS51E-EN/ES <p>[Note]</p> <ul style="list-style-type: none"> • Pc master dummy program: Commissioning for Modbus I/F

10-6-4. Smart Manager / Smart Manager with Data Analyzer

System diagram	Model
 <p>Smart Manager Smart Manager with Data Analyzer</p> <p>Power unit</p> <p>AC Power supply</p> <p>Max 128 indoors</p> <p>TCC-link bus</p> <p>1:1 model</p> <p>Connection I/F</p> <p>RS-485</p> <p>Digital I/O signal</p> <p>Max In3 /Out2</p> <p>Fire alarm Key lock</p> <p>Ethernet</p> <p>Monitor/Control /Setting</p> <p>Monthly report creation software</p> <p>Max4 PC simultaneous access</p> <p>Energy monitoring Relay I/F</p> <p>Max4</p> <p>Pulse signal</p> <p>Power Meter</p> <p>Max8</p> <p>Digital I/O Relay I/F</p> <p>Max4</p> <p>Digital I/O signal</p> <p>Fire alarm Door key Error</p> <p>Max In 8 /Out 4</p> <p>Features of Smart Manager with Data Analyzer</p> <ul style="list-style-type: none"> • Data Analyzer Software for Grafical Monitoring (Power consumption, Operate time, etc.) • New operating function on Web browser Setting temp restriction/Peak cut control/Setting temp shift/Alarm mail • Web function in 13 languager * 	<ul style="list-style-type: none"> • Smart Manager • BMS-SM1280HTLE • Smart Manager with Data Analyzer • BMS-SM1280ETLE • 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-AX32U(W)-E • RBC-AX32U(WS)-E • RBC-AX23UW(W)-E • RBC-AX32CE2 • TCB-AX32E2 • Wired Remote controller with schedule timer • RBC-AMS41E • RBC-AMS51E-EN/ES • Languagers * • Smart Manager : 6 languages English/French/German/Italian/Spanish/Chinese • Smart Manager with Data Analyzer : 13 languages English/French/German/Italian/Spanish/Portuguese/Turkey/Russian/Greek/Dutch/Czech/Croatian/Chinese



10-6-5. Touch Screen Controller

System diagram	Model
<p>Max 64/512 Indoors Touch Screen Controller</p> <p>Relay I/F Max12</p> <p>Energy monitoring Relay I/F Max8</p> <p>Digital I/O Relay I/F Max8</p> <p>Relay I/F Max12</p> <p>Energy monitoring Relay I/F Max8</p> <p>Digital I/O Relay I/F Max8</p> <p>Power Meter Max8</p> <p>Fire alarm Door key Error</p> <p>Max In 8 / Out 4</p> <p>Power meter: Pulse width:50-1000ms Pulse generator constants (kWh/pulse) 0.1-99.9</p> <p>Monthly report creation software</p>	<ul style="list-style-type: none"> • 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-AX32U(W)-E RBC-AX32U(WS)-E RBC-AX23UW(W)-E RBC-AX32CE2 TCB-AX32E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES



10-6-6. WEB Based Controller

System diagram

Network, Intranet, connection through LAN port

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

- Energy monitoring Relay I/F
BMS-IFWH5E

- Digital I/O
Relay I/F
BMS-IFDD03E
- Wired Remote controller
RBC-AMT32E
- Wireless Remote controller
RBC-AX32U(W)-E
RBC-AX32U(WS)-E
RBC-AX32CE2
TCB-AX32E2
- 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

Max 257 Indoors or more

Network, Intranet, connection through LAN port
Enable to connector up to 2,048 FCUs

System product configuration table

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

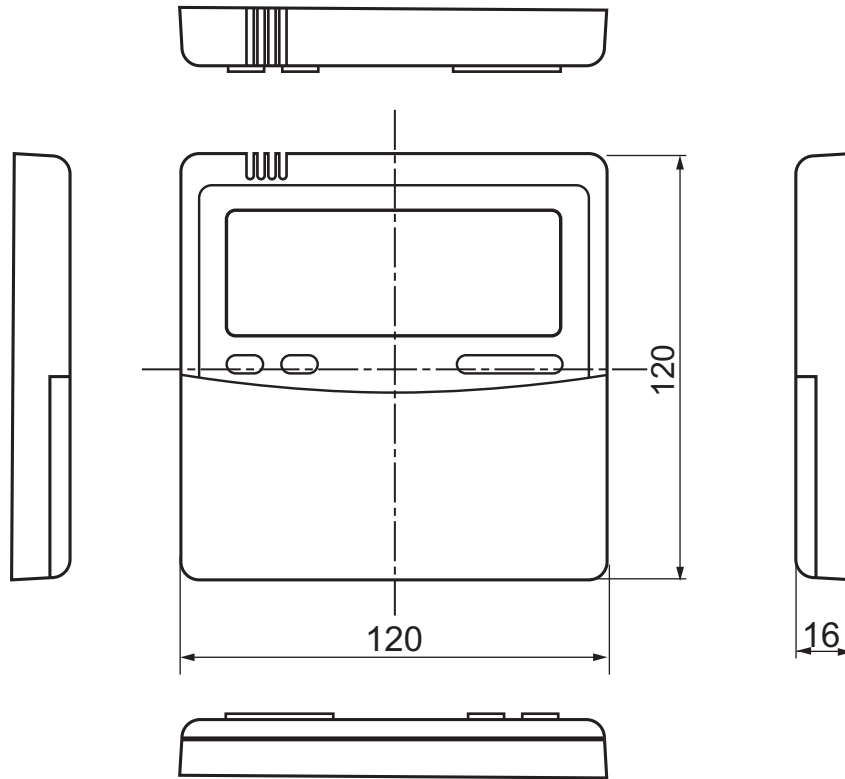
System diagram	Model
<p>The diagram illustrates the analog interface system architecture. On the left, a control source (either a Rotary Switch or a PLC/Analog Unit) provides a 0-10VDC signal to the Analog I/F module. This module is connected to a TCC-link bus, which supports a maximum of 64 indoor units or groups. The bus branches into two types of connections: 1:1 model connections and General purpose I/F connections. A separate Connection I/F module is also shown connected to the bus.</p>	<ul style="list-style-type: none"> • 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-AX32U(W)-E RBC-AX32U(WS)-E RBC-AX23UW(W)-E RBC-AX32CE2 TCB-AX32E2 • Wired Remote controller with schedule timer RBC-AMS41E RBC-AMS51E-EN/ES



10-7. Dimensional drawing

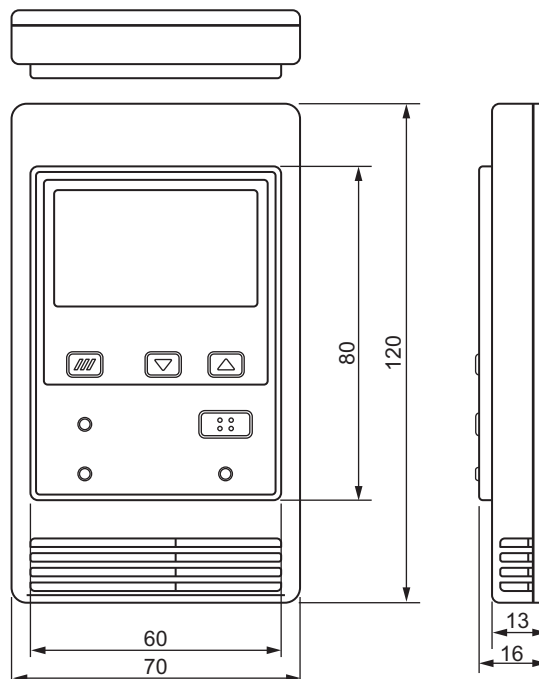
Wired remote controller

RBC-AMT32E / NRC-01HE



Simple wired remote controller

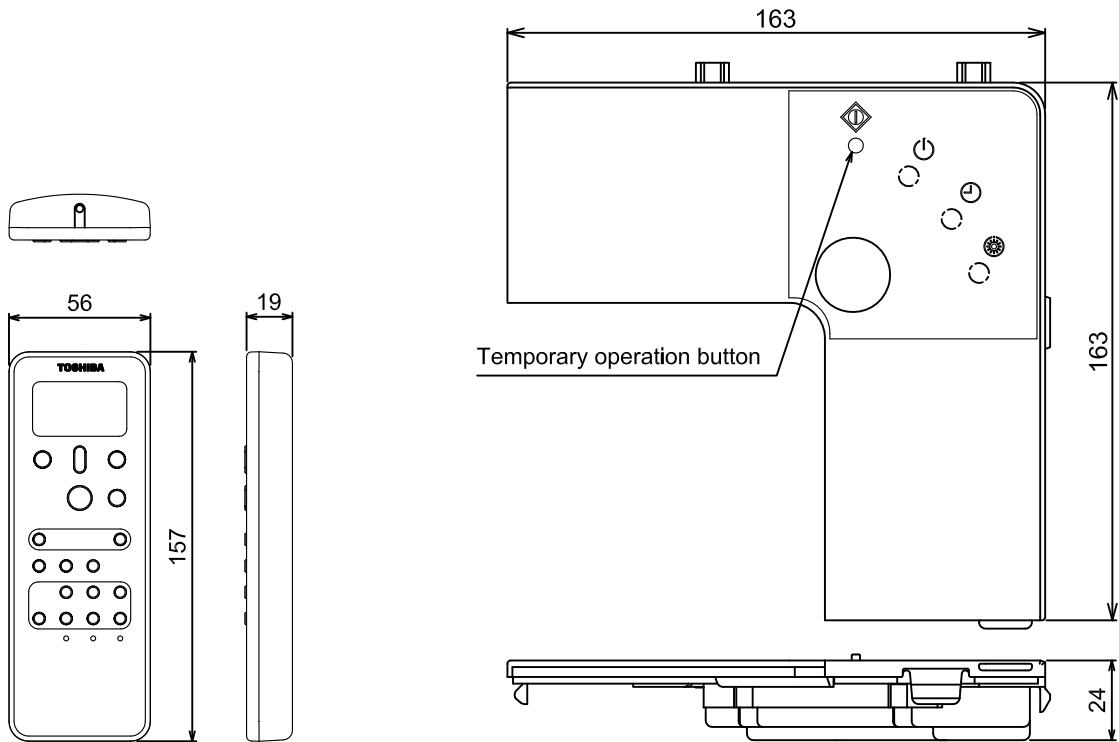
RBC-AS21E2





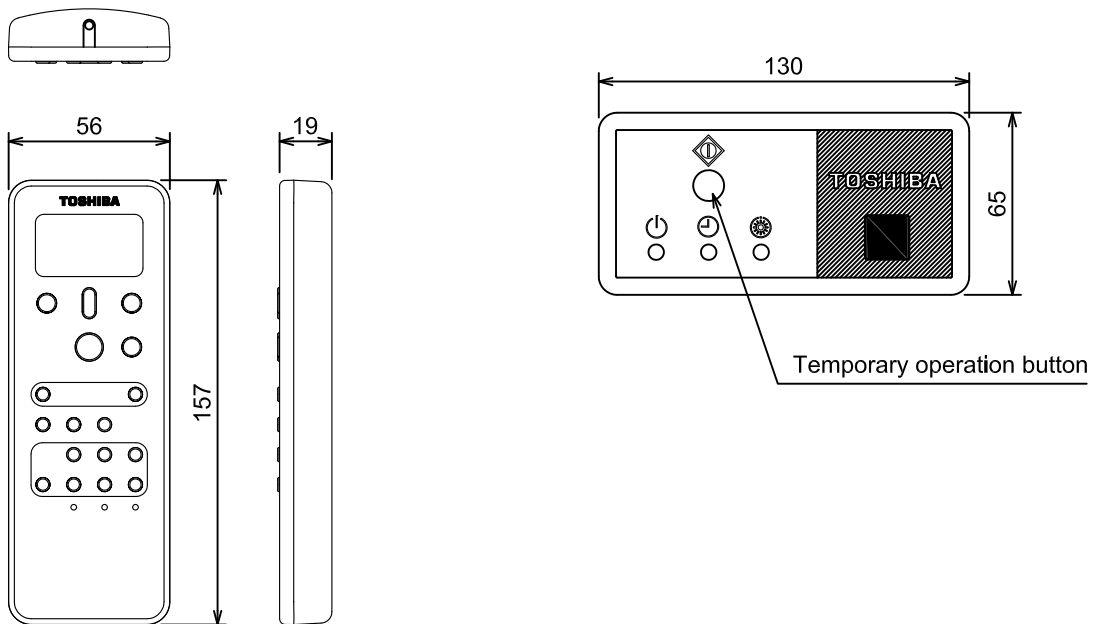
Wireless remote controller kit

RBC-AX32U(W)-E / RBC-AX32U(WS)-E



Wireless remote controller kit

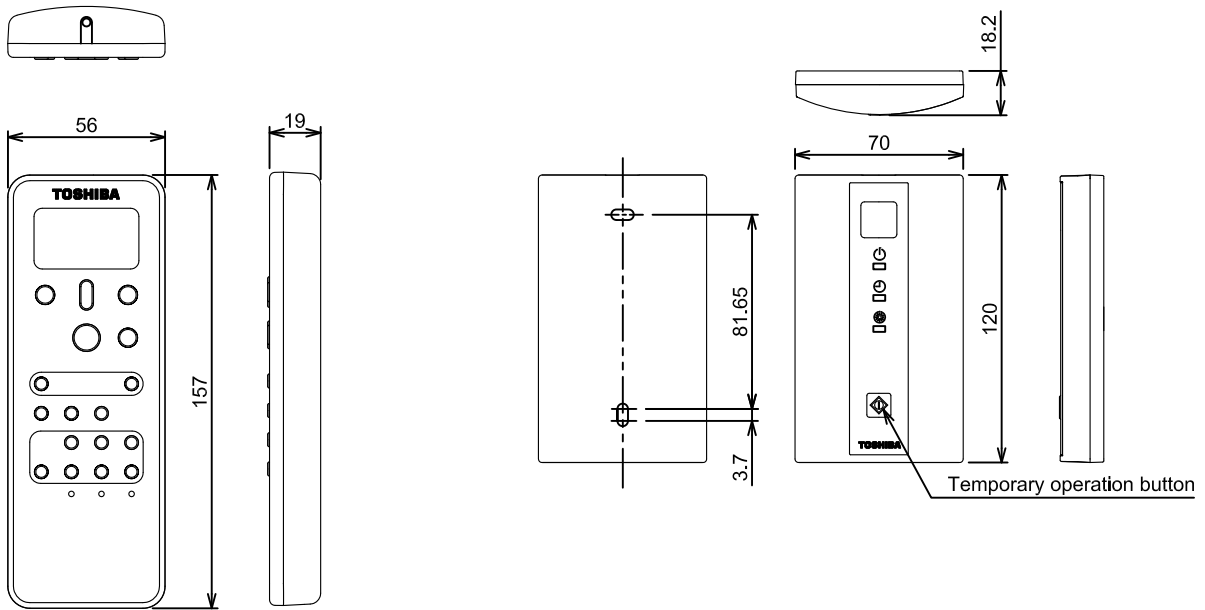
RBC-AX32CE2





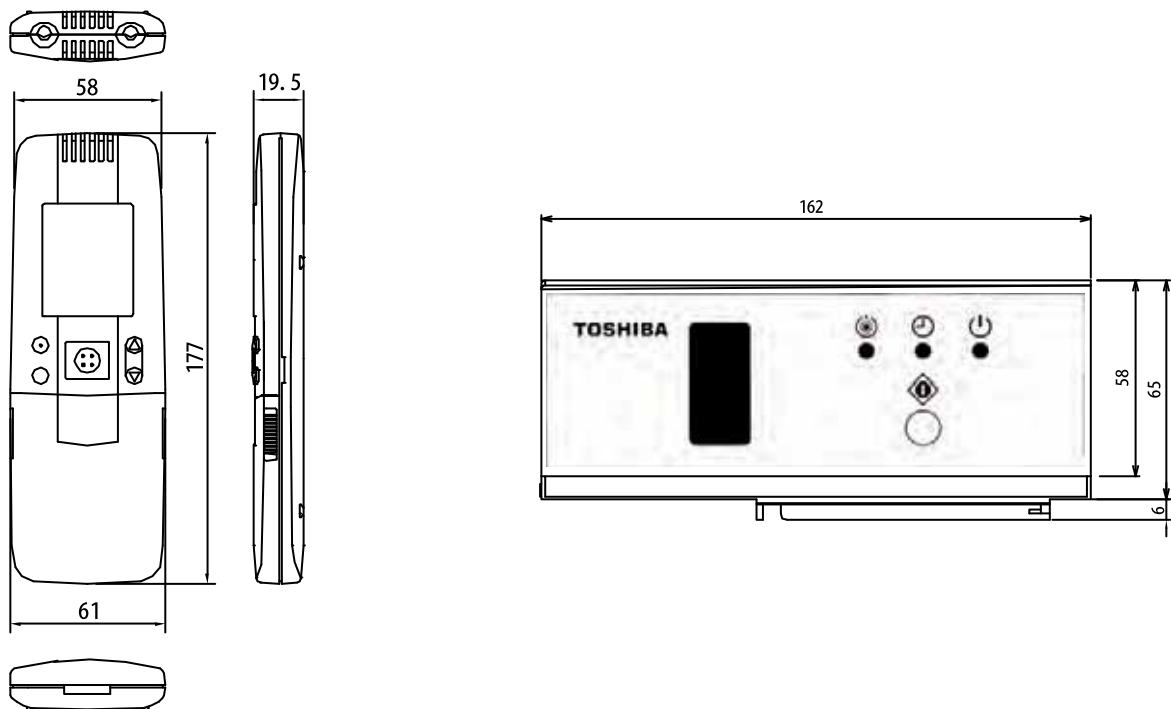
Wireless remote controller kit

TCB-AX32E2



Wireless remote controller kit

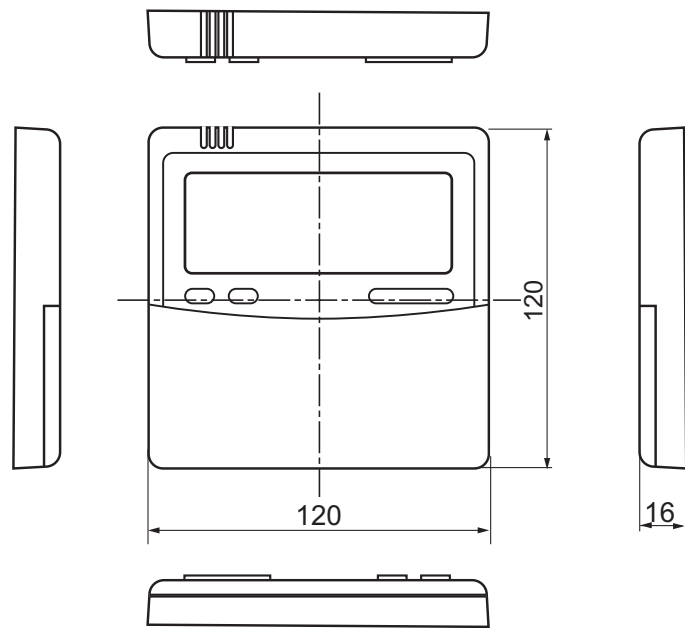
RBC-AX23UW(W)-E





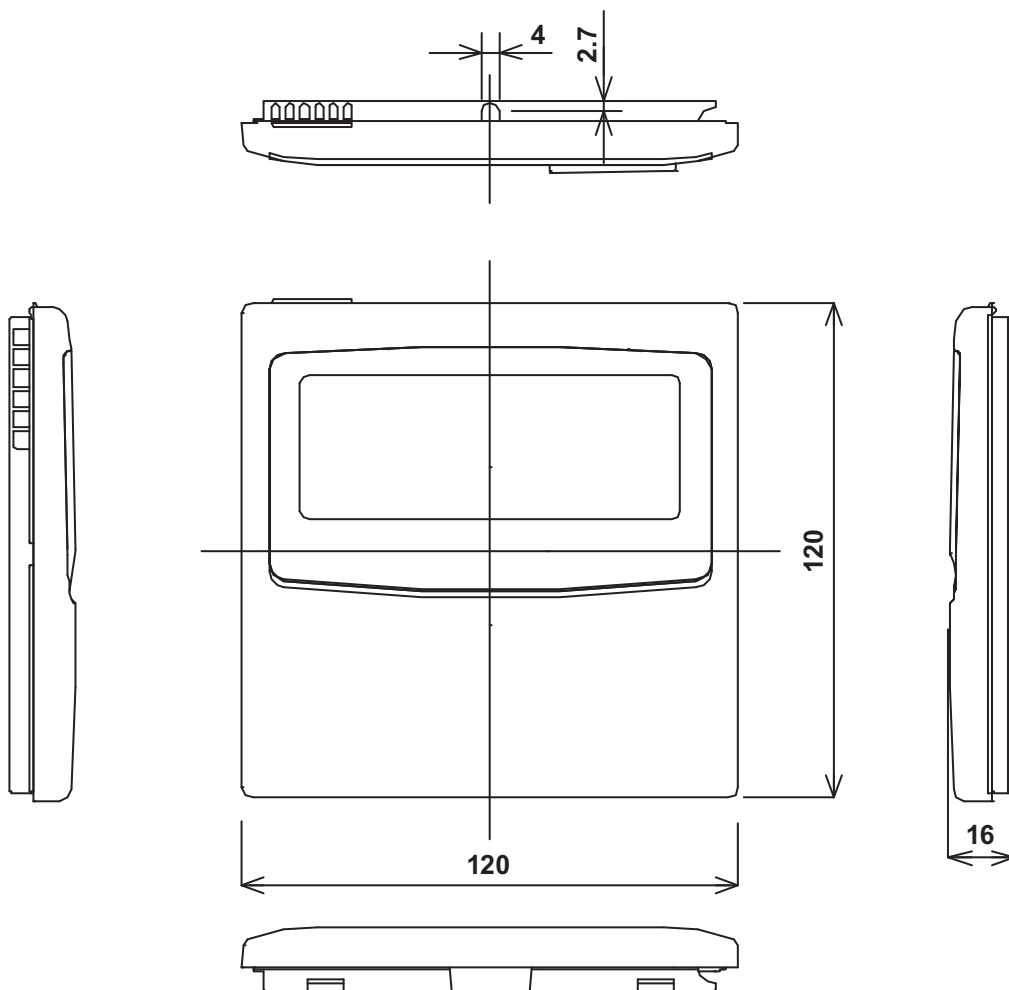
Wired remote controller with schedule timer

RBC-AMS41E



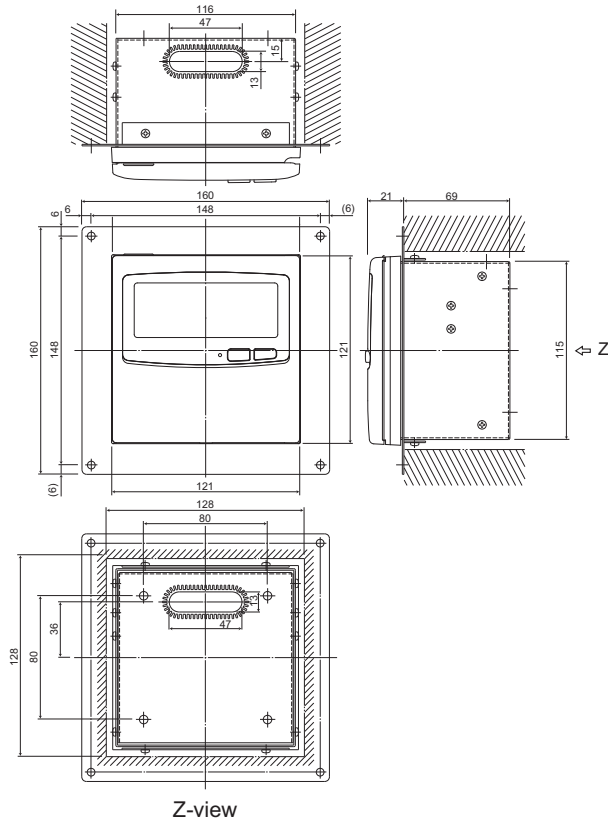
Schedule timer

TCB-EXS21TLE



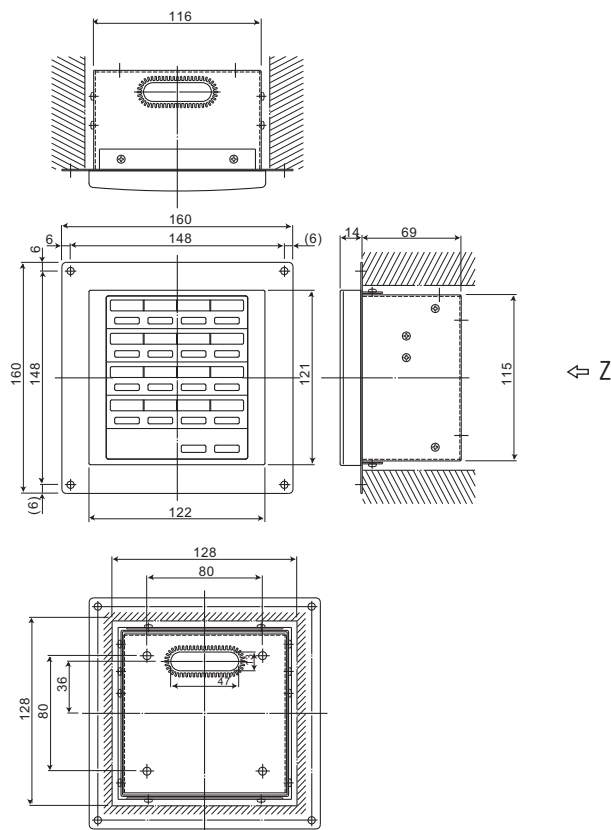
Central remote controller

TCB-SC642TLE2



ON-OFF controller

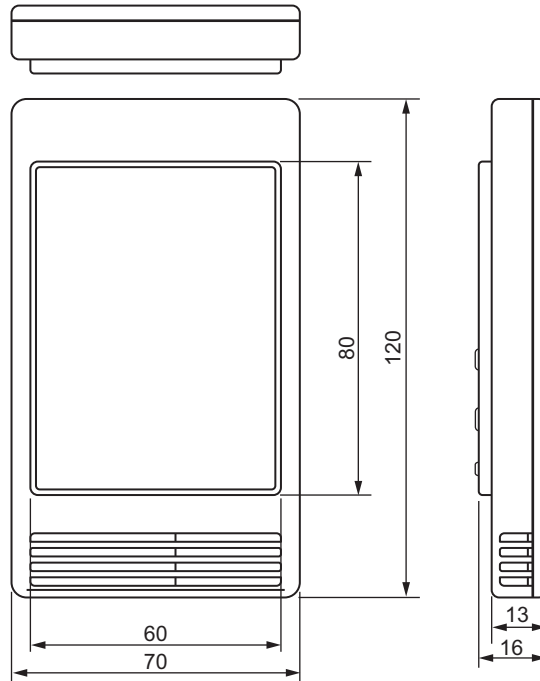
TCB-CC163TLE2





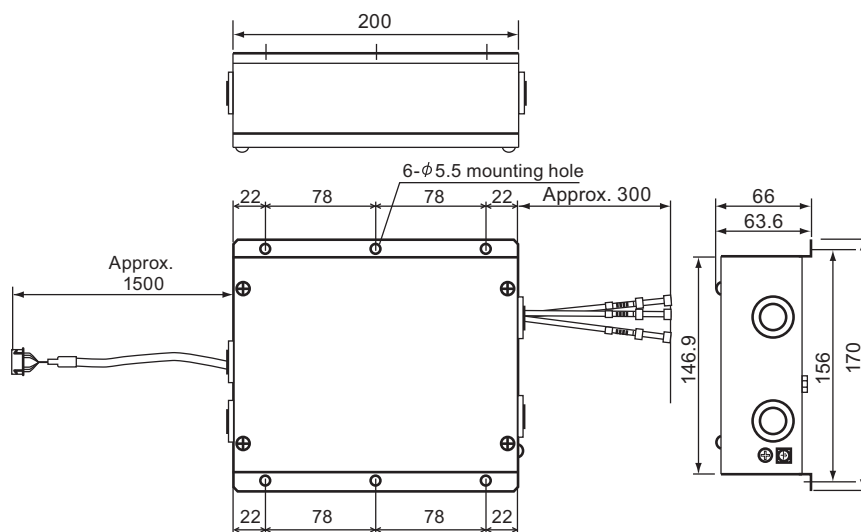
Remote sensor

TCB-TC21LE2



Remote location ON/OFF control box

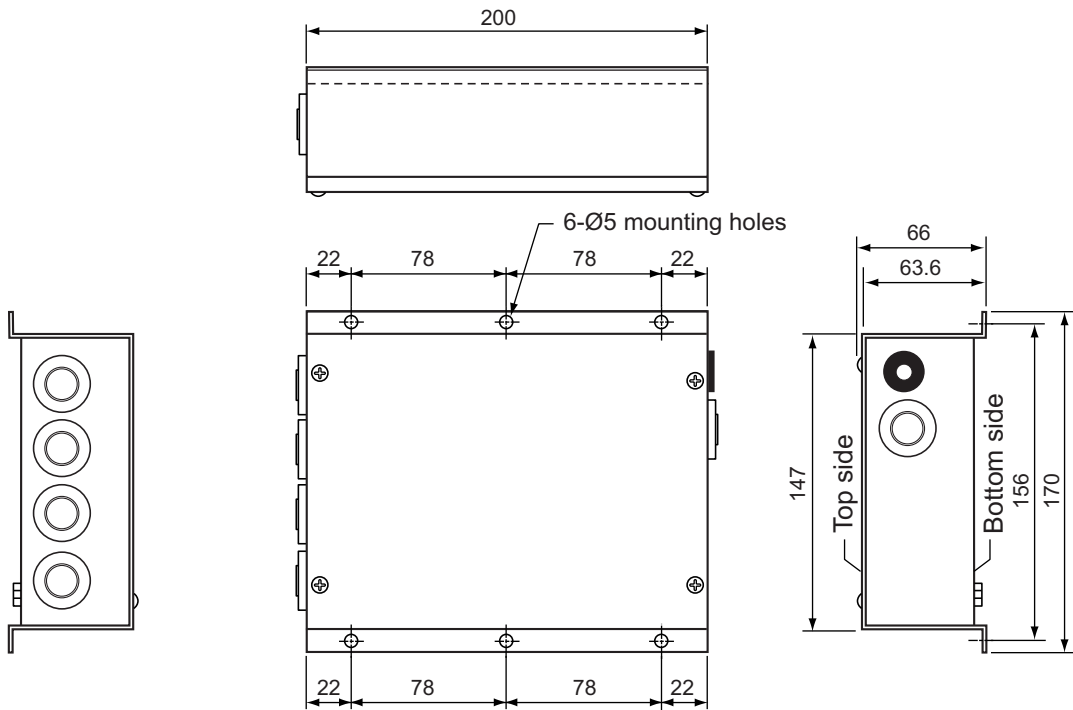
TCB-IFCB-4E2





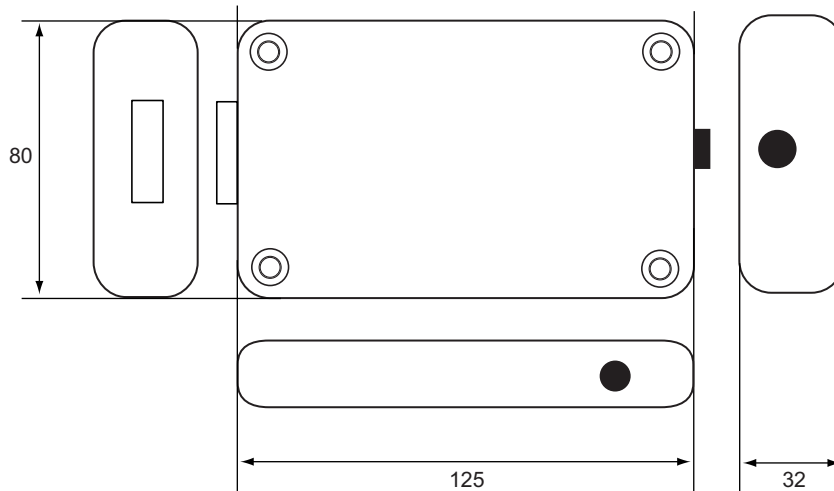
General Purpose Interface/Analog Interface

TCB-IFCG1TLE/TCB-IFCB640TLE



GSM Mobile Phone control interface

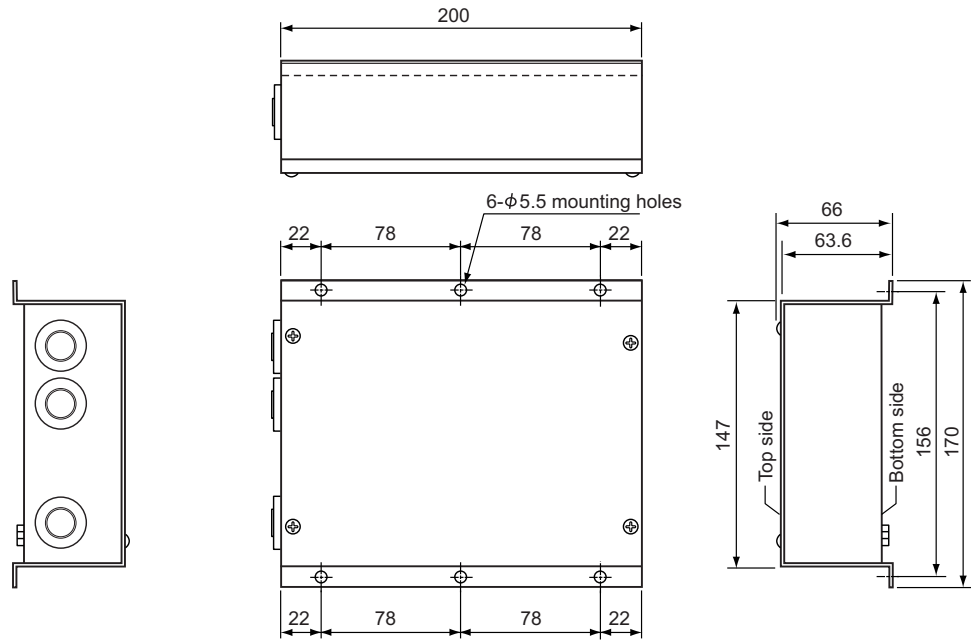
TCB-IFGSM1E





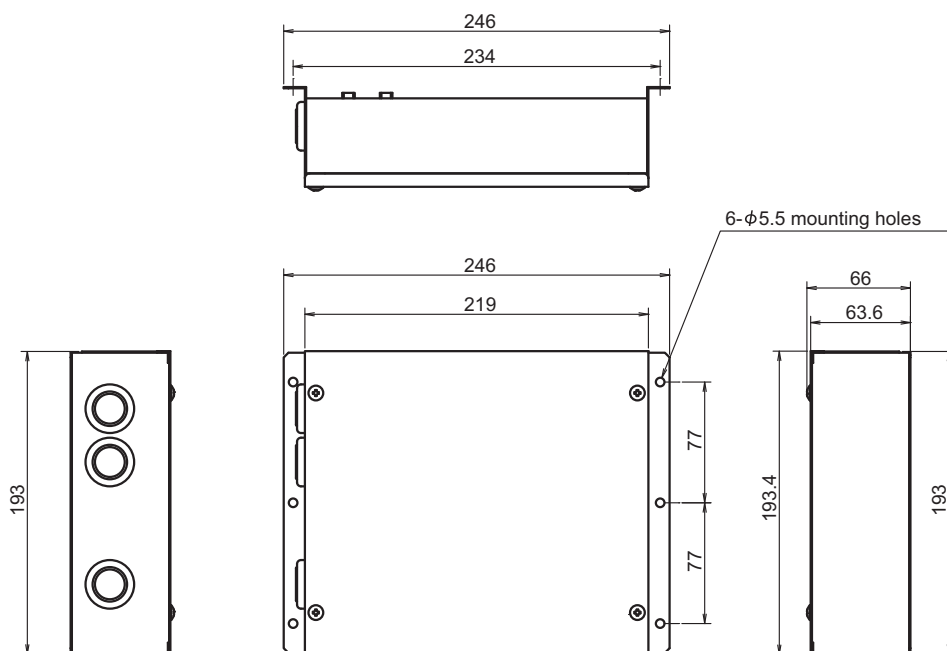
Modbus Interface

TCB-IFMB640TLE



LON Gateway

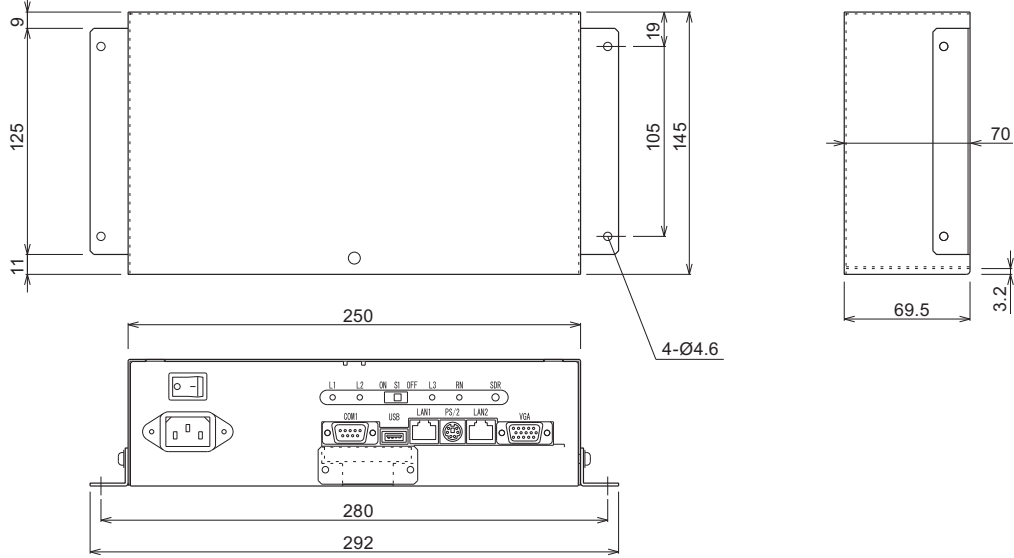
TCB-IFLN642TLE





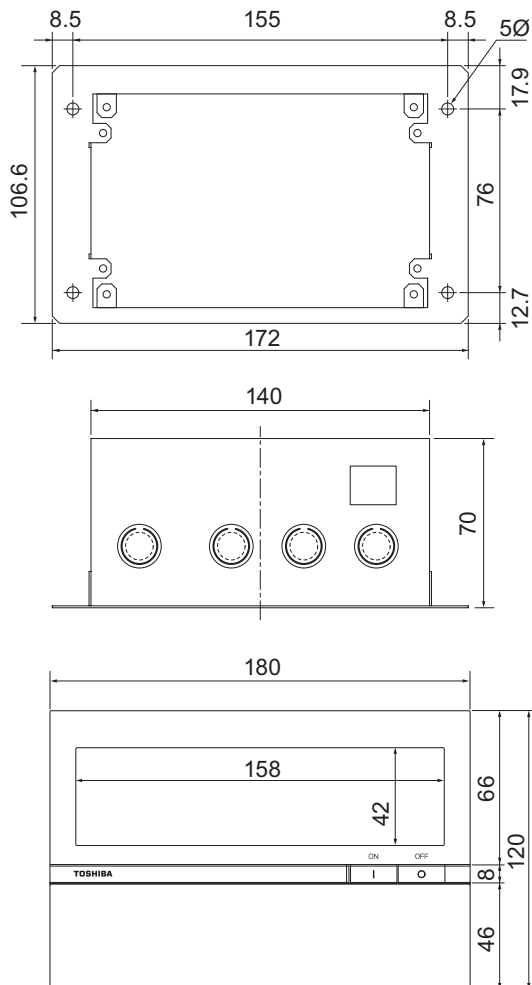
BACnet server

BMS-LSV6E

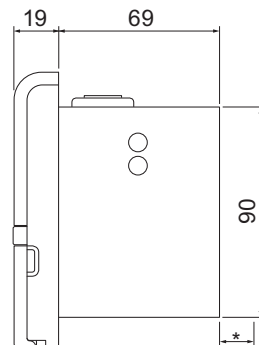
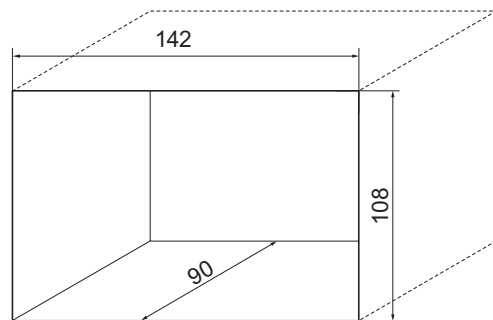


Compliant manager

BMS-CM1280TLE



Dimensions of unit fixing holes in the wall, etc.



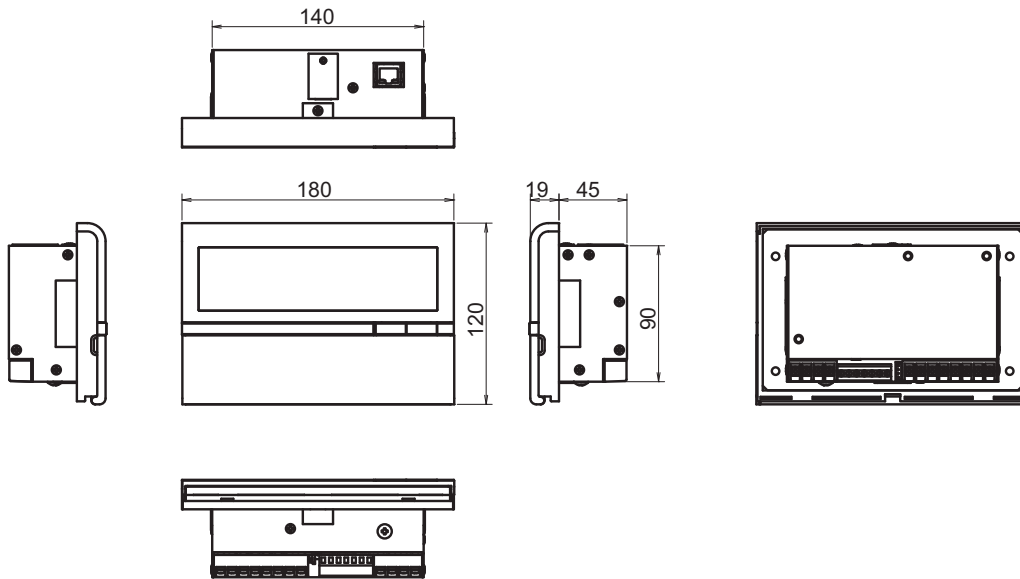
* Reserve space of 10mm or more when installing the unit.



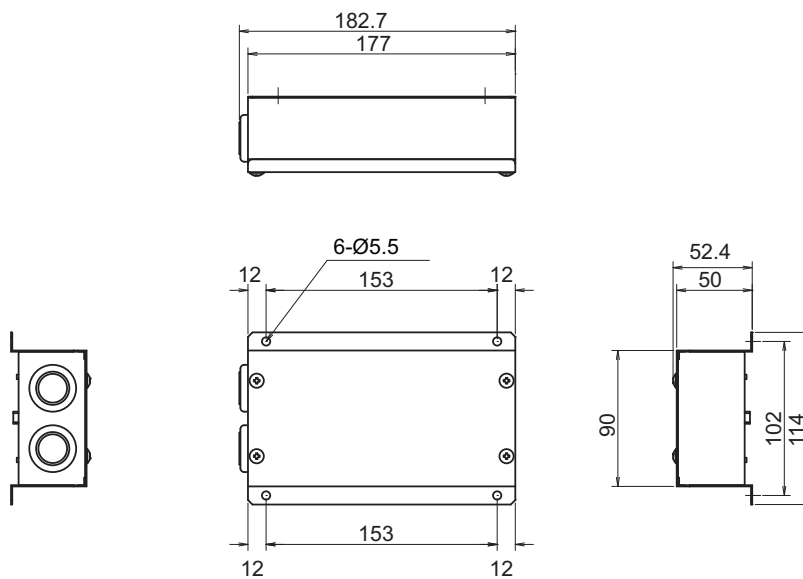
Smart Manager / Smart Manager with Data Analyzer

BMS-SM1280HTLE / BMS-SM1280ETLE

Central control



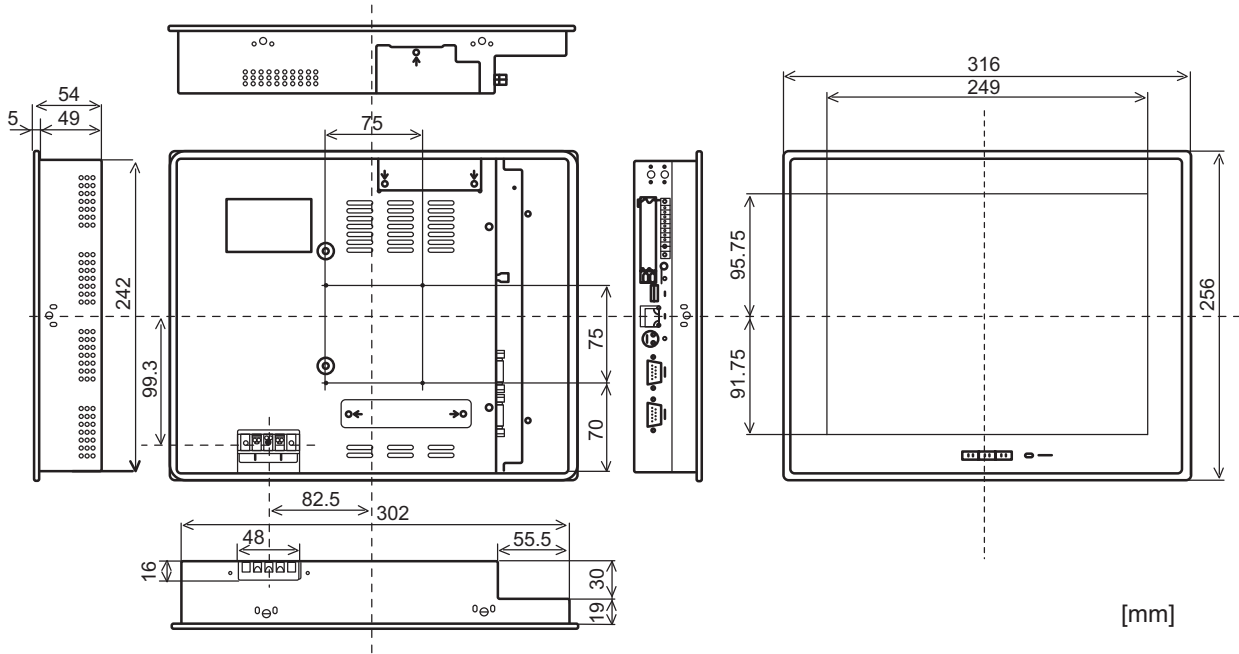
Power Unit





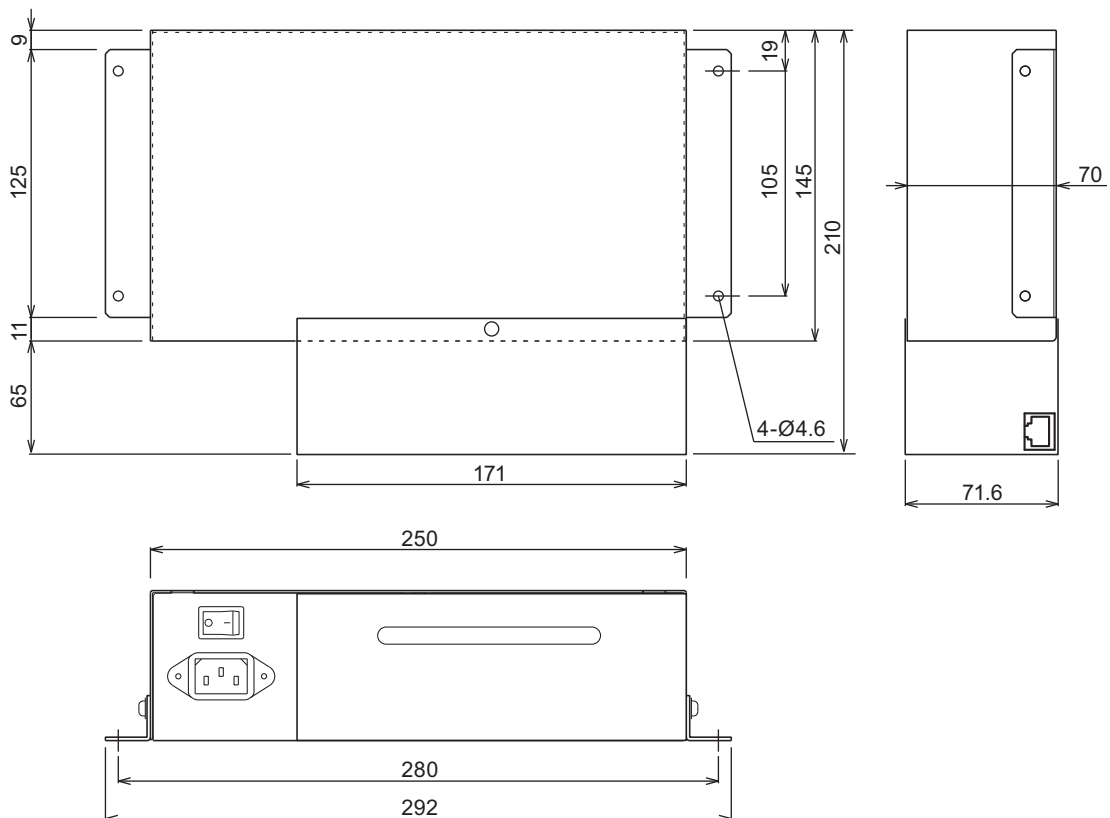
Touch Screen Controller

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



Web Based Controller

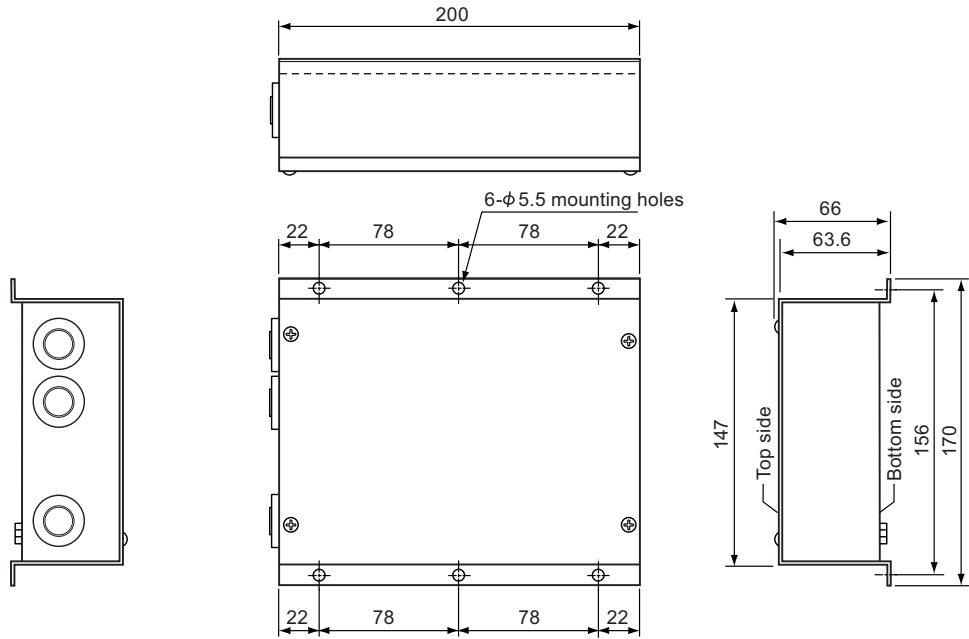
BMS-WB2561PWE/BMS-WB01GTE





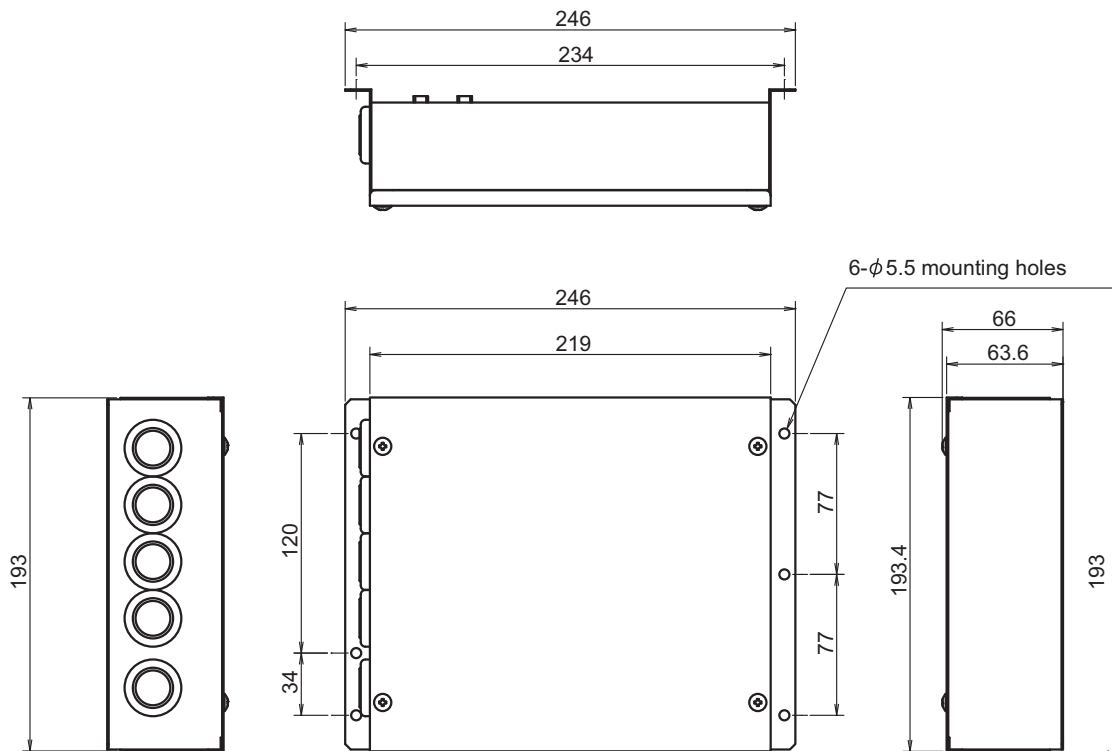
TCS-Net Relay Interface

BMS-IFLSV4E



Digital I/O Relay Interface/Energy Monitoring Relay Interface

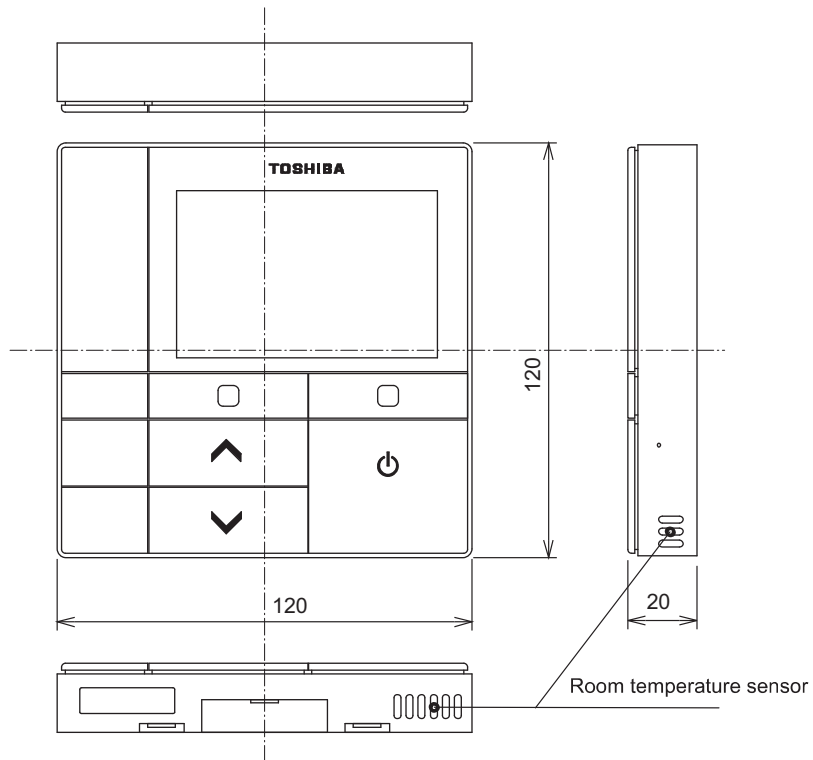
BMS-IFDD03E
BMS-IFWH5E





Wired remote controller with schedule timer

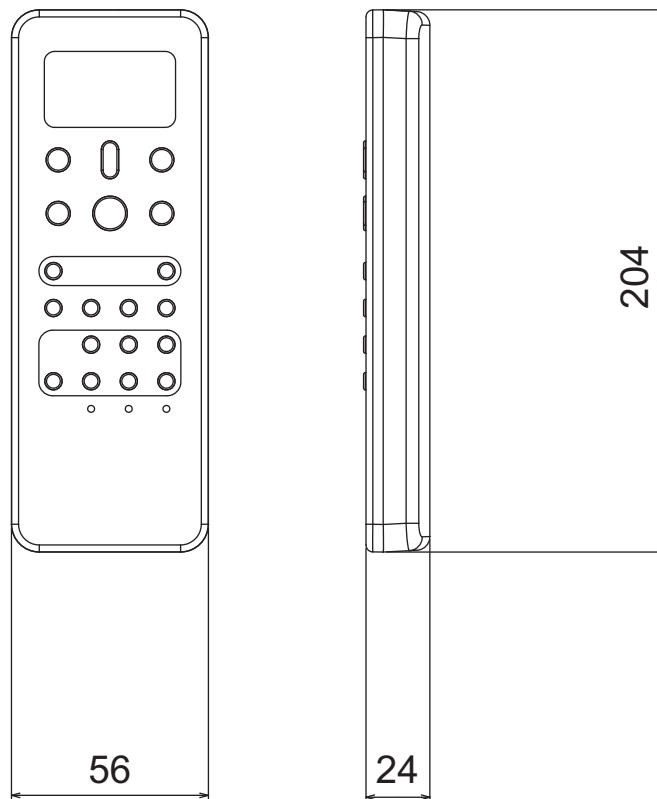
RBC-AMS51E-EN/ES





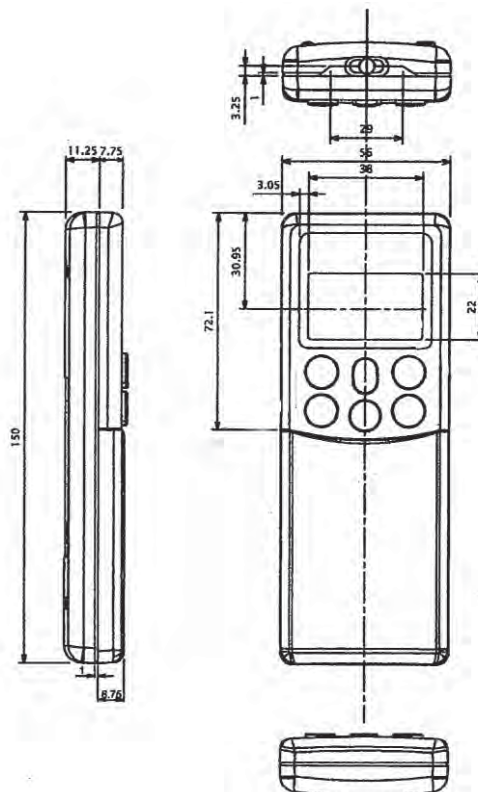
Wireless remote controller (High-wall 3 series)

WH-L11SE



Wireless remote controller (High-wall 4seriesFlexi packed)

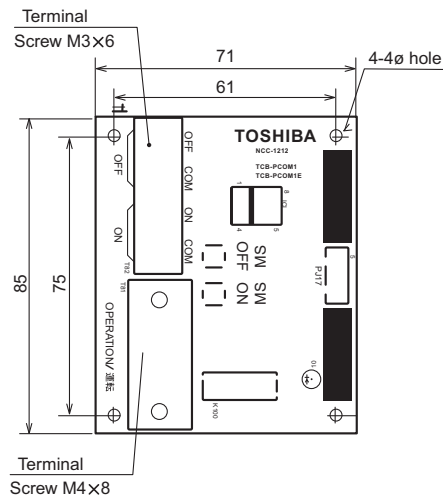
WH-H2UE



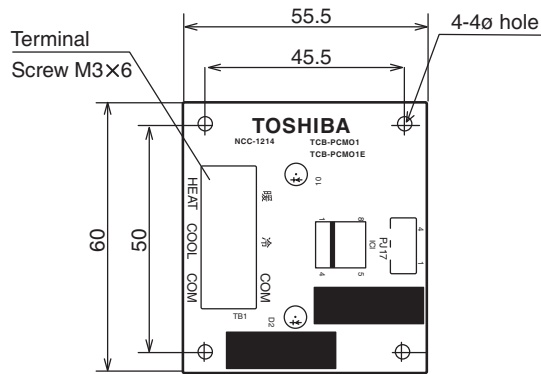


Dimensions of P.C. board

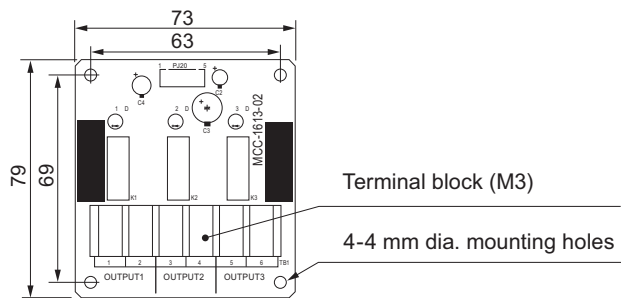
TCB-PCDM4E



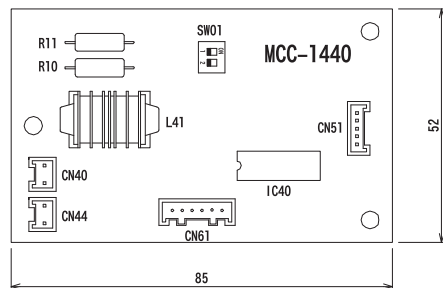
TCB-PCMO4E



TCB-PCIN4E



TCB-PCNT30TLE2





11-1. Outdoor unit

11-1-1. Specifications

Single unit

Equivalent HP				8HP	10HP	12HP	14HP
Model name	Heat Recovery	MMY-	MAP0804FT8-E	MAP1004FT8-E	MAP1204FT8-E	MAP1404FT8-E	MAP1404FT8-E
Outdoor unit type				Inverter unit			
Cooling capacity		(*) (kW)	22.4	28.0	33.5	40.0	
Heating capacity		(*) (kW)	25.0	31.5	37.5	45.0	
Power supply		(*)	3phase 4wires 50Hz 380-415V				
Electrical characteristics	Cooling	Running current	A	8.3	11.4	13.4	17.8
		Power consumption	kW	5.17	7.28	8.38	11.30
		Power factor	%	90	92	90	92
		EER (Energy Efficiency Ratio)		4.33	3.85	4.00	3.54
	Heating	Running current	A	9.1	12.0	14.5	19.9
		Power consumption	kW	5.68	7.50	9.05	12.70
		Power factor	%	90	90	90	92
		COP (Coefficient of Performance)		4.40	4.20	4.14	3.54
Starting Current		A	Soft Start				
Dimension	Unit	Height	mm	1,830	1,830	1,830	1,830
		Width	mm	990	990	1,210	1,210
		Depth	mm	780	780	780	780
	Packing	Height	mm	1,887	1,887	1,887	1,887
		Width	mm	1,062	1,062	1,282	1,282
		Depth	mm	828	828	828	828
Total Weight	Unit	kg	259	259	334	334	
	Packing	kg	274	274	351	351	
Appearance (Color)				Silky shade (Munsell 1Y8.5/0.5)			
Compressor	Type		Hermetic twin rotary compressor				
	Motor output		kW	2.3 x 2	3.1 x 2	2.6 x 3	3.1 x 3
Fan unit	Fan		Propeller fan				
	Motor output		kW	1.0			
	Air volume		m ³ /h	8,700	9,400	12,000	13,000
Heat exchanger				Finned tube			
Refrigerant				R410A			
Charged refrigerant amount		(*) ³ kg	11.0				
High-pressure switch		Pa	OFF: 2.9 ON: 3.73				
Protective devices				Discharge temp. sensor / Suction temp. sensor / High-pressure sensor Low-pressure sensor / High-pressure switch / PC board fuse			
Power supply wiring	Unit	MCA (* ⁴)	A	24.5	27.1	31.2	36.4
		MOCP (* ⁵)	A	32		40	50
Refrigerant piping	Connecting port diameter	Suction gas side	mm	ø 22.2		ø 28.6	
		Discharge gas side	mm	ø 19.1			ø 22.2
		Liquid side	mm	ø 12.7			ø 15.9
		Balance side	mm	ø 9.5			
	Connecting method	Suction gas side	Brazing				
		Discharge gas side	Flare				
		Liquid side	Flare				
		Balance side	Flare				
	Max. equivation length		m	185			
	Max. real length		m	165			
Max. total pipe length (Real length) (* ⁶)		m	300				
Max. height difference		m	Outdoor unit is higher than indoor unit : 50				
		m	Outdoor unit is lower than indoor unit: 30				
Control wiring between indoor and outdoor units + Central controller wiring		(Up to 1000m)		Shield wire 1.25mm 2 x 2 cores			
		(Up to 2000m)		Shield wire 2.0mm 2 x 2 cores			
Operation temperature range	Cooling	CDB	-10 to 43				
	Heating	CWB	-20 to 15.5				
Max. external static pressure		Pa	50	40	40	40	
Max. No. of connected indoor units			13	16	20	23	
Sound pressure level	Cooling	dB(A)	55.0	57.0	60.0	62.0	
	Heating	dB(A)	57.0	59.0	62.0	64.0	
Sound power level	Cooling	dB(A)	77	78	81	82	
	Heating	dB(A)	79	80	83	84	

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, nancing 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: Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*5: MOCP : Maximum Overcurrent Protection(Amps)
*6: The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.



Combination

Equivalent HP		16HP		18HP		20HP		22HP				
Set model name	Heat Recovery	MMY-	AP1614FT8-E	AP1814FT8-E	AP2014FT8-E	AP2214FT8-E						
Outdoor unit model name	MMY-MAP	0804FT8-E	0804FT8-E	1004FT8-E	0804FT8-E	1004FT8-E	1004FT8-E	1204FT8-E	1004FT8-E			
Outdoor unit type		Inverter unit										
Cooling capacity		(*) (kW)	45.0	50.4	56.0	61.5						
Heating capacity		(*) (kW)	50.0	56.5	63.0	69.0						
Power supply		(*)	3phase 4wires 50Hz 380-415V									
Electrical characteristics	Cooling	Running current	A	16.7	19.7	22.8	24.8					
		Power consumption	kW	10.42	12.45	14.56	15.66					
		Power factor	%	90	91	92	91					
		EER (Energy Efficiency Ratio)		4.32	4.05	3.85	3.93					
	Heating	Running current	A	18.2	21.1	24.0	26.5					
		Power consumption	kW	11.36	13.18	15.00	16.55					
		Power factor	%	90	90	90	90					
		COP (Coefficient of Performance)		4.40	4.29	4.20	4.17					
	Starting Current		A	Soft Start								
	Dimension	Unit	Height	mm	1,830	1,830	1,830	1,830	1,830	1,830	1,830	
Width			mm	990	990	990	990	990	1,210	990		
Depth			mm	780	780	780	780	780	780	780		
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	1,282	1,062	
		Depth	mm	828	828	828	828	828	828	828	828	
Total Weight	Unit	kg	259	259	259	259	259	259	334	259		
	Packing	kg	274	274	274	274	274	274	351	274		
Appearance (Color)		Silky shade (Munsell 1Y8.5/0.5)										
Compressor	Type	Hermetic twin rotary compressor										
	Motor output	kW	2.3 x 2	2.3 x 2	3.1 x 2	2.3 x 2	3.1 x 2	3.1 x 2	2.6 x 3	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	m ³ /h	8,700	8,700	9,400	8,700	9,400	9,400	12,000	9,400		
Heat exchanger		Finned tube										
Refrigerant		R410A										
Charged refrigerant amount		(*) ³ kg	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		
High-pressure switch		Pa	OFF: 2.9 ON: 3.73									
Protective devices		Discharge temp. sensor / Suction temp. sensor / High-pressure sensor Low-pressure sensor / High-pressure switch / PC board fuse										
Power supply wiring	Unit	MCA (* ⁴)	A	49.0	51.6	54.2	58.3					
		MOCP (* ⁵)	A	63	63	63	80					
Refrigerant piping	Connecting port diameter	Suction gas side	mm	ø 28.6					ø 34.9			
		Discharge gas side	mm	ø 22.2					ø 28.6			
		Liquid side	mm	ø 19.1								
		Balance side	mm	ø 9.5								
	Connecting method	Suction gas side	Brazing									
		Discharge gas side	Flare									
		Liquid side	Flare									
		Balance side	Flare									
	Max. equivalent length		m	195								
	Max. real length		m	175								
Max. total pipe length (Real length) (* ⁶)		m	300									
Max. height difference		m	Outdoor unit is higher than indoor unit : 50									
		m	Outdoor unit is lower than indoor unit: 30									
Control wiring between indoor and outdoor units +		(Up to 1000m)	Shield wire 1.25mm 2 x 2 cores									
Central controller wiring		(Up to 2000m)	Shield wire 2.0mm 2 x 2 cores									
Operation temperature range		Cooling	CDB	-10 to 43								
		Heating	CWB	-20 to 15.5								
Max. external static pressure		Pa	50	50	40	50	40	40	40	40		
Max. No. of connected indoor units			27	30	33	37						
Sound pressure level	Cooling	dB(A)	58.0	59.5	60.0	62.0						
	Heating	dB(A)	60.0	61.5	62.0	64.0						

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: Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
- *5: MOCP : Maximum Overcurrent Protection(Amps)
- *6: The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.



Equivalent HP				24HP		26HP		28HP		
Set model name	Heat Recovery			AP2414FT8-E		AP2614FT8-E		AP2814FT8-E		
Outdoor unit model name	MMY-MAP			1404FT8-E	1004FT8-E	1404FT8-E	1204FT8-E	1404FT8-E	1404FT8-E	
Outdoor unit type				Inverter unit						
Cooling capacity				(*) (kW)	68.0	73.0		78.5		
Heating capacity				(*) (kW)	76.5	81.5		88.0		
Power supply				(*)	3phase 4wires 50Hz 380-415V					
Electrical characteristics	Cooling	Running current	A	29.1		30.9		34.5		
		Power consumption	kW	18.58		19.48		21.98		
		Power factor	%	92		91		92		
		EER (Energy Efficiency Ratio)		3.66		3.75		3.57		
	Heating	Running current	A	31.9		33.8		38.6		
		Power consumption	kW	20.20		21.35		24.60		
		Power factor	%	91		91		92		
		COP (Coefficient of Performance)		3.79		3.82		3.58		
Starting Current			A	Soft Start						
Dimension	Unit	Height	mm	1,830	1,830	1,830	1,830	1,830	1,830	
		Width	mm	1,210	990	1,210	1,210	1,210	1,210	
		Depth	mm	780	780	780	780	780	780	
	Packing	Height	mm	1,887	1,887	1,887	1,887	1,887	1,887	
		Width	mm	1,282	1,062	1,282	1,282	1,282	1,282	
		Depth	mm	828	828	828	828	828	828	
Total Weight	Unit	kg	334	259	334	334	334	334		
	Packing	kg	351	274	351	351	351	351		
Appearance (Color)				Silky shade (Munsell 1Y8.5/0.5)						
Compressor	Type			Hermetic twin rotary compressor						
	Motor output			kW	3.1 x 3	3.1 x 2	3.1 x 3	2.6 x 3	3.1 x 3	3.1 x 3
Fan unit	Fan			Propeller fan						
	Motor output			kW	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume			m ³ /h	13,000	9,400	13,000	12,000	13,000	13,000
Heat exchanger				Finned tube						
Refrigerant				R410A						
Charged refrigerant amount			(*) kg	11.0	11.0	11.0	11.0	11.0	11.0	
High-pressure switch				Pa	OFF: 2.9 ON: 3.73					
Protective devices				Discharge temp. sensor / Suction temp. sensor / High-pressure sensor Low-pressure sensor / High-pressure switch / PC board fuse						
Power supply wiring	Unit	MCA	(*) A	63.5		67.6		72.8		
		MOCP	(*) A	80		80		100		
Refrigerant piping	Connecting port diameter	Suction gas side	mm	ø 34.9						
		Discharge gas side	mm	ø 28.6						
		Liquid side	mm	ø 19.1			ø 22.2			
		Balance side	mm	ø 9.5						
	Connecting method	Suction gas side	Brazing							
		Discharge gas side	Flare							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivation length			m	195					
	Max. real length			m	175					
Max. total pipe length(Real length)			(*) m	300						
Max. height difference			m	Outdoor unit is higher than indoor unit : 50						
			m	Outdoor unit is lower than indoor unit: 30						
Control wiring between indoor and outdoor units + Central controller wiring				(Up to 1000m)	Shield wire 1.25mm 2 x 2 cores					
				(Up to 2000m)	Shield wire 2.0mm 2 x 2 cores					
Operation temperature range				Cooling	CDB	-10 to 43				
				Heating	CWB	-20 to 15.5				
Max. external static pressure				Pa	40	40	40	40	40	
Max. No. of connected indoor units					40	43		47		
Sound pressure level				Cooling	dB(A)	63.5		64.5		65.0
				Heating	dB(A)	65.5		66.5		67.0

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, nbranching 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: Select wire size base on the larger value of MCA.
MCA : Minimum Circuit Amps
*5: MOCP : Maximum Overcurrent Protection(Amps)
*6: The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.



Equivalent HP				30HP			32HP			34HP			
Set model name	Heat Recovery			AP3014FT8-E			AP3214FT8-E			AP3414FT8-E			
Outdoor unit model name	MMY-MAP			1004FT8-E	1004FT8-E	1004FT8-E	1204FT8-E	1004FT8-E	1004FT8-E	1404FT8-E	1004FT8-E	1004FT8-E	
Outdoor unit type				Inverter unit									
Cooling capacity				85.0			90.0			96.0			
Heating capacity				95.0			100.0			108.0			
Power supply				3phase 4wires 50Hz 380-415V									
Electrical characteristics	Cooling	Running current	A	34.9			36.6			40.6			
		Power consumption	kW	22.26			23.15			25.86			
		Power factor	%	92			91			92			
		EER (Energy Efficiency Ratio)		3.82			3.89			3.71			
	Heating	Running current	A	36.4			38.2			44.0			
		Power consumption	kW	22.70			23.85			27.70			
		Power factor	%	90			90			91			
		COP (Coefficient of Performance)		4.19			4.19			3.90			
	Starting Current		A	Soft Start									
	Dimension	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	
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	
Total Weight	Unit	kg	259	259	259	334	259	259	334	259	259		
	Packing	kg	274	274	274	351	274	274	351	274	274		
Appearance (Color)				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	2.6 x 3	3.1 x 2	3.1 x 2	3.1 x 3	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	1.0
	Air volume			m ³ /h	9,400	9,400	9,400	12,000	9,400	9,400	13,000	9,400	9,400
Heat exchanger				Finned tube									
Refrigerant				R410A									
Charged refrigerant amount			(^{*3}) kg	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
High-pressure switch				Pa	OFF: 2.9 ON: 3.73								
Protective devices				Discharge temp. sensor / Suction temp. sensor / High-pressure sensor Low-pressure sensor / High-pressure switch / PC board fuse									
Power supply wiring	Unit	MCA (^{*4})	A	81.3			85.4			90.6			
		MOCP (^{*5})	A	100			100			125			
Refrigerant piping	Connecting port diameter	Suction gas side	mm	ø 34.9									
		Discharge gas side	mm	ø 28.6									
		Liquid side	mm	ø 22.2									
		Balance side	mm	ø 9.5									
	Connecting method	Suction gas side	Brazing										
		Discharge gas side	Flare										
		Liquid side	Flare										
		Balance side	Flare										
	Max. equivation length		m	200									
	Max. real length		m	180									
Max. total pipe length(Real length)		(^{*6}) m	300						500				
Max. height difference		m	Outdoor unit is higher than indoor unit : 50										
		m	Outdoor unit is lower than indoor unit: 30										
Control wiring between indoor and outdoor units + Central controller wiring				(Up to 1000m)			Shield wire 1.25mm 2 x 2 cores						
				(Up to 2000m)			Shield wire 2.0mm 2 x 2 cores						
Operation temperature range				Cooling	CDB			-10 to 43					
				Heating	CWB			-20 to 15.5					
Max. external static pressure				Pa	40	40	40	40	40	40	40	40	
Max. No. of connected indoor units				48			48			48			
Sound pressure level				Cooling	dB(A)			62.0			64.5		
				Heating	dB(A)			64.0			65.0		

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, n-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: Select wire size base on the larger value of MCA.

MCA : Minimum Circuit Amps

*5: MOCP : Maximum Overcurrent Protection(Amps)

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



Equivalent HP				36HP			38HP			
Set model name	Heat Recovery		MMY-	AP3614FT8-E			AP3814FT8-E			
Outdoor unit model name	MMY-MAP			1204FT8-E	1204FT8-E	1204FT8-E	1404FT8-E	1204FT8-E	1204FT8-E	
Outdoor unit type				Inverter unit						
Cooling capacity				101.0			106.5			
Heating capacity				113.0			119.5			
Power supply				3phase 4wires 50Hz 380-415V						
Electrical characteristics	Cooling	Running current	A	40.6			44.2			
		Power consumption	kW	25.35			27.85			
		Power factor	%	90			91			
		EER (Energy Efficiency Ratio)		3.98			3.82			
	Heating	Running current	A	43.8			48.6			
		Power consumption	kW	27.35			30.60			
		Power factor	%	90			91			
		COP (Coefficient of Performance)		4.13			3.91			
	Starting Current			A	Soft Start					
	Dimension	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	
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	
Total Weight	Unit	kg	334	334	334	334	334	334		
	Packing	kg	351	351	351	351	351	351		
Appearance (Color)				Silky shade (Munsell 1Y8.5/0.5)						
Compressor	Type			Hermetic twin rotary compressor						
	Motor output			kW	2.6 x 3	2.6 x 3	2.6 x 3	3.1 x 3	2.6 x 3	2.6 x 3
Fan unit	Fan			Propeller fan						
	Motor output			kW	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume			m ³ /h	12,000	12,000	12,000	13,000	12,000	12,000
Heat exchanger				Finned tube						
Refrigerant				R410A						
Charged refrigerant amount			(^{*3}) kg	11.0	11.0	11.0	11.0	11.0	11.0	
High-pressure switch				Pa	OFF: 2.9 ON: 3.73					
Protective devices				Discharge temp. sensor / Suction temp. sensor / High-pressure sensor Low-pressure sensor / High-pressure switch / PC board fuse						
Power supply wiring	Unit	MCA (^{*4})	A	93.6			98.8			
		MOCP (^{*5})	A	125			125			
Refrigerant piping	Connecting port diameter	Suction gas side	mm	ø 41.3						
		Discharge gas side	mm	ø 34.9						
		Liquid side	mm	ø 22.2						
		Balance side	mm	ø 9.5						
	Connecting method	Suction gas side	Brazing							
		Discharge gas side	Flare							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivation length			m	200					
	Max. real length			m	180					
Max. total pipe length(Real length) (^{*6})			m	500						
Max. height difference			m	Outdoor unit is higher than indoor unit : 50						
			m	Outdoor unit is lower than indoor unit: 30						
Control wiring between indoor and outdoor units + Central controller wiring				(Up to 1000m)	Shield wire 1.25mm 2 x 2 cores					
				(Up to 2000m)	Shield wire 2.0mm 2 x 2 cores					
Operation temperature range	Cooling	CDB	-10 to 43							
	Heating	CWB	-20 to 15.5							
Max. external static pressure				Pa	40	40	40	40	40	
Max. No. of connected indoor units					48			48		
Sound pressure level	Cooling	dB(A)	65.0			65.5				
	Heating	dB(A)	67.0			67.5				

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, nancing 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: Select wire size base on the larger value of MCA.

MCA : Minimum Circuit Amps

*5: MOCP : Maximum Overcurrent Protection(Amps)

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



Equivalent HP				40HP			42HP			
Set model name	Heat Recovery		MMY-	AP4014FT8-E			AP4214FT8-E			
Outdoor unit model name	MMY-MAP		1404FT8-E	1404FT8-E	1204FT8-E	1404FT8-E	1404FT8-E	1404FT8-E		
Outdoor unit type				Inverter unit						
Cooling capacity				112.0			118.0			
Heating capacity				127.0			132.0			
Power supply				3phase 4wires 50Hz 380-415V						
Electrical characteristics	Cooling	Running current	A	48.2			51.9			
		Power consumption	kW	30.40			33.10			
		Power factor	%	91			92			
		EER (Energy Efficiency Ratio)		3.68			3.56			
	Heating	Running current	A	54.1			57.9			
		Power consumption	kW	34.25			36.90			
		Power factor	%	91			92			
		COP (Coefficient of Performance)		3.71			3.58			
Starting Current			A	Soft Start						
Dimension	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	
	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	
Total Weight	Unit	kg	334	334	334	334	334	334		
	Packing	kg	351	351	351	351	351	351		
Appearance (Color)				Silky shade (Munsell 1Y8.5/0.5)						
Compressor	Type			Hermetic twin rotary compressor						
	Motor output			kW	3.1 x 3	3.1 x 3	2.6 x 3	3.1 x 3	3.1 x 3	3.1 x 3
Fan unit	Fan			Propeller fan						
	Motor output			kW	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume			m ³ /h	13,000	13,000	12,000	13,000	13,000	13,000
Heat exchanger				Finned tube						
Refrigerant				R410A						
Charged refrigerant amount			(^{*3}) kg	11.0	11.0	11.0	11.0	11.0	11.0	
High-pressure switch				Pa	OFF: 2.9 ON: 3.73					
Protective devices				Discharge temp. sensor / Suction temp. sensor / High-pressure sensor Low-pressure sensor / High-pressure switch / PC board fuse						
Power supply wiring	Unit	MCA (^{*4})	A	104			109			
		MOCP (^{*5})	A	125			125			
Refrigerant piping	Connecting port diameter	Suction gas side	mm	ø 41.3						
		Discharge gas side	mm	ø 34.9						
		Liquid side	mm	ø 22.2						
		Balance side	mm	ø 9.5						
	Connecting method	Suction gas side	Brazing							
		Discharge gas side	Flare							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivation length			m	200					
	Max. real length			m	180					
Max. total pipe length(Real length)			(^{*6}) m	500						
Max. height difference			m	Outdoor unit is higher than indoor unit : 50						
			m	Outdoor unit is lower than indoor unit: 30						
Control wiring between indoor and outdoor units + Central controller wiring				(Up to 1000m)	Shield wire 1.25mm 2 x 2 cores					
				(Up to 2000m)	Shield wire 2.0mm 2 x 2 cores					
Operation temperature range	Cooling	CDB	-10 to 43							
	Heating	CWB	-20 to 15.5							
Max. external static pressure				Pa	40	40	40	40	40	
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				

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, nbranching 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: Select wire size base on the larger value of MCA.

MCA : Minimum Circuit Amps

*5: MOCP : Maximum Overcurrent Protection(Amps)

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

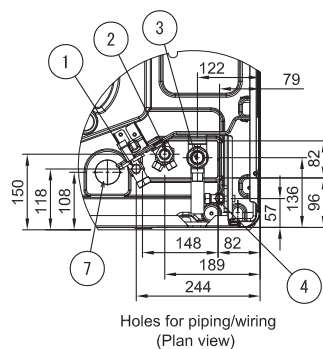
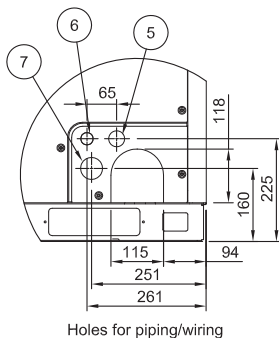
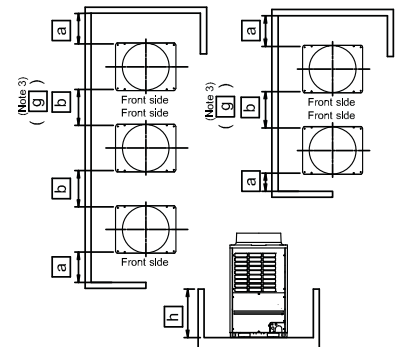
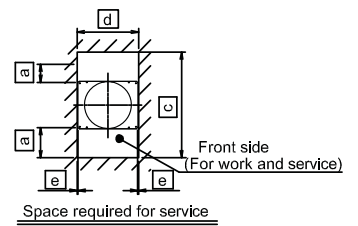
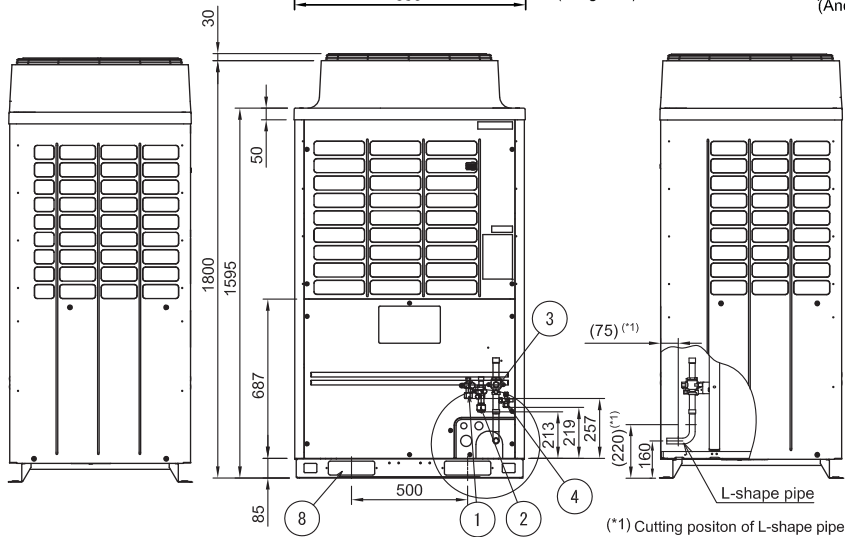
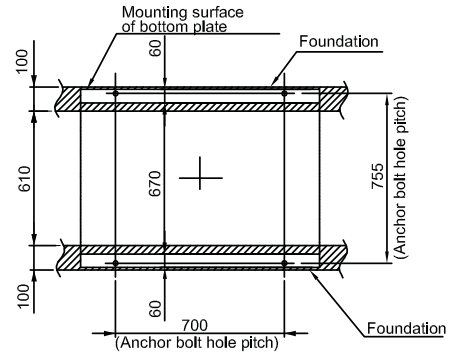
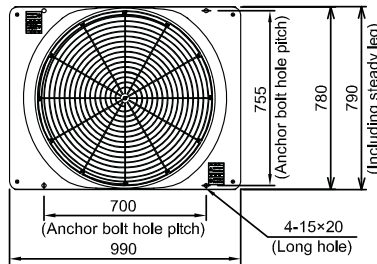


11-1-2. Dimensional drawing Single unit

Model : MMY-MAP0804FT8-E
MMY-MAP1004FT8-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.



a	≥ 500mm
b	≥ 600mm
c	≥ 1780mm
d	≥ 1010mm
e	≥ 10mm
g	≥ 1000mm
h	≤ 800mm

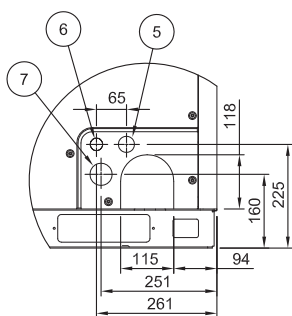
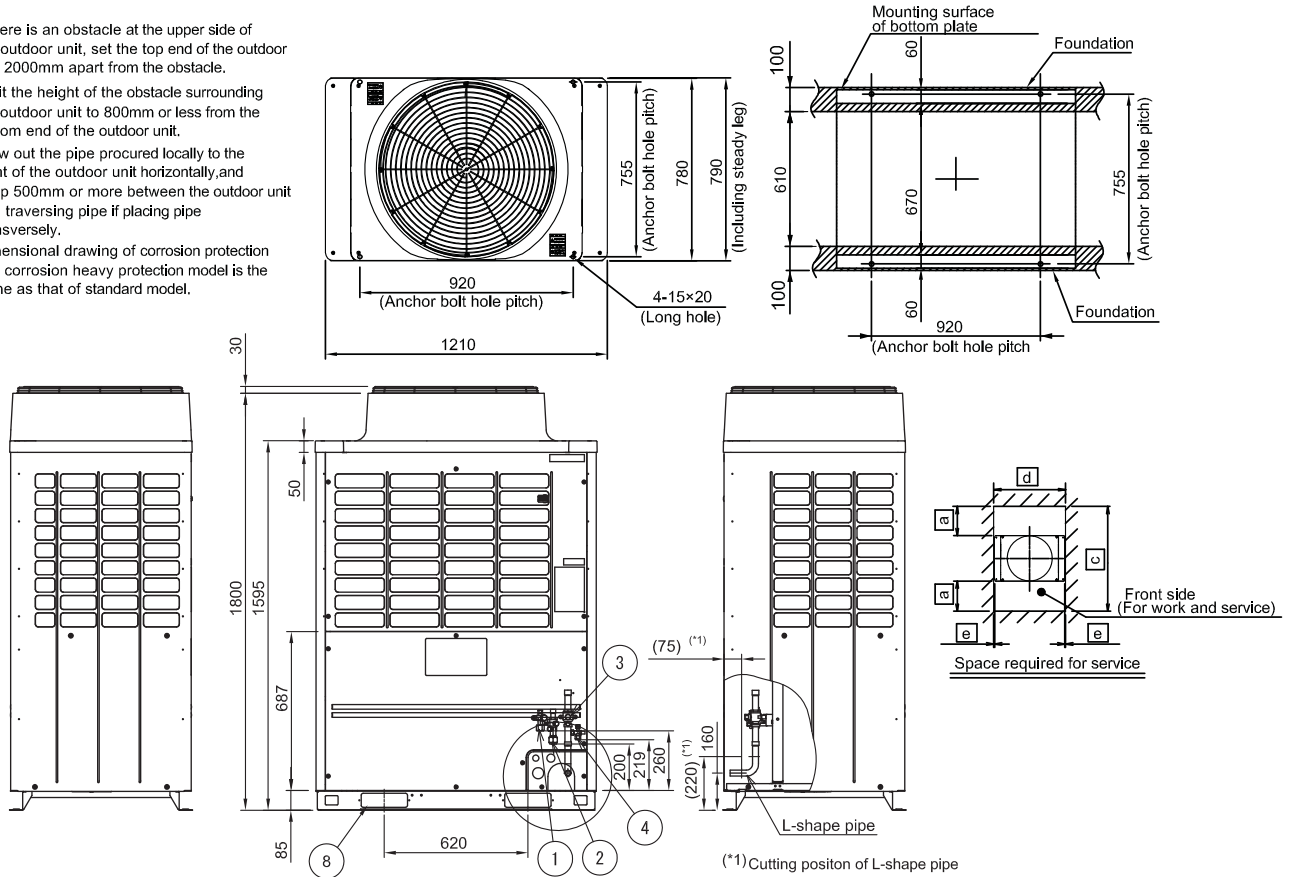
No	Parts name	Remarks
①	Liquid pipe connection port	φ12.7
②	Discharge gas pipe connection port	φ19.1
③	Suction gas pipe connection port	φ22.2
④	Balance pipe connection port	φ9.5
⑤	Knockout hole for power wiring 1	φ35
⑥	Knockout hole for control wiring	φ27
⑦	Knockout hole for power wiring 2	φ48
⑧	Square hole (for freight handling)	2-60X200



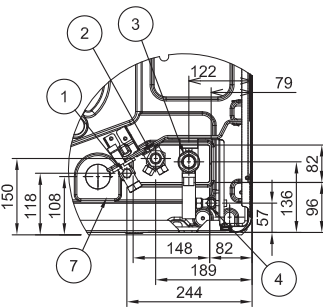
**Model : MMY-MAP1204FT8-E
MMY-MAP1404FT8-E**

(Note)

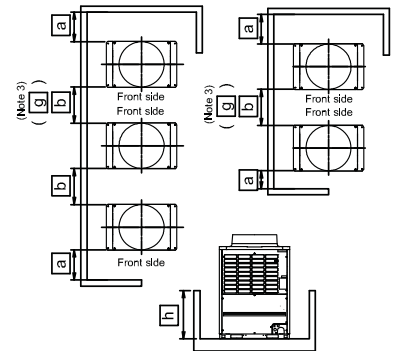
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the 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.



Holes for piping/wiring



Holes for piping/wiring (Plan view)



No	Parts name	Remarks
①	Liquid pipe connection port	φA
②	Discharge gas pipe connection port	φB
③	Suction gas pipe connection port	φ28.6
④	Balance pipe connection port	φ9.5
⑤	Knockout hole for power wiring 1	φ35
⑥	Knockout hole for control wiring	φ27
⑦	Knockout hole for power wiring 2	φ48
⑧	Square hole (for freight handling)	2-60X200

Model Name	φA	φB
MAP1204type	φ 12.7	φ 19.1
MAP1404type	φ 15.9	φ 22.2

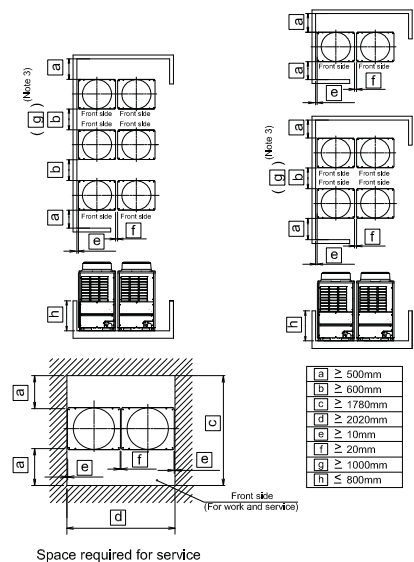
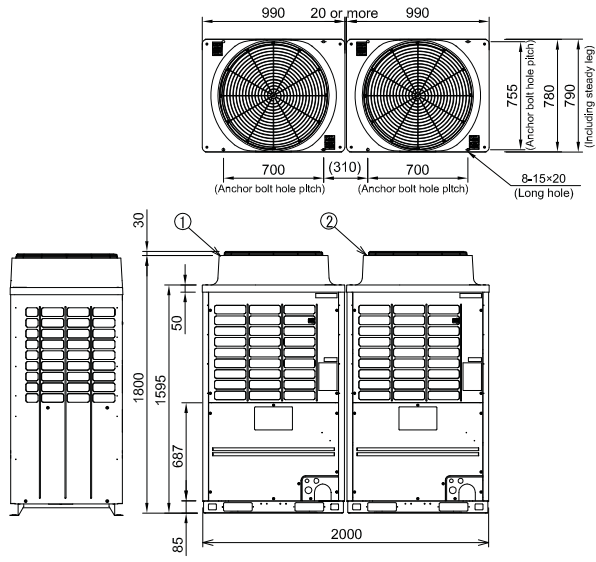
a	≥ 500mm
b	≥ 600mm
c	≥ 1780mm
d	≥ 1230mm
e	≥ 10mm
g	≥ 1000mm
h	≤ 800mm



Combination

Model	Outdoor unit	
	① Header unit	② Follower unit
MMY-AP1614FT8-E	MMY-MAP0804FT8-E	MMY-MAP0804FT8-E
MMY-AP1814FT8-E	MMY-MAP1004FT8-E	MMY-MAP0804FT8-E
MMY-AP2014FT8-E	MMY-MAP1004FT8-E	MMY-MAP1004FT8-E

Two units connected

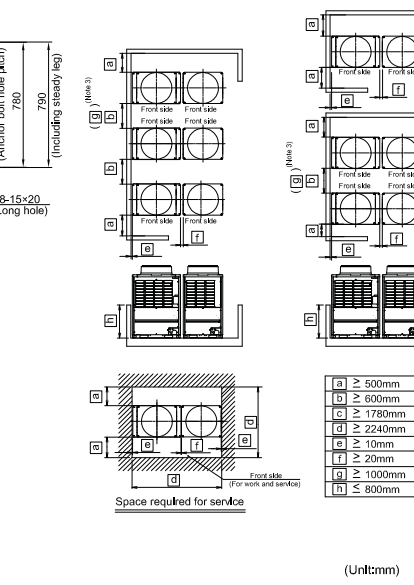
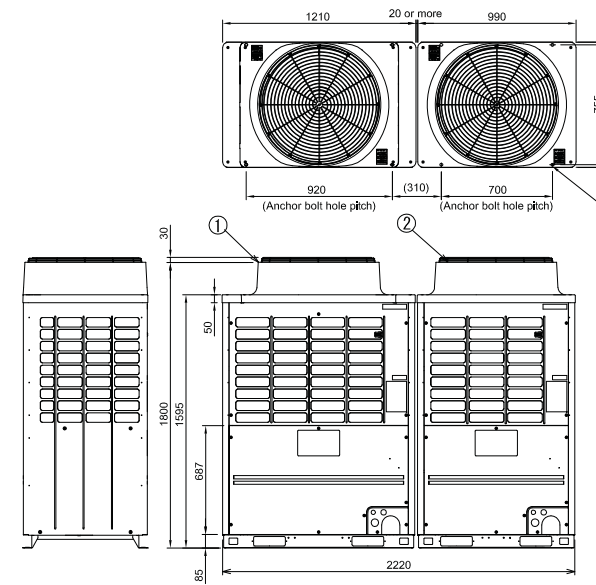


- (Note)
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
 2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
 3. Draw out the pipe procured locally 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.

(Unit:mm)

Model	Outdoor unit	
	① Header unit	② Follower unit
MMY-AP2214FT8-E	MMY-MAP1204FT8-E	MMY-MAP1004FT8-E
MMY-AP2414FT8-E	MMY-MAP1404FT8-E	MMY-MAP1004FT8-E

Two units connected



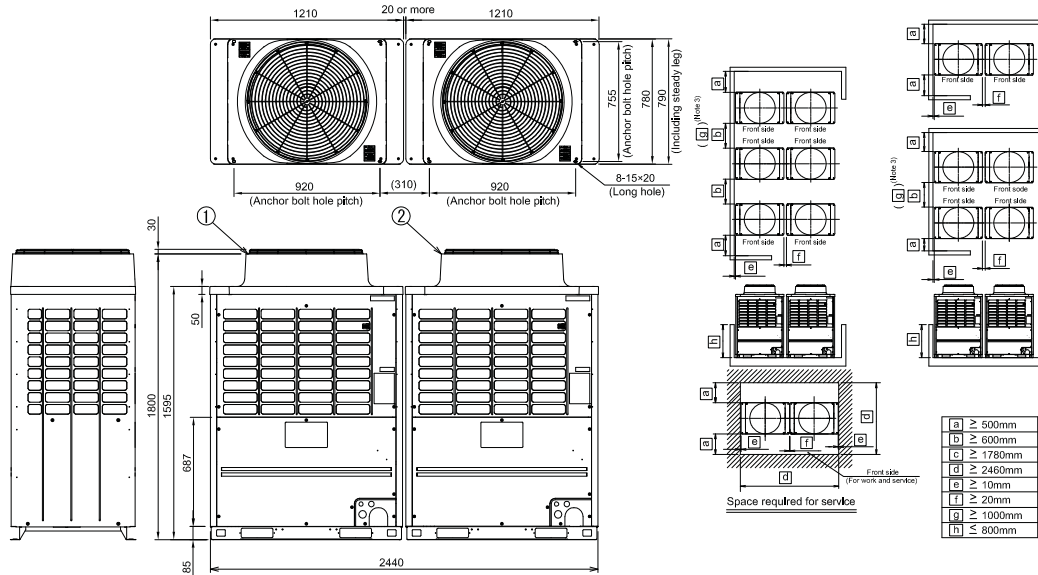
- (Note)
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
 2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
 3. Draw out the pipe procured locally 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.

(Unit:mm)



Model	Outdoor unit	
	① Header unit	② Follower unit
MMY-AP2614FT8-E	MMY-MAP1404FT8-E	MMY-MAP1204FT8-E
MMY-AP2814FT8-E	MMY-MAP1404FT8-E	MMY-MAP1404FT8-E

Two units connected



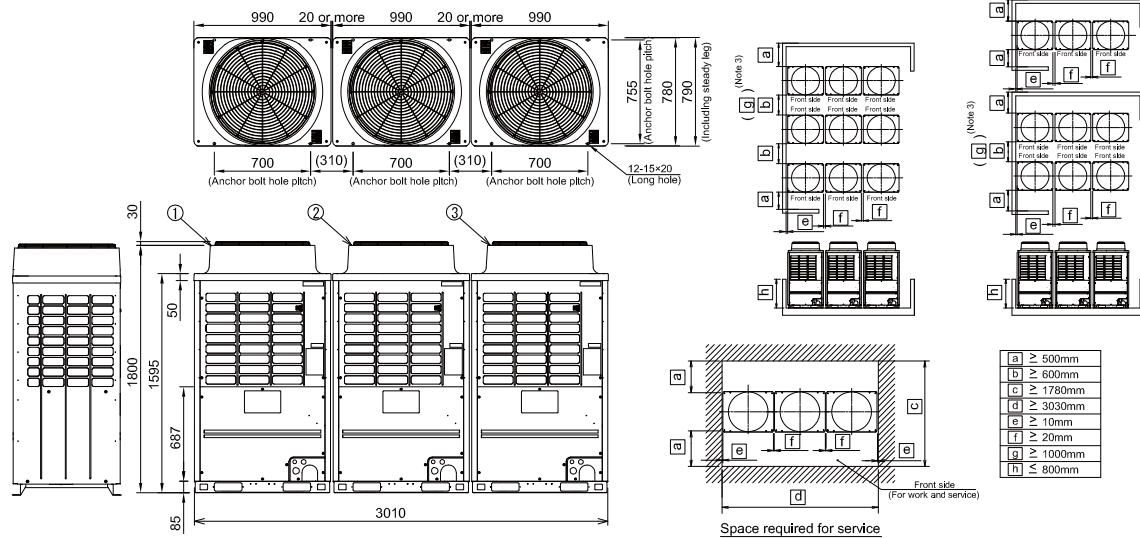
(Note)

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.

(Unit:mm)

Model	Outdoor unit		
	① Header unit	② Follower unit	③ Follower unit
MMY-AP3014FT8-E	MMY-MAP1004FT8-E	MMY-MAP1004FT8-E	MMY-MAP1004FT8-E

Three units connected



(Note)

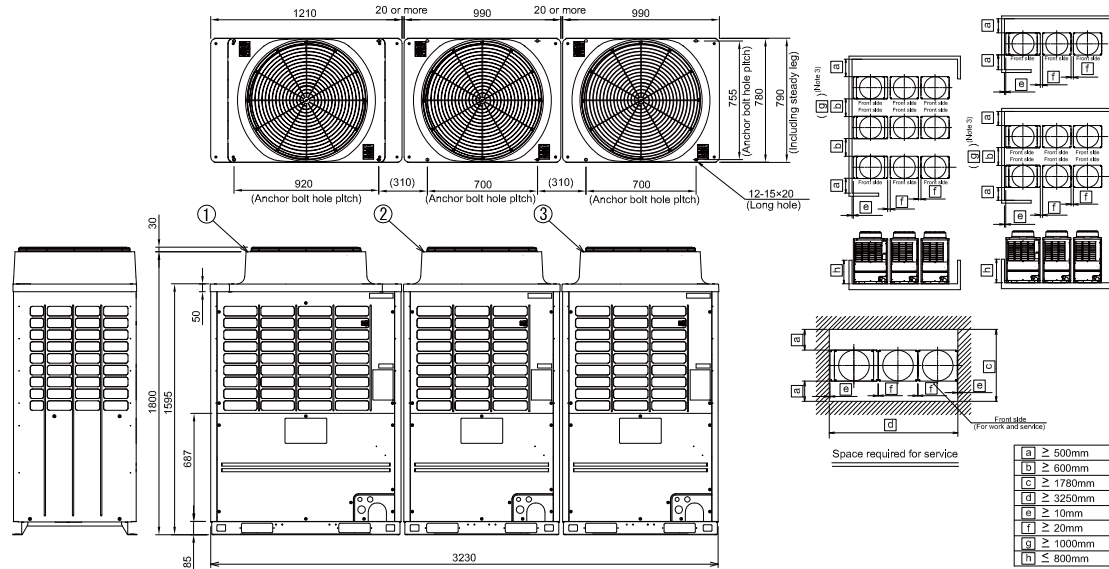
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the 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
MMY-AP3214FT8-E	MMY-MAP1204FT8-E	MMY-MAP1004FT8-E	MMY-MAP1004FT8-E
MMY-AP3414FT8-E	MMY-MAP1404FT8-E	MMY-MAP1004FT8-E	MMY-MAP1004FT8-E

Three units connected



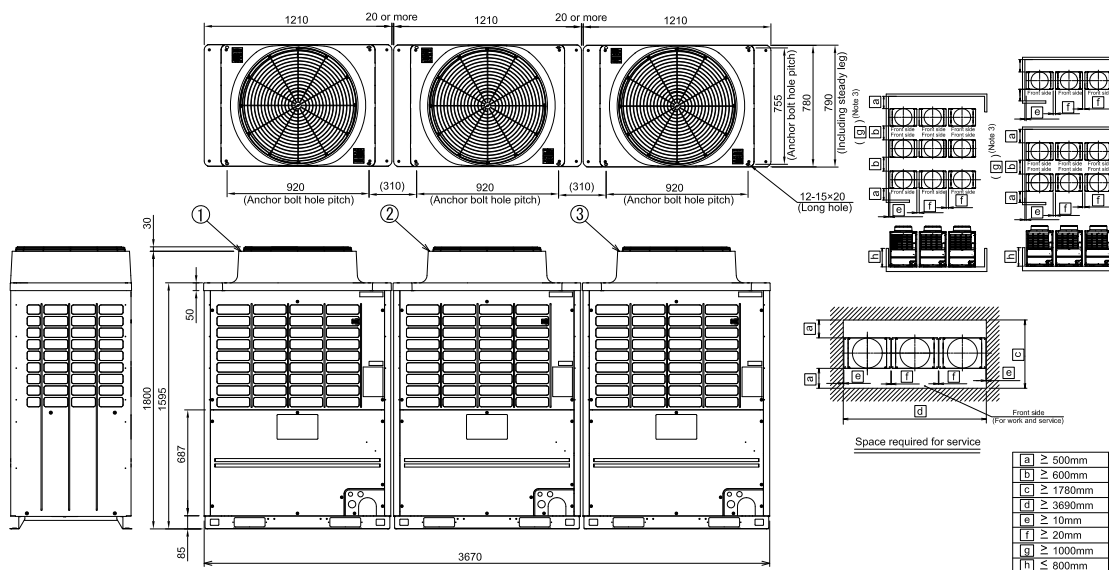
(Note)

- 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 plating 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-AP3614FT8-E	MMY-MAP1204FT8-E	MMY-MAP1204FT8-E	MMY-MAP1204FT8-E
MMY-AP3814FT8-E	MMY-MAP1404FT8-E	MMY-MAP1204FT8-E	MMY-MAP1204FT8-E
MMY-AP4014FT8-E	MMY-MAP1404FT8-E	MMY-MAP1404FT8-E	MMY-MAP1204FT8-E
MMY-AP4214FT8-E	MMY-MAP1404FT8-E	MMY-MAP1404FT8-E	MMY-MAP1404FT8-E

Three units connected



(Note)

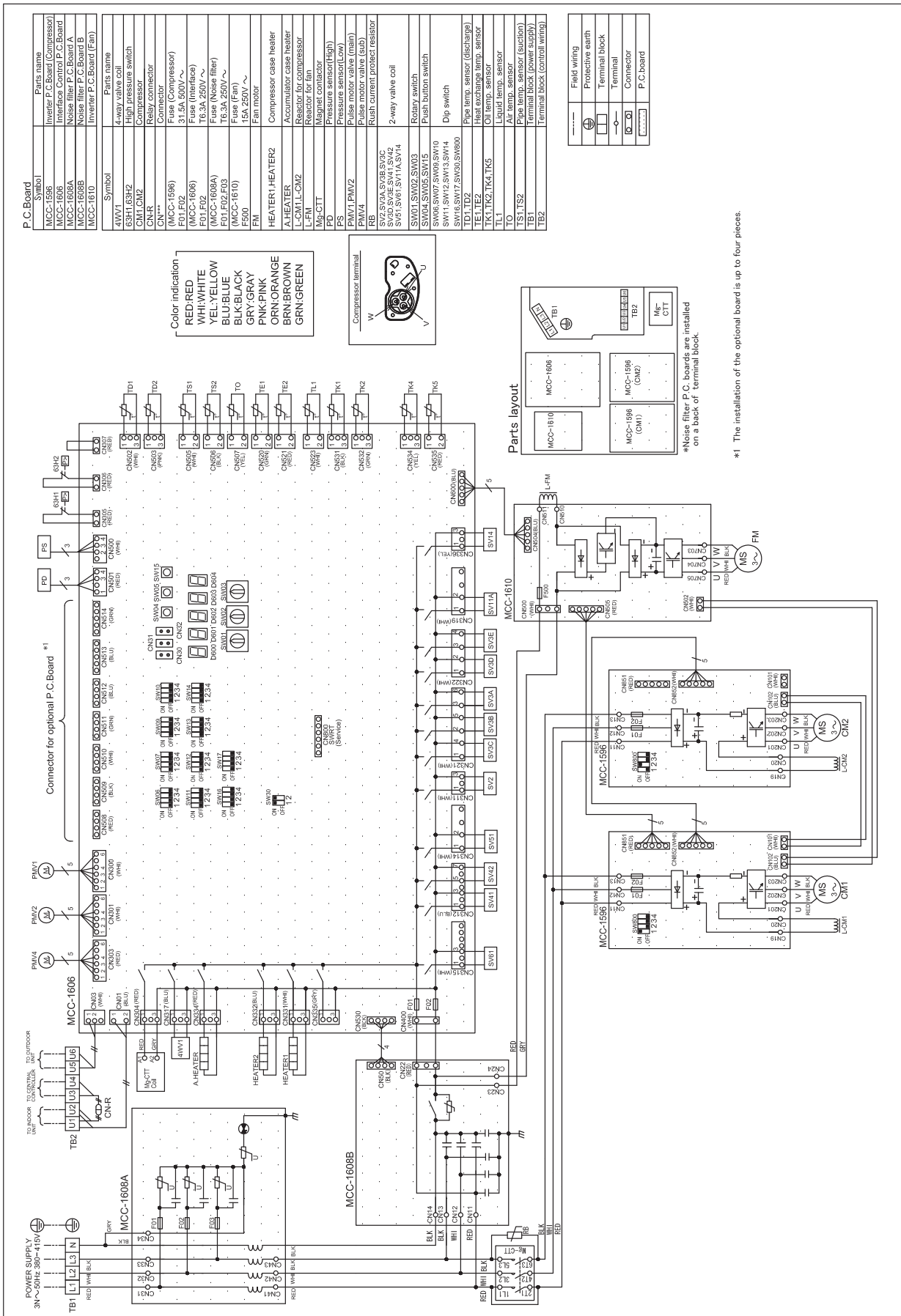
- If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
- Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
- Draw out the pipe procured locally to the front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



11-1-3. Wiring diagram

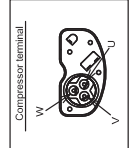
Model : MMY-MAP0804FT8-E, MAP1004FT8-E



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)

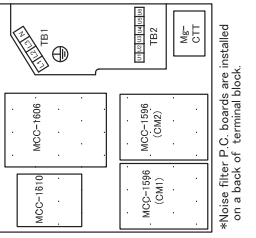
Symbol	Parts name
4WV1	4-way valve coil
63H1,63H2	High pressure switch
CM1,CM2	Compressor
CM**	Compressor
CM**	Compressor
(MCC-1606)	Fuse
F01, F02	31.5A 500V ~
F01, F02	Fuse (Interface)
(MCC-1608A)	Fuse (Noise filter)
F01, F02, F03	T6.3A 250V ~
(MCC-1610)	Fuse (Fan)
F50	15A, 250V ~
FM	Fan motor
HEATER1, HEATER2	Compressor case heater
A HEATER	Accumulator case heater
L-CM1, L-CM2	Reactor for compressor
L-FM	Reactor for fan
MFC-CIT	Magnet contactor
PD	Pressure sensor(High)
PS	Pressure sensor(Low)
PMV1, PMV2	Pulse motor valve (main)
PMV4	Pulse motor valve (sub)
RV	Rush current protect resistor
SV2, SV3A, SV3B, SV3C, SV3D, SV3E, SV4, SV42, SV43, SV44, SV45, SV46, SV11A, SV14	2-way valve coil
SW04, SW02, SW03	Rotary switch
SW06, SW07, SW09, SW10	Push button switch
SW11, SW12, SW13, SW14	Dip switch
SW16, SW17, SW20, SW90	Pipe temp. sensor (discharge)
TE1, TE2	Heat exchange temp. sensor
TS1, TS2	Over-rip sensor
TO	Liquid level sensor
TR	Air temp. sensor
TS1, TS2	Pipe temp. sensor (suction)
TE1	Terminal block (power supply)
TE2	Terminal block (control wiring)

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



	Field wiring
	Protective earth
	Terminal block
	Terminal
	Connector
	P.C. board

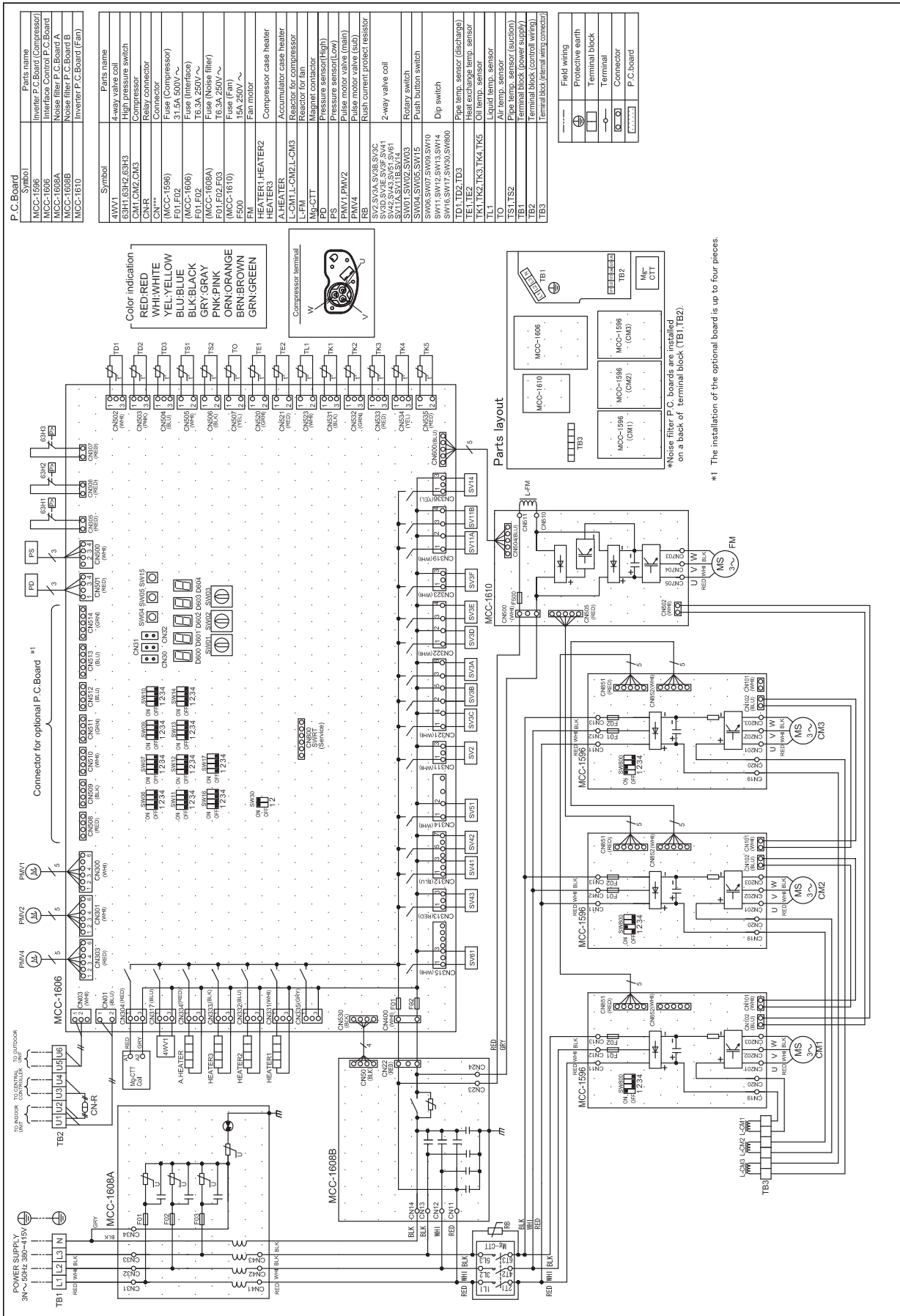
Parts layout



*1 The installation of the optional board is up to four pieces.



Model : MMY-MAP1204FT8-E, MAP1404FT8-E



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)

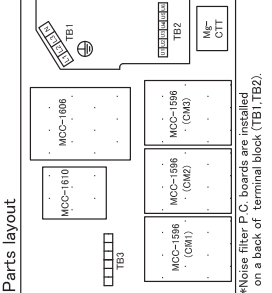
Symbol	Parts name
SW1	4-way switch
SW2	High pressure switch
CM1, CM2, CM3	Compressor
CNR	Relay connector
CNR**	Connector
(MCC-1596)	Fuse (Compressor)
FD1, FD2	Fuse (Interface)
TS, 3A, 250V~	Fuse (250V)
TS, 3A, 250V~	Fuse (250V)
TS, 3A, 250V~	Fuse (250V)
TS, 3A, 250V~	Fuse (250V)
F500	Fan motor
FM	Fan motor
HEATER1, HEATER2, HEATER3	Compressor case heater
A-HEATER	Accumulator case heater
L-CMT1, L-CM2, L-CM3	Reactor for compressor
L-FM	Reactor for fan
L-CTT	Pressure sensor (High)
PS	Pressure sensor (Low)
PMV1, PMV2	Pressure sensor (High)
PMV1	Pulse motor valve (main)
PMV2	Pulse motor valve (sub)
RB	Rush current protect resistor
SV2, SV4, SV8, SV12	2-way valve coil
SV1, SV3, SV5, SV7, SV9, SV11, SV13, SV15	Relay switch
SV10, SV14	Push button switch
SV6, SV2, SV3, SV10	Relay switch
SV11, SV13, SV14	Relay switch
SV16, SV17, SV18, SV19	Dip switch
TK1, TK2, TK3, TK4, TK5	Pipe temp. sensor (discharge)
TE1, TE2	Heat exchange temp. sensor
TL1	Oil temp. sensor
TL2	Liquid temp. sensor
TL3	Air temp. sensor
TS1, TS2	Temperature sensor (switch)
TS3	Temperature sensor (switch)
TB1	Terminal block (control wiring)
TB2	Terminal block (control wiring)
TB3	Terminal block (internal wiring connector)

Symbol	Field wiring
(Symbol)	Protective earth
(Symbol)	Terminal block
(Symbol)	Terminal
(Symbol)	Connector
(Symbol)	P.C. board

Color indication

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

Compressor terminal

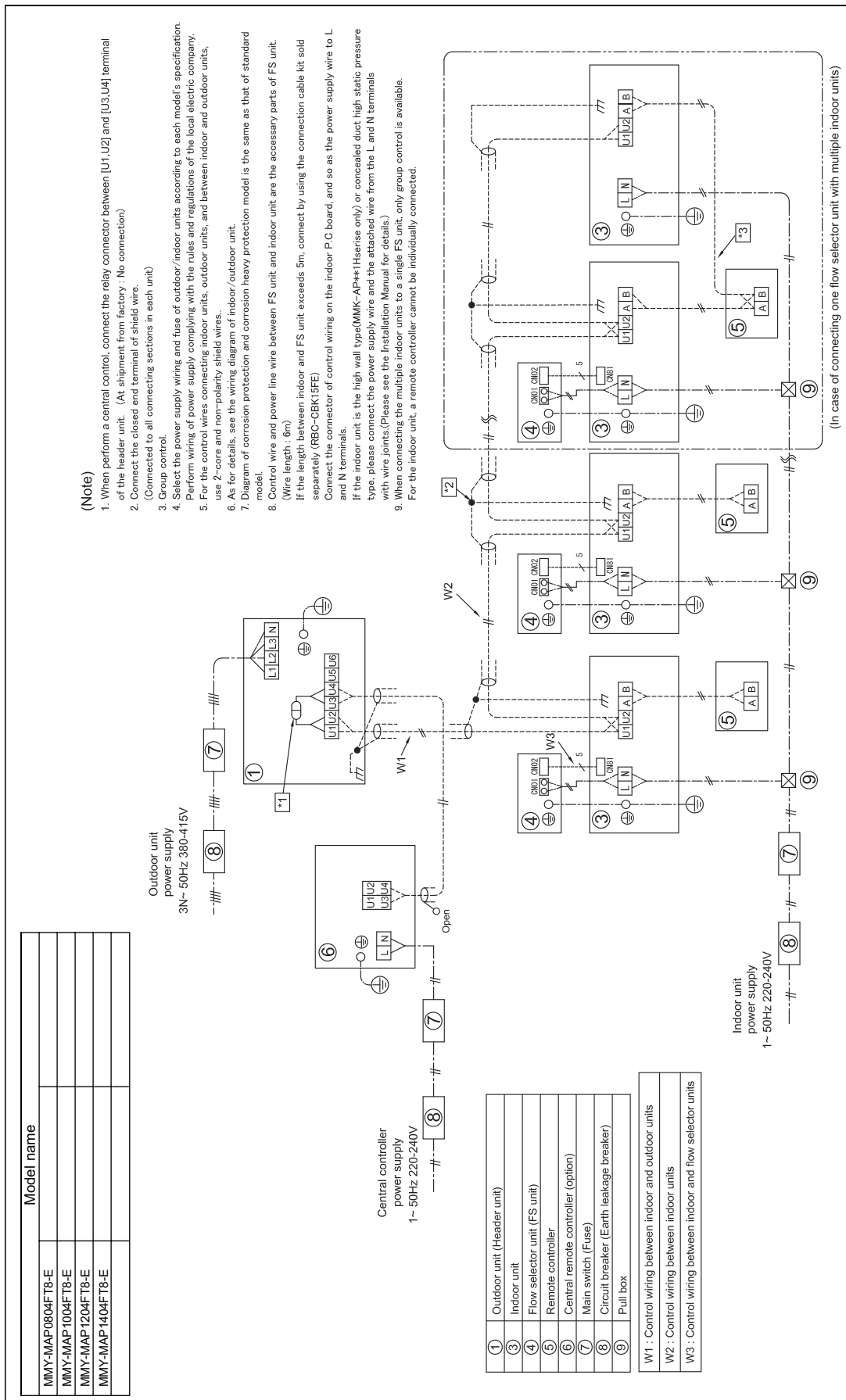


*1 The installation of the optional board is up to four pieces.



11-1-4. Connecting diagram

Model : SHRM-i Single unit



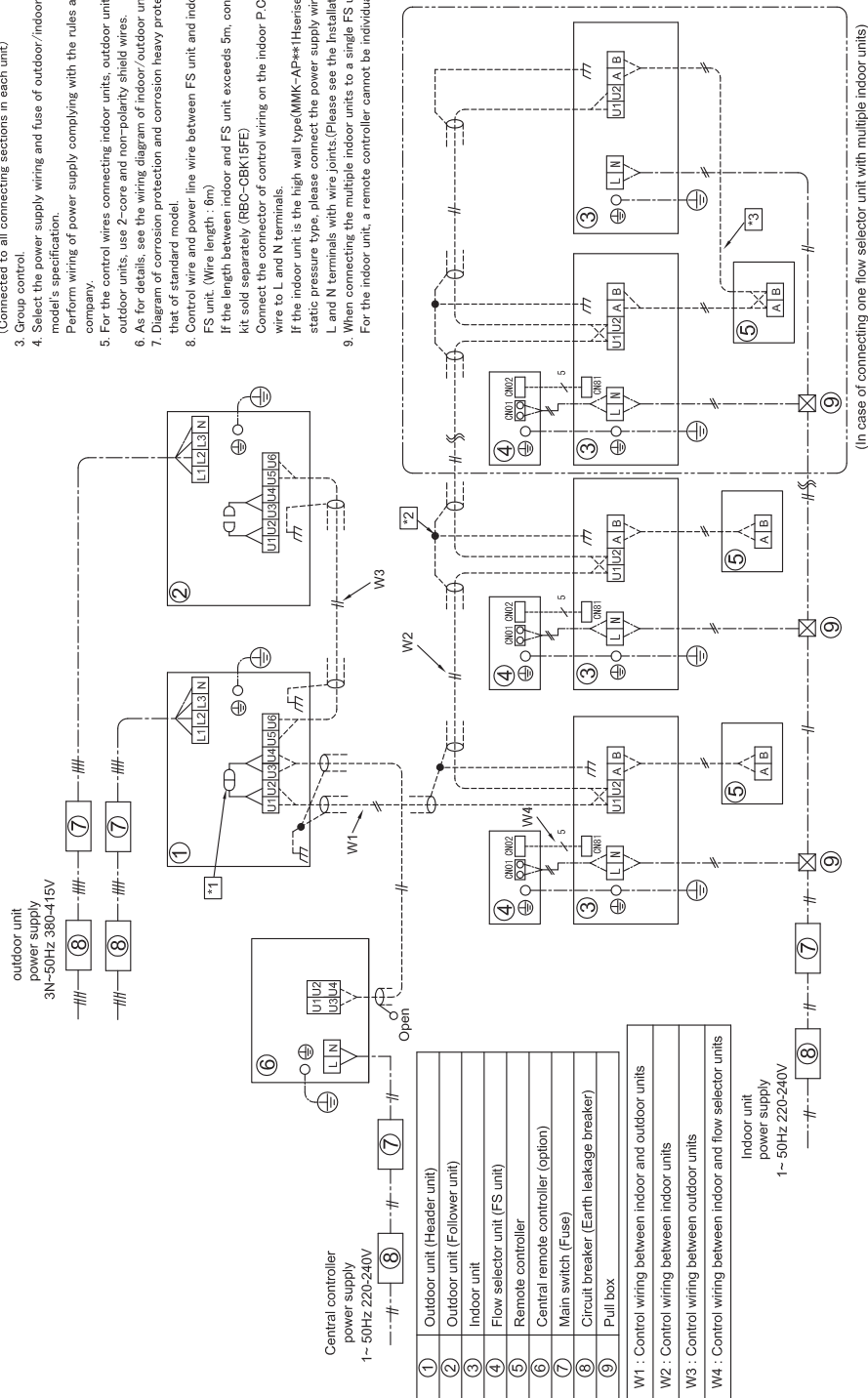


Model : SHRM-i Combination unit <Two Connection>

(Note)

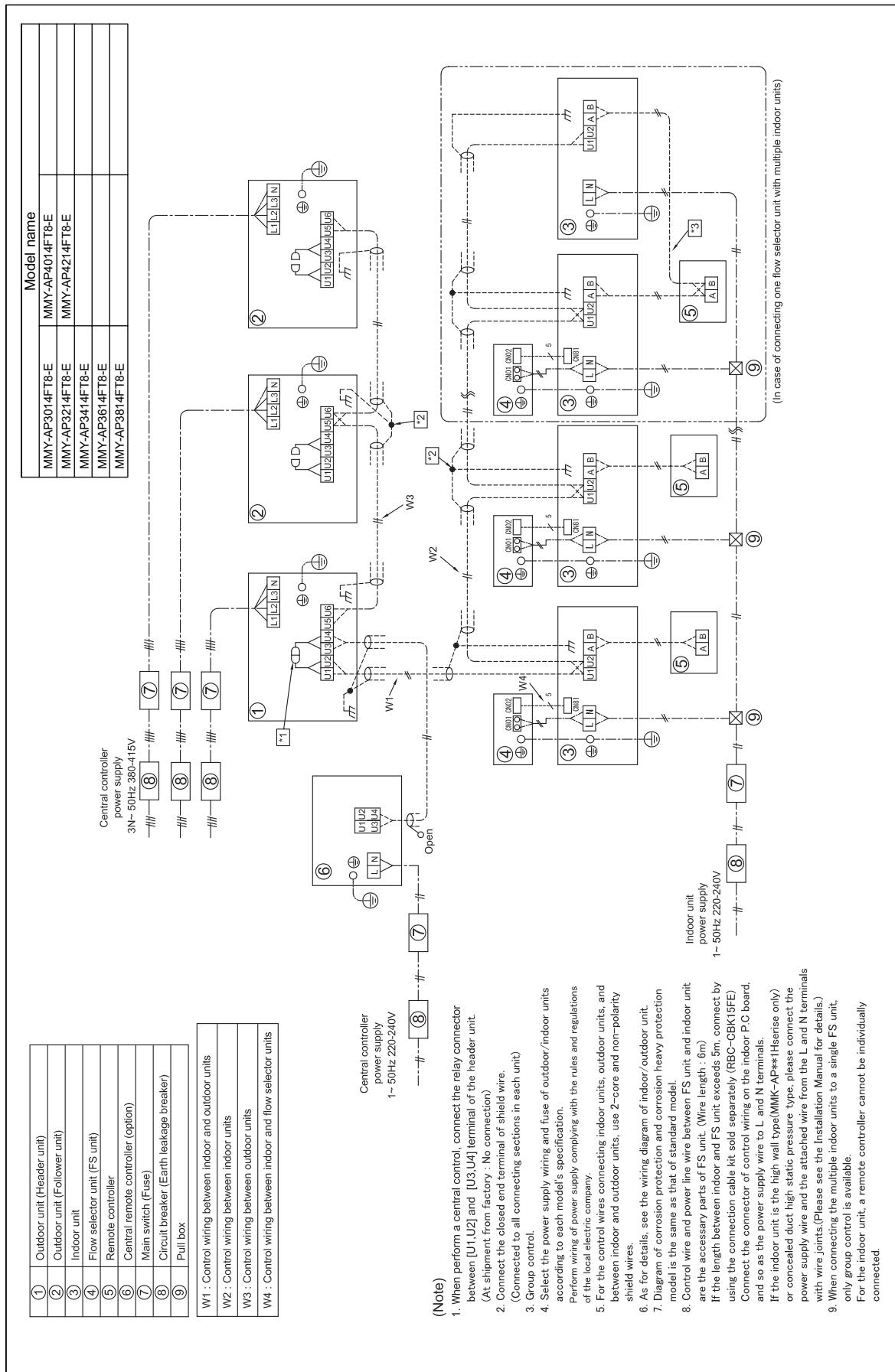
1. When perform a central control, connect the relay connector between [U1,U2] and [U3,U4] terminal of the header unit. (At shipment from factory: No connection)
 2. Connect the closed end terminal of shield wire.
(Connected to all connecting sections in each unit)
 3. Group control.
 4. Select the power 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.
5. For the control wires connecting indoor units, outdoor units, and between indoor and outdoor units, use 2-core and non-polarity shield wires.
 6. As for details, see the wiring diagram of indoor/outdoor unit.
 7. Diagram of corrosion protection and corrosion heavy protection model is the same as that of standard model.
 8. Control wire and power line wire between FS unit and indoor unit are the accessory parts of FS unit. (Wire length: 5m)
If the length between indoor and FS unit exceeds 5m, connect by using the connection cable kit sold separately (RBC-CBKI 5FE).
Connect the connector of control wiring on the indoor P.C board, and so as the power supply wire to L and N terminals.
 9. If the indoor unit is the high wall type(MMK-AP**Hseries only) or concealed duct high static pressure type, please connect the power supply wire and the attached wire from the L and N terminals with wire joints.(Please see the Installation Manual for details.)
- When connecting the multiple indoor units to a single FS unit, only group control is available. For the indoor unit, a remote controller cannot be individually connected.

Model name	
MMY-AP1614FT8-E	MMY-AP2614FT8-E
MMY-AP1814FT8-E	MMY-AP2814FT8-E
MMY-AP2014FT8-E	
MMY-AP2214FT8-E	
MMY-AP2414FT8-E	



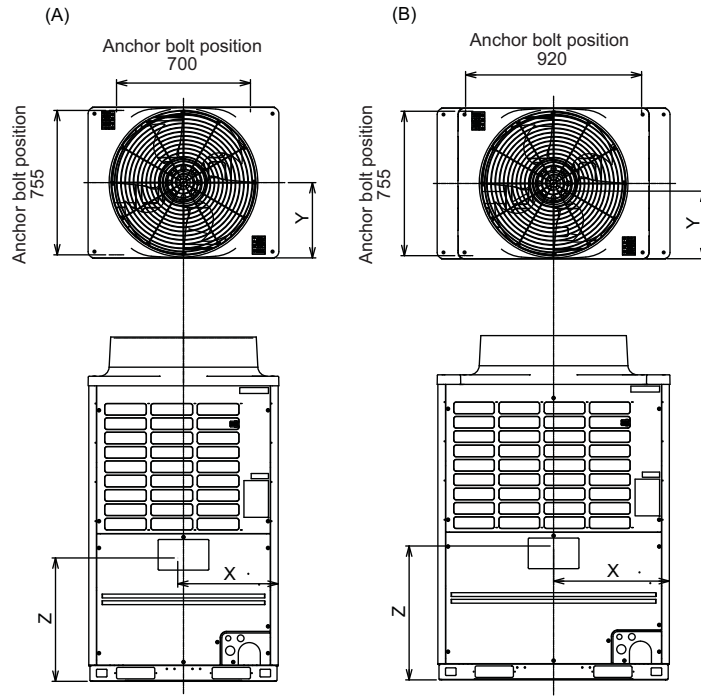


Model : SHRM-i Combination unit <Three Connection>





11-1-5. Center of gravity



No.	Model type	X (mm)	Y (mm)	Z (mm)	Weight (kg)
(A)	MMY-MAP0804FT *	490	370	680	259
	MMY-MAP1004FT *				
(B)	MMY-MAP1204FT *	590	350	700	334
	MMY-MAP1404FT *				

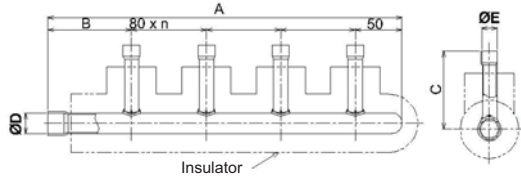


11-1-6. Branch header / branch joint

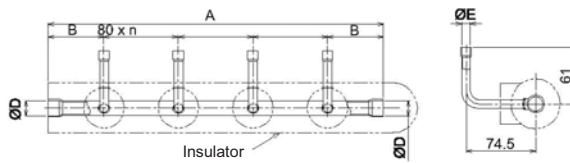
• Branch header

RBM-HY1043FE, HY1083FE, HY2043FE, HY2083FE (For 3 piping)

Suction gas side, Discharge gas side



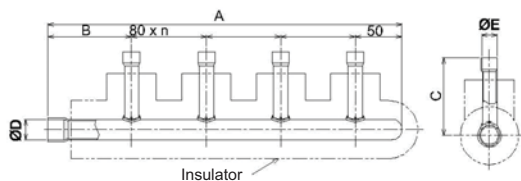
Liquid side



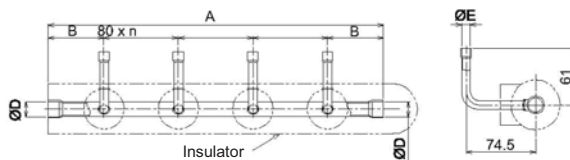
Model		A	B	C	øD	øE	n	Accessory socket Q'ty	Sealed pipe
RBM-HY1043FE	Suction gas side	380	90	83.6	22.2	15.9	3	⑥x 3, ⑨x 4, ⑭x 1, ⑰x 1	ø 15.9 x 1
	Discharge gas side	380	90	83.6	22.2	15.9	3	⑥x 4, ⑨x 4, ⑱x 1, ⑳x 1	ø 15.9 x 3
	Liquid side	330	45	-	15.9	9.5	3	①x 4, ⑥x 1, ⑨x 1	ø 15.9 x 1, ø 9.5 x 1
RBM-HY1083FE	Suction gas side	700	90	83.6	22.2	15.9	7	⑥x 7, ⑨x 8, ⑭x 1, ⑰x 1	ø 15.9 x 3
	Discharge gas side	700	90	83.6	22.2	15.9	7	⑥x 8, ⑨x 8, ⑱x 1, ⑳x 1	ø 15.9 x 7
	Liquid side	650	45	-	15.9	9.5	7	①x 8, ⑥x 1, ⑨x 1	ø 15.9 x 1, ø 9.5 x 3
RBM-HY2043FE	Suction gas side	385.5	95.5	89.3	31.8	15.9	3	⑥x 2, ⑨x 2, ⑳x 1, ㉑x 1	ø 15.9 x 1
	Discharge gas side	380	90	83.6	22.2	15.9	3	⑨x 4, ⑰x 1	ø 15.9 x 3
	Liquid side	330	45	-	15.9	9.5	3	①x 2, ⑤x 1	ø 15.9 x 1, ø 9.5 x 1
RBM-HY2083FE	Suction gas side	705.5	95.5	89.3	31.8	15.9	7	⑥x 7, ⑨x 7, ⑳x 1, ㉑x 1	ø 15.9 x 3
	Discharge gas side	700	90	83.6	22.2	15.9	7	⑨x 8, ⑰x 1	ø 15.9 x 7
	Liquid side	650	45	-	15.9	9.5	7	①x 7, ⑤x 1	ø 15.9 x 1, ø 9.5 x 3

RBM-HY1043E, HY1083E, HY2043E, HY2083E (For 2 piping)

Gas side



Liquid side



Model		A	B	C	øD	øE	n	Accessory socket Q'ty	Sealed pipe
RBM-HY1043E	Gas side	380	90	83.6	22.2	15.9	3	⑥x 4, ⑨x 4, ⑭x 1, ⑱x 1, ⑰x 1	ø 15.9 x 1
	Liquid side	360	60	-	15.9	9.5	3	①x 4, ⑥x 1, ⑨x 1	ø 15.9 x 1, ø 9.5 x 1
RBM-HY1083E	Gas side	700	90	83.6	22.2	15.9	7	⑥x 8, ⑨x 8, ⑭x 1, ⑱x 1, ⑰x 1	ø 15.9 x 3
	Liquid side	680	60	-	15.9	9.5	7	①x 8, ⑥x 1, ⑨x 1	ø 15.9 x 1, ø 9.5 x 3
RBM-HY2043E	Gas side	385.5	95.5	89.3	31.8	15.9	3	⑥x 2, ⑨x 2, ⑳x 1, ㉑x 1	ø 15.9 x 1
	Liquid side	360	60	-	15.9	9.5	3	①x 2	ø 15.9 x 1, ø 9.5 x 1
RBM-HY2083E	Gas side	705.5	95.5	89.3	31.8	15.9	7	⑥x 7, ⑨x 7, ⑳x 1, ㉑x 1	ø 15.9 x 3
	Liquid side	680	60	-	15.9	9.5	7	①x 7	ø 15.9 x 1, ø 9.5 x 3

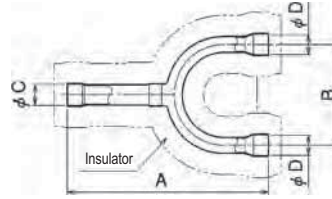
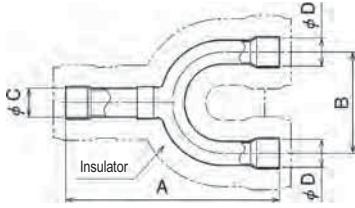


• Y-shape branch joint

RBM-BY55FE, BY105FE, BY205FE, BY305FE (For 3 piping)

Suction gas side, Discharge gas side

Liquid side

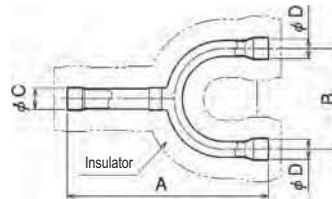
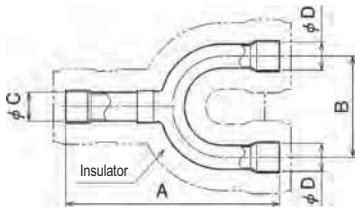


Model		A	B	øC	øD	Accessory socket Q'ty	Sealed pipe
RBM-BY55FE	Suction gas side	160	80	15.9	15.9	⑨x 2	
	Discharge gas side	160	80	15.9	15.9	⑨x 3	ø 12.7 x 1
	Liquid side	130	70	9.5	9.5	①x 2	
RBM-BY105FE	Suction gas side	170	80	22.2	22.2	⑭x 2, ⑦⑩x 2, ⑨①x 1	
	Discharge gas side	170	80	22.2	22.2	⑩x 1, ⑨③x 1	ø 12.7 x 1
	Liquid side	160	80	15.9	15.9	⑨x 1, ⑨①x 1, ⑨②x 1	
RBM-BY205FE	Suction gas side	200	80	31.8	28.6	⑩⑥x 1, ②⑦x 1, ④③x 2, ⑤⑧x 1, ⑤⑨x 1, ⑨①x 1	
	Discharge gas side	170	80	22.2	22.2	⑩x 2, ⑦⑩x 2, ⑨③x 1	ø 12.7 x 1
	Liquid side	160	80	15.9	15.9	⑨x 1, ⑤①x 1, ⑨②x 1	
RBM-BY305FE	Suction gas side	220	80	38.1	38.1	④③x 1, ⑥①x 3, ⑥②x 2, ⑦①x 2, ⑦⑤x 1, ⑨①x 1	
	Discharge gas side	200	80	31.8	28.6	②⑦x 1, ④③x 2, ④⑨x 1, ⑤⑧x 1, ⑤⑨x 1, ⑨③x 1	ø 12.7 x 1
	Liquid side	170	80	22.2	22.2	⑭x 1, ⑩⑧x 1, ⑨②x 1, ⑨④x 1	

RBM-BY55E, BY105E, BY205E, BY305E (For 2 piping)

Gas side

Liquid side

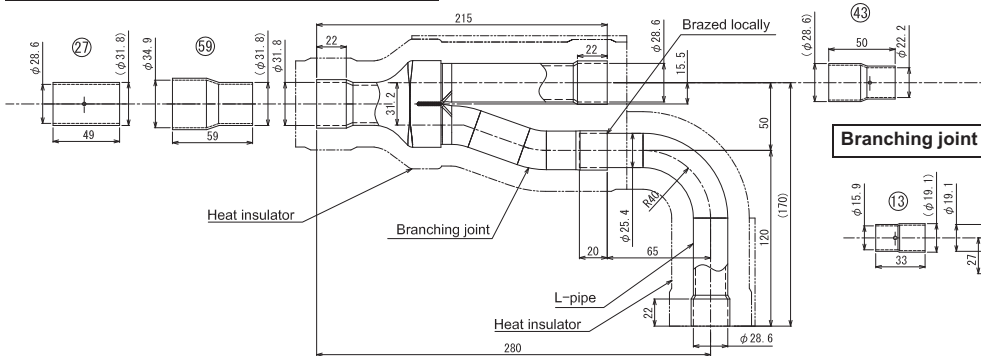


Model		A	B	øC	øD	Accessory socket Q'ty
RBM-BY55E	Gas side	160	80	15.9	15.9	⑨x 1, ⑤①x 2, ⑨①x 2
	Liquid side	130	70	9.5	9.5	①x 2
RBM-BY105E	Gas side	170	80	22.2	22.2	⑭x 2, ⑦⑩x 2, ⑨①x 1
	Liquid side	160	80	15.9	15.9	⑨x 1, ⑨①x 1, ⑨②x 1
RBM-BY205E	Gas side	200	80	31.8	28.6	⑩⑥x 1, ②⑦x 1, ④③x 2, ⑤⑧x 1, ⑤⑨x 1, ⑨①x 1
	Liquid side	160	80	15.9	15.9	⑨x 1, ⑤①x 2, ⑨②x 1
RBM-BY305E	Gas side	220	80	38.1	38.1	④③x 1, ⑥①x 3, ⑥②x 2, ⑦①x 2, ⑦⑤x 1, ⑨①x 1
	Liquid side	170	80	22.2	22.2	⑨②x 1, ⑨④x 3

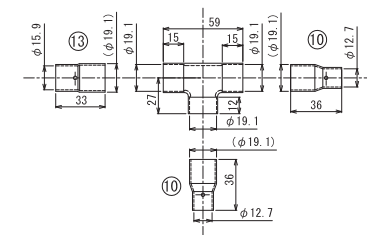


• Branching joint for connection of outdoor units(Set of three kinds of joint)
RBM-BT14FE

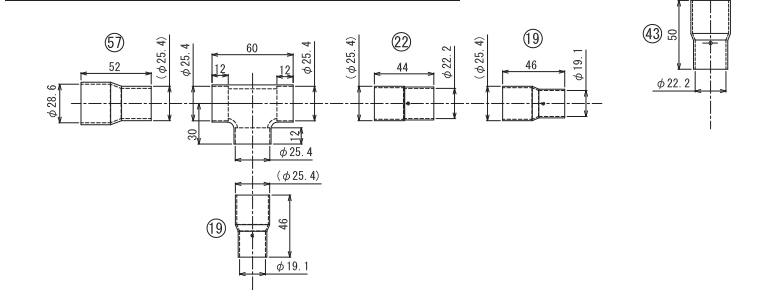
Branching joint (Suction gas side) and sockets



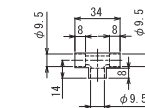
Branching joint (Liquid side) and sockets



Branching joint (Discharge gas side) and sockets

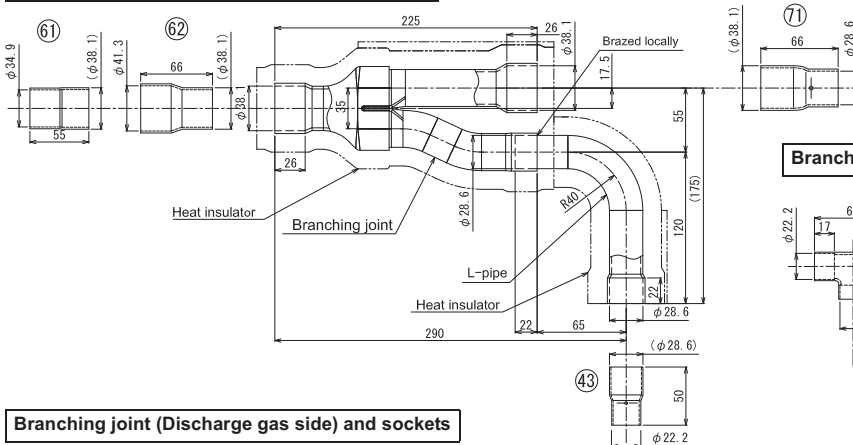


Balance pipe side

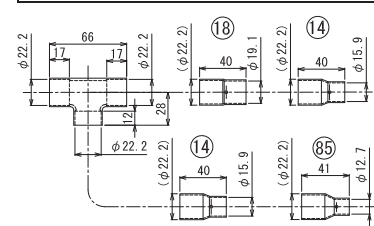


RBM-BT24FE

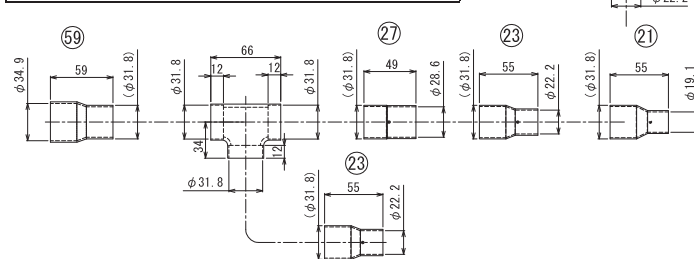
Branching joint (Suction gas side) and sockets



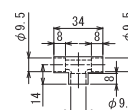
Branching joint (Liquid side) and sockets



Branching joint (Discharge gas side) and sockets

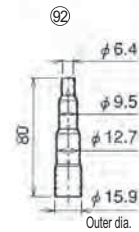
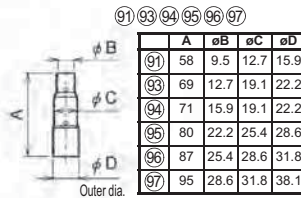
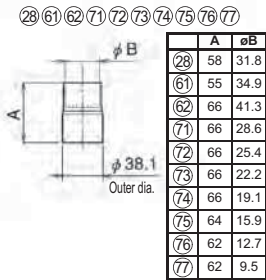
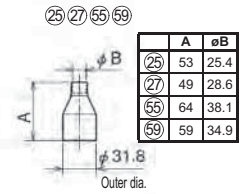
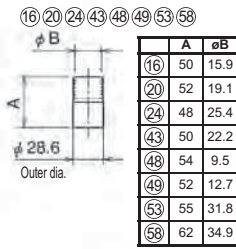
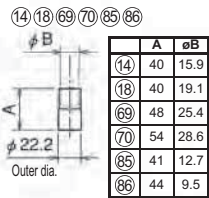
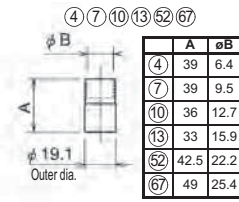
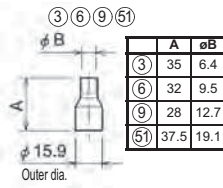
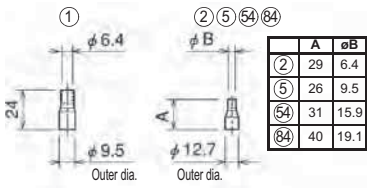


Balance pipe side

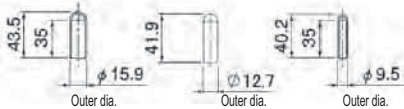




• Accessory socket



Sealed pipe





11-1-7. FS unit (Flow Selector Unit)

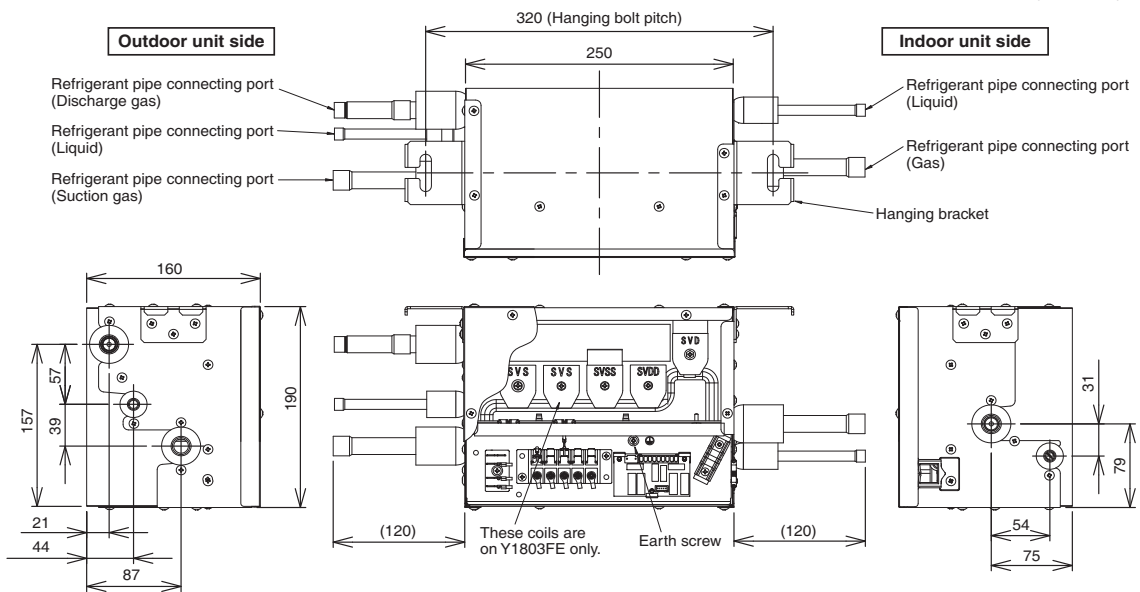
Specifications

Model Name		RBM-Y1123FE	RBM-Y1803FE	RBM-Y2803FE
Power supply		220-240V /1ph /50Hz		
Connectable indoor unit capacity		Below 4.0HP	4.0 to below 6.4HP	6.4 to 10.0HP or less
Connectable indoor units		5	8	8
Dimension	Height (mm)	190	190	200
	Width (mm)	250	250	400
	Depth (mm)	160	160	200
Total Weight (kg)		5	5	8
Connecting port dia. (Indoor unit side)	Liquid side (mm)	Ø 9.5	Ø 9.5	Ø12.7
	Gas side (mm)	Ø15.9	Ø15.9	Ø22.2
Connecting port dia. (Outdoor unit side)	Liquid side (mm)	Ø 9.5	Ø 9.5	Ø12.7
	Discharge gas side (mm)	Ø12.7	Ø12.7	Ø19.1
	Gas side (mm)	Ø15.9	Ø15.9	Ø22.2
Connection		Blaze connection		

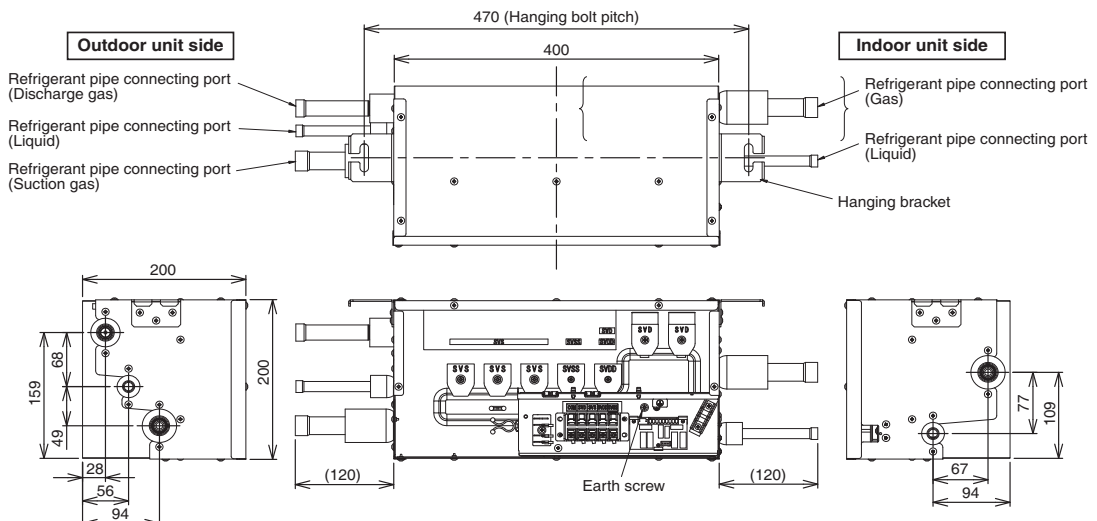
External view

RBM-Y1123FE, RBM-Y1803FE

(Unit:mm)



RBM-Y2803FE

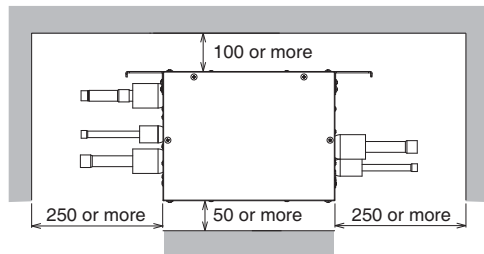




<Installation space>

RBM-Y1123FE, RBM-Y1803FE

(Unit:mm)

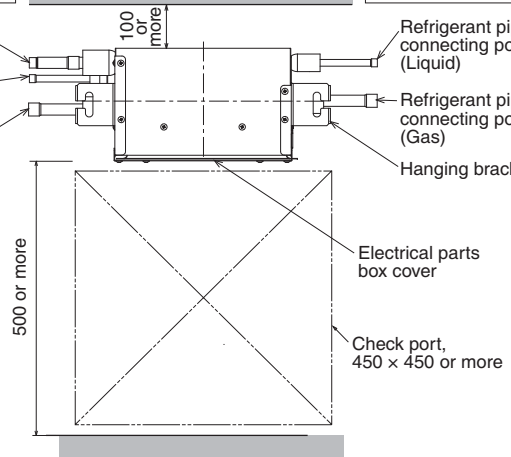


Outdoor unit side

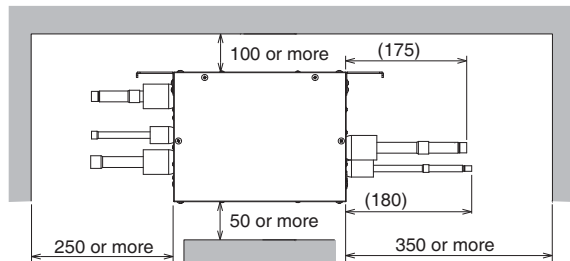
- Refrigerant pipe connecting port (Discharge gas)
- Refrigerant pipe connecting port (Liquid)
- Refrigerant pipe connecting port (Suction gas)

Indoor unit side

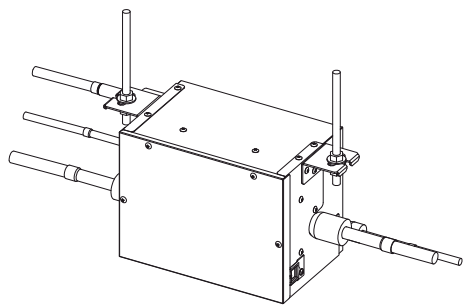
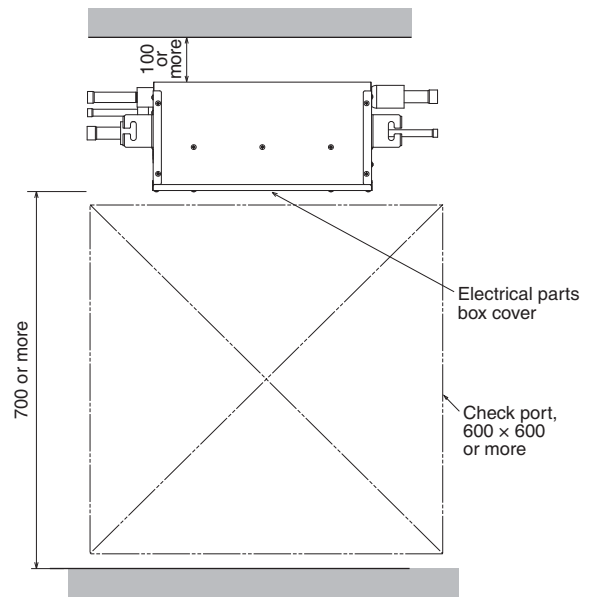
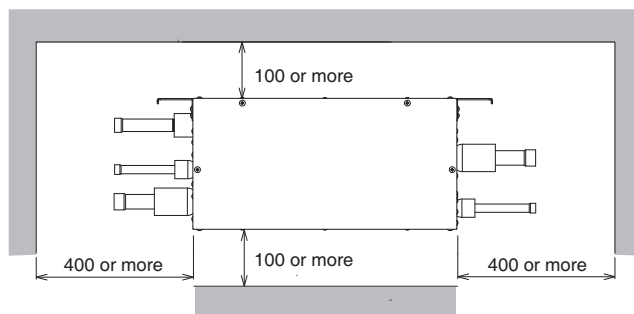
- Refrigerant pipe connecting port (Liquid)
- Refrigerant pipe connecting port (Gas)
- Hanging bracket



<RBM-Y1123FE (When attached pipes are used)>



RBM-Y2803FE





11-1-8. Part Load performance
Single unit

MMY-MAP0804FT8-E (8HP, 22.4kW system)

Cooling

Outdoor Unit			Compressor + Outdoor Fan Power consumption (kW)								
			Outdoor Unit 100% Cooling Capacity (kW)	100% Capacity		90% Capacity		80% Capacity		70% Capacity	
				TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
Dry-Bulb (°C)											
40 °C	20.8	20.8	5.58	18.7	4.65	16.6	3.82	14.6	3.11		
39 °C	21.2	21.2	5.50	19.1	4.58	17.0	3.76	14.8	3.06		
37 °C	21.8	21.8	5.34	19.6	4.44	17.4	3.65	15.3	2.97		
35 °C	22.4	22.4	5.17	20.2	4.30	17.9	3.54	15.7	2.87		
33 °C	22.4	22.4	4.79	20.2	3.99	17.9	3.29	15.7	2.68		
31 °C	22.4	22.4	4.46	20.2	3.72	17.9	3.07	15.7	2.51		
30 °C	22.4	22.4	4.30	20.2	3.59	17.9	2.97	15.7	2.43		
29 °C	22.4	22.4	4.16	20.2	3.47	17.9	2.87	15.7	2.36		
27 °C	22.4	22.4	3.88	20.2	3.25	17.9	2.69	15.7	2.21		
25 °C	22.4	22.4	3.63	20.2	3.04	17.9	2.53	15.7	2.08		
23 °C	22.4	22.4	3.40	20.2	2.85	17.9	2.37	15.7	1.96		
21 °C	22.4	22.4	3.33	20.2	2.80	17.9	2.33	15.7	1.93		
20 °C	22.4	22.4	3.30	20.2	2.77	17.9	2.31	15.7	1.91		
19 °C	22.4	22.4	3.27	20.2	2.75	17.9	2.29	15.7	1.90		
17 °C	22.4	22.4	3.22	20.2	2.71	17.9	2.26	15.7	1.88		
15 °C	22.4	22.4	3.18	20.2	2.68	17.9	2.24	15.7	1.86		

Outdoor Unit			Compressor + Outdoor Fan Power consumption (kW)								
			Outdoor Unit 100% Cooling Capacity (kW)	60% Capacity		50% Capacity		40% Capacity		30% Capacity	
				TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
Dry-Bulb (°C)											
40 °C	20.8	12.5	2.50	10.4	2.01	8.32	1.63	6.24	1.36		
39 °C	21.2	12.7	2.47	10.6	1.98	8.48	1.60	6.36	1.34		
37 °C	21.8	13.1	2.39	10.9	1.92	8.72	1.55	6.54	1.30		
35 °C	22.4	13.4	2.32	11.2	1.86	8.96	1.51	6.72	1.26		
33 °C	22.4	13.4	2.17	11.2	1.75	8.96	1.43	6.72	1.20		
31 °C	22.4	13.4	2.04	11.2	1.65	8.96	1.36	6.72	1.15		
30 °C	22.4	13.4	1.98	11.2	1.61	8.96	1.32	6.72	1.12		
29 °C	22.4	13.4	1.92	11.2	1.56	8.96	1.29	6.72	1.10		
27 °C	22.4	13.4	1.81	11.2	1.48	8.96	1.23	6.72	1.05		
25 °C	22.4	13.4	1.70	11.2	1.40	8.96	1.16	6.72	1.00		
23 °C	22.4	13.4	1.61	11.2	1.32	8.96	1.11	6.72	0.95		
21 °C	22.4	13.4	1.58	11.2	1.31	8.96	1.10	6.72	0.95		
20 °C	22.4	13.4	1.57	11.2	1.30	8.96	1.09	6.72	0.95		
19 °C	22.4	13.4	1.57	11.2	1.30	8.96	1.09	6.72	0.95		
17 °C	22.4	13.4	1.55	11.2	1.29	8.96	1.08	6.72	0.94		
15 °C	22.4	13.4	1.54	11.2	1.28	8.96	1.08	6.72	0.94		

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit				Compressor + Outdoor Fan Power consumption (kW)								
				Outdoor Unit 100% Heating Capacity (kW)	100% Capacity		90% Capacity		80% Capacity		70% Capacity	
					TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
Dry-Bulb (°C)	Wet-Bulb (°C)											
15.0	13.7	25.0	25.0	4.98	22.5	4.26	20.0	3.61	17.5	3.03		
13.0	11.8	25.0	25.0	5.12	22.5	4.37	20.0	3.69	17.5	3.09		
11.0	9.8	25.0	25.0	5.29	22.5	4.51	20.0	3.80	17.5	3.17		
9.0	7.9	25.0	25.0	5.48	22.5	4.65	20.0	3.91	17.5	3.25		
7.0	6.0	25.0	25.0	5.68	22.5	4.82	20.0	4.04	17.5	3.35		
5.0	4.1	24.2	24.2	5.59	21.8	4.74	19.4	3.98	16.9	3.30		
3.0	2.2	23.3	23.3	5.51	21.0	4.67	18.6	3.92	16.3	3.25		
0.0	-0.7	21.9	21.9	5.38	19.7	4.56	17.5	3.82	15.3	3.17		
-3.0	-3.7	20.5	20.5	5.24	18.5	4.44	16.4	3.73	14.4	3.09		
-5.0	-5.6	19.6	19.6	5.15	17.6	4.37	15.7	3.67	13.7	3.04		
-7.0	-7.6	18.6	18.6	5.06	16.7	4.29	14.9	3.60	13.0	2.98		
-10	-10.5	17.1	17.1	4.93	15.4	4.18	13.7	3.51	12.0	2.91		
-14.5	-15.0	14.7	14.7	4.73	13.2	4.01	11.8	3.36	10.3	2.79		

Outdoor Unit				Compressor + Outdoor Fan Power consumption (kW)								
				Outdoor Unit 100% Heating Capacity (kW)	60% Capacity		50% Capacity		40% Capacity		30% Capacity	
					TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
Dry-Bulb (°C)	Wet-Bulb (°C)											
15.0	13.7	25.0	15.0	2.52	12.5	2.08	10.0	1.71	7.50	1.41		
13.0	11.8	25.0	15.0	2.56	12.5	2.10	10.0	1.72	7.50	1.41		
11.0	9.8	25.0	15.0	2.61	12.5	2.14	10.0	1.74	7.50	1.42		
9.0	7.9	25.0	15.0	2.67	12.5	2.18	10.0	1.76	7.50	1.42		
7.0	6.0	25.0	15.0	2.74	12.5	2.22	10.0	1.78	7.50	1.43		
5.0	4.1	24.2	14.5	2.70	12.1	2.19	9.68	1.76	7.26	1.41		
3.0	2.2	23.3	14.0	2.66	11.7	2.15	9.32	1.73	6.99	1.39		
0.0	-0.7	21.9	13.1	2.59	11.0	2.10	8.76	1.69	6.57	1.35		
-3.0	-3.7	20.5	12.3	2.53	10.3	2.05	8.20	1.64	6.15	1.32		
-5.0	-5.6	19.6	11.8	2.49	9.80	2.01	7.84	1.62	5.88	1.30		
-7.0	-7.6	18.6	11.2	2.44	9.30	1.98	7.44	1.59	5.58	1.28		
-10	-10.5	17.1	10.3	2.38	8.55	1.93	6.84	1.55	5.13	1.24		
-14.5	-15.0	14.7	8.82	2.28	7.35	1.85	5.88	1.48	4.41	1.19		

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-MAP1004FT8-E (10HP, 28kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	26.1	26.1	7.86	23.5	6.46	20.9	5.23	18.3	4.18	
39 °C	26.5	26.5	7.75	23.9	6.37	21.2	5.16	18.6	4.12	
37 °C	27.3	27.3	7.51	24.6	6.17	21.8	5.00	19.1	4.00	
35 °C	28.0	28.0	7.28	25.2	5.98	22.4	4.84	19.6	3.87	
33 °C	28.0	28.0	6.73	25.2	5.54	22.4	4.50	19.6	3.60	
31 °C	28.0	28.0	6.24	25.2	5.14	22.4	4.18	19.6	3.36	
30 °C	28.0	28.0	6.02	25.2	4.96	22.4	4.04	19.6	3.25	
29 °C	28.0	28.0	5.81	25.2	4.79	22.4	3.91	19.6	3.15	
27 °C	28.0	28.0	5.41	25.2	4.47	22.4	3.65	19.6	2.95	
25 °C	28.0	28.0	5.05	25.2	4.18	22.4	3.42	19.6	2.77	
23 °C	28.0	28.0	4.72	25.2	3.91	22.4	3.20	19.6	2.60	
21 °C	28.0	28.0	4.62	25.2	3.83	22.4	3.14	19.6	2.55	
20 °C	28.0	28.0	4.58	25.2	3.79	22.4	3.11	19.6	2.53	
19 °C	28.0	28.0	4.53	25.2	3.76	22.4	3.09	19.6	2.51	
17 °C	28.0	28.0	4.46	25.2	3.70	22.4	3.04	19.6	2.48	
15 °C	28.0	28.0	4.40	25.2	3.65	22.4	3.00	19.6	2.45	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		50% Capacity		40% Capacity		30% Capacity			
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)		
40 °C	15.7	3.30	13.1	2.60	10.4	2.08	7.83	1.73		
39 °C	15.9	3.26	13.3	2.56	10.6	2.05	7.95	1.70		
37 °C	16.4	3.16	13.7	2.49	10.9	1.98	8.19	1.65		
35 °C	16.8	3.06	14.0	2.41	11.2	1.92	8.40	1.60		
33 °C	16.8	2.86	14.0	2.27	11.2	1.82	8.40	1.53		
31 °C	16.8	2.68	14.0	2.14	11.2	1.73	8.40	1.46		
30 °C	16.8	2.60	14.0	2.07	11.2	1.69	8.40	1.43		
29 °C	16.8	2.52	14.0	2.02	11.2	1.64	8.40	1.40		
27 °C	16.8	2.37	14.0	1.90	11.2	1.56	8.40	1.34		
25 °C	16.8	2.23	14.0	1.80	11.2	1.48	8.40	1.28		
23 °C	16.8	2.10	14.0	1.70	11.2	1.41	8.40	1.22		
21 °C	16.8	2.07	14.0	1.68	11.2	1.40	8.40	1.21		
20 °C	16.8	2.05	14.0	1.67	11.2	1.39	8.40	1.21		
19 °C	16.8	2.04	14.0	1.66	11.2	1.39	8.40	1.21		
17 °C	16.8	2.02	14.0	1.65	11.2	1.38	8.40	1.20		
15 °C	16.8	2.00	14.0	1.64	11.2	1.37	8.40	1.20		

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit			Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
				TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	31.5	31.5	6.51	28.4	5.52	25.2	4.64	22.1	3.85	
13.0	11.8	31.5	31.5	6.72	28.4	5.68	25.2	4.76	22.1	3.94	
11.0	9.8	31.5	31.5	6.95	28.4	5.87	25.2	4.91	22.1	4.05	
9.0	7.9	31.5	31.5	7.21	28.4	6.08	25.2	5.06	22.1	4.17	
7.0	6.0	31.5	31.5	7.50	28.4	6.31	25.2	5.24	22.1	4.30	
5.0	4.1	30.4	30.4	7.38	27.4	6.21	24.3	5.16	21.3	4.23	
3.0	2.2	29.3	29.3	7.27	26.4	6.12	23.4	5.08	20.5	4.17	
0.0	-0.7	27.6	27.6	7.10	24.8	5.97	22.1	4.96	19.3	4.07	
-3.0	-3.7	25.8	25.8	6.92	23.2	5.82	20.6	4.84	18.1	3.97	
-5.0	-5.6	24.6	24.6	6.80	22.1	5.72	19.7	4.76	17.2	3.90	
-7.0	-7.6	23.4	23.4	6.68	21.1	5.62	18.7	4.67	16.4	3.83	
-10	-10.5	21.5	21.5	6.51	19.4	5.48	17.2	4.55	15.1	3.73	
-14.5	-15.0	18.5	18.5	6.24	16.7	5.25	14.8	4.36	13.0	3.58	

Outdoor Unit			Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)	60% Capacity		50% Capacity		40% Capacity		30% Capacity			
				TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)		
15.0	13.7	18.9	3.17	15.8	2.58	12.6	2.10	9.45	1.73		
13.0	11.8	18.9	3.23	15.8	2.62	12.6	2.12	9.45	1.73		
11.0	9.8	18.9	3.30	15.8	2.67	12.6	2.15	9.45	1.74		
9.0	7.9	18.9	3.39	15.8	2.72	12.6	2.17	9.45	1.74		
7.0	6.0	18.9	3.48	15.8	2.78	12.6	2.21	9.45	1.75		
5.0	4.1	30.4	18.2	15.2	2.74	12.2	2.17	9.12	1.73		
3.0	2.2	29.3	17.6	14.7	2.70	11.7	2.14	8.79	1.70		
0.0	-0.7	27.6	16.6	13.8	2.63	11.0	2.09	8.28	1.66		
-3.0	-3.7	25.8	15.5	12.9	2.57	10.3	2.04	7.74	1.62		
-5.0	-5.6	24.6	14.8	12.3	2.52	9.84	2.00	7.38	1.59		
-7.0	-7.6	23.4	14.0	11.7	2.48	9.36	1.97	7.02	1.56		
-10	-10.5	21.5	12.9	10.8	2.41	8.60	1.92	6.45	1.52		
-14.5	-15.0	18.5	11.1	9.25	2.31	7.40	1.84	5.55	1.46		

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-MAP1204FT8-E (12HP, 33.5kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		90% Capacity		80% Capacity		70% Capacity			
	TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
40 °C	31.2	31.2	9.05	28.1	7.42	25.0	5.99	21.8	4.78	
39 °C	31.7	31.7	8.92	28.5	7.31	25.4	5.90	22.2	4.71	
37 °C	32.6	32.6	8.65	29.3	7.09	26.1	5.72	22.8	4.57	
35 °C	33.5	33.5	8.38	30.2	6.86	26.8	5.55	23.5	4.42	
33 °C	33.5	33.5	7.74	30.2	6.35	26.8	5.14	23.5	4.12	
31 °C	33.5	33.5	7.18	30.2	5.90	26.8	4.79	23.5	3.84	
30 °C	33.5	33.5	6.92	30.2	5.69	26.8	4.62	23.5	3.72	
29 °C	33.5	33.5	6.67	30.2	5.49	26.8	4.47	23.5	3.60	
27 °C	33.5	33.5	6.22	30.2	5.12	26.8	4.18	23.5	3.37	
25 °C	33.5	33.5	5.80	30.2	4.79	26.8	3.91	23.5	3.16	
23 °C	33.5	33.5	5.42	30.2	4.48	26.8	3.66	23.5	2.97	
21 °C	33.5	33.5	5.30	30.2	4.39	26.8	3.59	23.5	2.92	
20 °C	33.5	33.5	5.25	30.2	4.34	26.8	3.56	23.5	2.90	
19 °C	33.5	33.5	5.20	30.2	4.31	26.8	3.53	23.5	2.87	
17 °C	33.5	33.5	5.11	30.2	4.24	26.8	3.48	23.5	2.84	
15 °C	33.5	33.5	5.04	30.2	4.18	26.8	3.43	23.5	2.80	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		50% Capacity		40% Capacity		30% Capacity			
	TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
40 °C	31.2	18.7	3.78	15.6	2.99	12.5	2.42	9.36	2.05	
39 °C	31.7	19.0	3.72	15.9	2.95	12.7	2.38	9.51	2.02	
37 °C	32.6	19.6	3.61	16.3	2.86	13.0	2.31	9.78	1.96	
35 °C	33.5	20.1	3.50	16.8	2.77	13.4	2.24	10.1	1.90	
33 °C	33.5	20.1	3.27	16.8	2.61	13.4	2.12	10.1	1.82	
31 °C	33.5	20.1	3.07	16.8	2.46	13.4	2.02	10.1	1.75	
30 °C	33.5	20.1	2.97	16.8	2.39	13.4	1.97	10.1	1.71	
29 °C	33.5	20.1	2.88	16.8	2.32	13.4	1.92	10.1	1.67	
27 °C	33.5	20.1	2.71	16.8	2.20	13.4	1.83	10.1	1.60	
25 °C	33.5	20.1	2.55	16.8	2.08	13.4	1.74	10.1	1.53	
23 °C	33.5	20.1	2.40	16.8	1.96	13.4	1.65	10.1	1.46	
21 °C	33.5	20.1	2.37	16.8	1.94	13.4	1.64	10.1	1.46	
20 °C	33.5	20.1	2.35	16.8	1.93	13.4	1.63	10.1	1.45	
19 °C	33.5	20.1	2.34	16.8	1.92	13.4	1.63	10.1	1.45	
17 °C	33.5	20.1	2.31	16.8	1.91	13.4	1.62	10.1	1.45	
15 °C	33.5	20.1	2.29	16.8	1.89	13.4	1.61	10.1	1.45	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit			Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)	100% Capacity		90% Capacity		80% Capacity		70% Capacity			
		TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
15.0	13.7	37.5	37.5	7.84	33.8	6.64	30.0	5.57	26.3	4.62	
13.0	11.8	37.5	37.5	8.09	33.8	6.84	30.0	5.72	26.3	4.73	
11.0	9.8	37.5	37.5	8.38	33.8	7.07	30.0	5.90	26.3	4.86	
9.0	7.9	37.5	37.5	8.70	33.8	7.32	30.0	6.09	26.3	5.00	
7.0	6.0	37.5	37.5	9.05	33.8	7.60	30.0	6.31	26.3	5.16	
5.0	4.1	36.2	36.2	8.91	32.6	7.49	29.0	6.21	25.3	5.09	
3.0	2.2	34.9	34.9	8.77	31.4	7.37	27.9	6.11	24.4	5.01	
0.0	-0.7	32.9	32.9	8.56	29.6	7.19	26.3	5.97	23.0	4.89	
-3.0	-3.7	30.7	30.7	8.35	27.6	7.01	24.6	5.82	21.5	4.76	
-5.0	-5.6	29.3	29.3	8.21	26.4	6.90	23.4	5.72	20.5	4.68	
-7.0	-7.6	27.8	27.8	8.06	25.0	6.77	22.2	5.62	19.5	4.60	
-10	-10.5	25.6	25.6	7.85	23.0	6.60	20.5	5.47	17.9	4.48	
-14.5	-15.0	22.0	22.0	7.53	19.8	6.32	17.6	5.25	15.4	4.30	

Outdoor Unit			Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)	60% Capacity		50% Capacity		40% Capacity		30% Capacity			
		TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
15.0	13.7	37.5	22.5	3.80	18.8	3.10	15.0	2.53	11.3	2.09	
13.0	11.8	37.5	22.5	3.87	18.8	3.15	15.0	2.55	11.3	2.09	
11.0	9.8	37.5	22.5	3.96	18.8	3.20	15.0	2.58	11.3	2.10	
9.0	7.9	37.5	22.5	4.06	18.8	3.26	15.0	2.61	11.3	2.11	
7.0	6.0	37.5	22.5	4.17	18.8	3.34	15.0	2.65	11.3	2.12	
5.0	4.1	36.2	21.7	4.11	18.1	3.29	14.5	2.61	10.9	2.09	
3.0	2.2	34.9	20.9	4.05	17.5	3.23	14.0	2.57	10.5	2.05	
0.0	-0.7	32.9	19.7	3.95	16.5	3.16	13.2	2.51	9.87	2.00	
-3.0	-3.7	30.7	18.4	3.85	15.4	3.08	12.3	2.45	9.21	1.95	
-5.0	-5.6	29.3	17.6	3.79	14.7	3.03	11.7	2.40	8.79	1.92	
-7.0	-7.6	27.8	16.7	3.72	13.9	2.97	11.1	2.36	8.34	1.89	
-10	-10.5	25.6	15.4	3.62	12.8	2.90	10.2	2.30	7.68	1.84	
-14.5	-15.0	22.0	13.2	3.47	11.0	2.78	8.80	2.21	6.60	1.76	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-MAP1404FT8-E (14HP, 40kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	37.2	37.2	12.2	33.5	9.96	29.8	8.01	26.0	6.36	
39 °C	37.8	37.8	12.0	34.0	9.81	30.2	7.89	26.5	6.27	
37 °C	39.0	39.0	11.7	35.1	9.52	31.2	7.65	27.3	6.08	
35 °C	40.0	40.0	11.3	36.0	9.22	32.0	7.41	28.0	5.89	
33 °C	40.0	40.0	10.4	36.0	8.52	32.0	6.87	28.0	5.48	
31 °C	40.0	40.0	9.66	36.0	7.91	32.0	6.39	28.0	5.11	
30 °C	40.0	40.0	9.31	36.0	7.63	32.0	6.17	28.0	4.94	
29 °C	40.0	40.0	8.98	36.0	7.36	32.0	5.96	28.0	4.78	
27 °C	40.0	40.0	8.36	36.0	6.86	32.0	5.57	28.0	4.48	
25 °C	40.0	40.0	7.79	36.0	6.41	32.0	5.21	28.0	4.20	
23 °C	40.0	40.0	7.28	36.0	5.99	32.0	4.88	28.0	3.94	
21 °C	40.0	40.0	7.12	36.0	5.86	32.0	4.78	28.0	3.87	
20 °C	40.0	40.0	7.05	36.0	5.81	32.0	4.74	28.0	3.84	
19 °C	40.0	40.0	6.98	36.0	5.75	32.0	4.70	28.0	3.81	
17 °C	40.0	40.0	6.86	36.0	5.66	32.0	4.63	28.0	3.76	
15 °C	40.0	40.0	6.76	36.0	5.58	32.0	4.57	28.0	3.72	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	37.2	22.3	5.01	18.6	3.95	14.9	3.20	11.20	2.74	
39 °C	37.8	22.7	4.93	18.9	3.90	15.1	3.15	11.30	2.70	
37 °C	39.0	23.4	4.79	19.5	3.78	15.6	3.05	11.70	2.62	
35 °C	40.0	24.0	4.64	20.0	3.66	16.0	2.96	12.0	2.53	
33 °C	40.0	24.0	4.33	20.0	3.44	16.0	2.81	12.0	2.43	
31 °C	40.0	24.0	4.06	20.0	3.25	16.0	2.67	12.0	2.33	
30 °C	40.0	24.0	3.94	20.0	3.16	16.0	2.61	12.0	2.28	
29 °C	40.0	24.0	3.81	20.0	3.07	16.0	2.54	12.0	2.23	
27 °C	40.0	24.0	3.59	20.0	2.90	16.0	2.42	12.0	2.14	
25 °C	40.0	24.0	3.38	20.0	2.74	16.0	2.30	12.0	2.05	
23 °C	40.0	24.0	3.18	20.0	2.59	16.0	2.19	12.0	1.95	
21 °C	40.0	24.0	3.13	20.0	2.57	16.0	2.17	12.0	1.95	
20 °C	40.0	24.0	3.11	20.0	2.55	16.0	2.17	12.0	1.95	
19 °C	40.0	24.0	3.09	20.0	2.54	16.0	2.16	12.0	1.95	
17 °C	40.0	24.0	3.06	20.0	2.52	16.0	2.15	12.0	1.94	
15 °C	40.0	24.0	3.03	20.0	2.50	16.0	2.14	12.0	1.94	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit			Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
				TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	45.0	45.0	10.7	40.5	8.82	36.0	7.20	31.5	5.82	
13.0	11.8	45.0	45.0	11.1	40.5	9.14	36.0	7.44	31.5	5.99	
11.0	9.8	45.0	45.0	11.6	40.5	9.52	36.0	7.72	31.5	6.19	
9.0	7.9	45.0	45.0	12.1	40.5	9.93	36.0	8.03	31.5	6.41	
7.0	6.0	45.0	45.0	12.7	40.5	10.4	36.0	8.38	31.5	6.66	
5.0	4.1	43.5	43.5	12.5	39.2	10.2	34.8	8.26	30.5	6.56	
3.0	2.2	41.9	41.9	12.3	37.7	10.1	33.5	8.13	29.3	6.46	
0.0	-0.7	39.5	39.5	12.0	35.6	9.84	31.6	7.93	27.7	6.31	
-3.0	-3.7	36.9	36.9	11.7	33.2	9.59	29.5	7.73	25.8	6.15	
-5.0	-5.6	35.2	35.2	11.5	31.7	9.43	28.2	7.61	24.6	6.04	
-7.0	-7.6	33.4	33.4	11.3	30.1	9.26	26.7	7.47	23.4	5.94	
-10	-10.5	30.7	30.7	11.0	27.6	9.02	24.6	7.28	21.5	5.78	
-14.5	-15.0	26.4	26.4	10.6	23.8	8.65	21.1	6.98	18.5	5.54	

Outdoor Unit			Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
				TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	45.0	27.0	4.68	22.5	3.78	18.0	3.13	13.5	2.71	
13.0	11.8	45.0	27.0	4.79	22.5	3.84	18.0	3.14	13.5	2.70	
11.0	9.8	45.0	27.0	4.92	22.5	3.91	18.0	3.17	13.5	2.69	
9.0	7.9	45.0	27.0	5.06	22.5	3.99	18.0	3.20	13.5	2.68	
7.0	6.0	45.0	27.0	5.23	22.5	4.09	18.0	3.24	13.5	2.68	
5.0	4.1	43.5	26.1	5.15	21.8	4.03	17.4	3.19	13.1	2.64	
3.0	2.2	41.9	25.1	5.07	21.0	3.97	16.8	3.14	12.6	2.60	
0.0	-0.7	39.5	23.7	4.95	19.8	3.87	15.8	3.07	11.9	2.54	
-3.0	-3.7	36.9	22.1	4.83	18.5	3.77	14.8	2.99	11.1	2.47	
-5.0	-5.6	35.2	21.1	4.75	17.6	3.71	14.1	2.94	10.6	2.43	
-7.0	-7.6	33.4	20.0	4.66	16.7	3.65	13.4	2.89	10.0	2.39	
-10	-10.5	30.7	18.4	4.54	15.4	3.55	12.3	2.81	9.21	2.33	
-14.5	-15.0	26.4	15.8	4.35	13.2	3.40	10.6	2.70	7.92	2.23	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



Combination

MMY-AP1614FT8-E (16HP, 45kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	41.9	41.9	11.3	37.7	9.37	33.5	7.70	29.3	6.26	
39 °C	42.5	42.5	11.1	38.3	9.23	34.0	7.59	29.8	6.17	
37 °C	43.8	43.8	10.8	39.4	8.95	35.0	7.36	30.7	5.98	
35 °C	45.0	45.0	10.4	40.5	8.67	36.0	7.13	31.5	5.79	
33 °C	45.0	45.0	9.66	40.5	8.05	36.0	6.64	31.5	5.41	
31 °C	45.0	45.0	8.98	40.5	7.50	36.0	6.19	31.5	5.06	
30 °C	45.0	45.0	8.67	40.5	7.25	36.0	5.99	31.5	4.90	
29 °C	45.0	45.0	8.38	40.5	7.00	36.0	5.79	31.5	4.75	
27 °C	45.0	45.0	7.82	40.5	6.55	36.0	5.43	31.5	4.46	
25 °C	45.0	45.0	7.32	40.5	6.13	36.0	5.09	31.5	4.19	
23 °C	45.0	45.0	6.85	40.5	5.75	36.0	4.78	31.5	3.94	
21 °C	45.0	45.0	6.71	40.5	5.64	36.0	4.69	31.5	3.88	
20 °C	45.0	45.0	6.65	40.5	5.59	36.0	4.66	31.5	3.85	
19 °C	45.0	45.0	6.60	40.5	5.55	36.0	4.62	31.5	3.83	
17 °C	45.0	45.0	6.49	40.5	5.47	36.0	4.56	31.5	3.78	
15 °C	45.0	45.0	6.41	40.5	5.40	36.0	4.51	31.5	3.74	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	41.9	25.1	5.04	21.0	4.05	16.8	3.28	12.6	2.73	
39 °C	42.5	25.5	4.97	21.3	3.99	17.0	3.23	12.8	2.69	
37 °C	43.8	26.3	4.82	21.9	3.87	17.5	3.13	13.1	2.61	
35 °C	45.0	27.0	4.67	22.5	3.75	18.0	3.04	13.5	2.53	
33 °C	45.0	27.0	4.38	22.5	3.53	18.0	2.88	13.5	2.42	
31 °C	45.0	27.0	4.11	22.5	3.34	18.0	2.74	13.5	2.31	
30 °C	45.0	27.0	3.99	22.5	3.24	18.0	2.67	13.5	2.26	
29 °C	45.0	27.0	3.87	22.5	3.15	18.0	2.60	13.5	2.21	
27 °C	45.0	27.0	3.65	22.5	2.98	18.0	2.47	13.5	2.11	
25 °C	45.0	27.0	3.44	22.5	2.82	18.0	2.35	13.5	2.02	
23 °C	45.0	27.0	3.24	22.5	2.67	18.0	2.23	13.5	1.92	
21 °C	45.0	27.0	3.19	22.5	2.64	18.0	2.21	13.5	1.91	
20 °C	45.0	27.0	3.17	22.5	2.62	18.0	2.20	13.5	1.91	
19 °C	45.0	27.0	3.16	22.5	2.61	18.0	2.20	13.5	1.91	
17 °C	45.0	27.0	3.12	22.5	2.59	18.0	2.18	13.5	1.90	
15 °C	45.0	27.0	3.09	22.5	2.57	18.0	2.17	13.5	1.89	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	50.0	50.0	9.96	45.0	8.52	40.0	7.21	35.0	6.05
13.0	11.8	50.0	50.0	10.2	45.0	8.74	40.0	7.39	35.0	6.18
11.0	9.8	50.0	50.0	10.6	45.0	9.02	40.0	7.60	35.0	6.34
9.0	7.9	50.0	50.0	11.0	45.0	9.31	40.0	7.83	35.0	6.51
7.0	6.0	50.0	50.0	11.4	45.0	9.64	40.0	8.08	35.0	6.70
5.0	4.1	48.3	48.3	11.2	43.5	9.49	38.6	7.96	33.8	6.59
3.0	2.2	46.6	46.6	11.0	41.9	9.34	37.3	7.84	32.6	6.49
0.0	-0.7	43.9	43.9	10.8	39.5	9.12	35.1	7.65	30.7	6.34
-3.0	-3.7	41.0	41.0	10.5	36.9	8.89	32.8	7.45	28.7	6.18
-5.0	-5.6	39.1	39.1	10.3	35.2	8.74	31.3	7.33	27.4	6.08
-7.0	-7.6	37.1	37.1	10.1	33.4	8.59	29.7	7.20	26.0	5.97
-10	-10.5	34.1	34.1	9.86	30.7	8.36	27.3	7.01	23.9	5.81
-14.5	-15.0	29.4	29.4	9.45	26.5	8.02	23.5	6.72	20.6	5.57

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	50.0	30.0	5.03	25.0	4.15	20.0	3.42	15.0	2.82
13.0	11.8	50.0	30.0	5.12	25.0	4.21	20.0	3.44	15.0	2.83
11.0	9.8	50.0	30.0	5.23	25.0	4.28	20.0	3.48	15.0	2.83
9.0	7.9	50.0	30.0	5.35	25.0	4.35	20.0	3.52	15.0	2.85
7.0	6.0	50.0	30.0	5.48	25.0	4.44	20.0	3.57	15.0	2.86
5.0	4.1	48.3	29.0	5.40	24.2	4.37	19.3	3.51	14.5	2.82
3.0	2.2	46.6	28.0	5.32	23.3	4.30	18.6	3.46	14.0	2.77
0.0	-0.7	43.9	26.3	5.19	22.0	4.20	17.6	3.37	13.2	2.71
-3.0	-3.7	41.0	24.6	5.06	20.5	4.09	16.4	3.29	12.3	2.64
-5.0	-5.6	39.1	23.5	4.97	19.6	4.03	15.6	3.23	11.7	2.60
-7.0	-7.6	37.1	22.3	4.89	18.6	3.96	14.8	3.18	11.1	2.55
-10	-10.5	34.1	20.5	4.76	17.1	3.85	13.6	3.09	10.2	2.48
-14.5	-15.0	29.4	17.6	4.56	14.7	3.69	11.8	2.97	8.82	2.38

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP1814FT8-E (18HP, 50.4kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	46.9	46.9	13.4	42.2	11.1	37.5	9.08	32.8	7.32	
39 °C	47.7	47.7	13.2	42.9	11.0	38.2	8.94	33.4	7.21	
37 °C	49.1	49.1	12.8	44.2	10.6	39.3	8.67	34.4	6.99	
35 °C	50.4	50.4	12.5	45.4	10.3	40.3	8.40	35.3	6.77	
33 °C	50.4	50.4	11.5	45.4	9.55	40.3	7.81	35.3	6.31	
31 °C	50.4	50.4	10.7	45.4	8.88	40.3	7.28	35.3	5.90	
30 °C	50.4	50.4	10.3	45.4	8.57	40.3	7.03	35.3	5.71	
29 °C	50.4	50.4	9.97	45.4	8.28	40.3	6.80	35.3	5.53	
27 °C	50.4	50.4	9.30	45.4	7.74	40.3	6.37	35.3	5.19	
25 °C	50.4	50.4	8.69	45.4	7.24	40.3	5.97	35.3	4.87	
23 °C	50.4	50.4	8.13	45.4	6.78	40.3	5.59	35.3	4.58	
21 °C	50.4	50.4	7.96	45.4	6.64	40.3	5.49	35.3	4.50	
20 °C	50.4	50.4	7.89	45.4	6.58	40.3	5.44	35.3	4.47	
19 °C	50.4	50.4	7.82	45.4	6.53	40.3	5.40	35.3	4.44	
17 °C	50.4	50.4	7.69	45.4	6.43	40.3	5.33	35.3	4.38	
15 °C	50.4	50.4	7.59	45.4	6.35	40.3	5.26	35.3	4.33	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	46.9	28.1	5.84	23.5	4.65	18.8	3.74	14.1	3.11	
39 °C	47.7	28.6	5.75	23.9	4.58	19.1	3.68	14.3	3.06	
37 °C	49.1	29.5	5.58	24.6	4.44	19.6	3.57	14.7	2.97	
35 °C	50.4	30.2	5.40	25.2	4.30	20.2	3.46	15.1	2.88	
33 °C	50.4	30.2	5.06	25.2	4.05	20.2	3.28	15.1	2.75	
31 °C	50.4	30.2	4.75	25.2	3.82	20.2	3.11	15.1	2.63	
30 °C	50.4	30.2	4.60	25.2	3.71	20.2	3.04	15.1	2.57	
29 °C	50.4	30.2	4.46	25.2	3.61	20.2	2.96	15.1	2.52	
27 °C	50.4	30.2	4.20	25.2	3.41	20.2	2.81	15.1	2.41	
25 °C	50.4	30.2	3.96	25.2	3.22	20.2	2.67	15.1	2.30	
23 °C	50.4	30.2	3.73	25.2	3.05	20.2	2.53	15.1	2.19	
21 °C	50.4	30.2	3.67	25.2	3.01	20.2	2.51	15.1	2.18	
20 °C	50.4	30.2	3.65	25.2	3.00	20.2	2.51	15.1	2.18	
19 °C	50.4	30.2	3.63	25.2	2.98	20.2	2.50	15.1	2.17	
17 °C	50.4	30.2	3.59	25.2	2.96	20.2	2.48	15.1	2.17	
15 °C	50.4	30.2	3.56	25.2	2.94	20.2	2.47	15.1	2.16	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	56.5	56.5	11.5	50.9	9.79	45.2	8.26	39.6	6.89
13.0	11.8	56.5	56.5	11.8	50.9	10.1	45.2	8.47	39.6	7.05
11.0	9.8	56.5	56.5	12.3	50.9	10.4	45.2	8.72	39.6	7.23
9.0	7.9	56.5	56.5	12.7	50.9	10.7	45.2	8.99	39.6	7.44
7.0	6.0	56.5	56.5	13.2	50.9	11.1	45.2	9.30	39.6	7.66
5.0	4.1	54.6	54.6	13.0	49.1	11.0	43.7	9.15	38.2	7.55
3.0	2.2	52.6	52.6	12.8	47.3	10.8	42.1	9.01	36.8	7.43
0.0	-0.7	49.6	49.6	12.5	44.6	10.5	39.7	8.80	34.7	7.25
-3.0	-3.7	46.3	46.3	12.2	41.7	10.3	37.0	8.57	32.4	7.07
-5.0	-5.6	44.2	44.2	12.0	39.8	10.1	35.4	8.43	30.9	6.95
-7.0	-7.6	41.9	41.9	11.7	37.7	9.92	33.5	8.28	29.3	6.83
-10	-10.5	38.6	38.6	11.4	34.7	9.66	30.9	8.07	27.0	6.65
-14.5	-15.0	33.2	33.2	11.0	29.9	9.26	26.6	7.73	23.2	6.38

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	56.5	33.9	5.70	28.3	4.68	22.6	3.83	17.0	3.15
13.0	11.8	56.5	33.9	5.81	28.3	4.75	22.6	3.86	17.0	3.16
11.0	9.8	56.5	33.9	5.94	28.3	4.83	22.6	3.90	17.0	3.17
9.0	7.9	56.5	33.9	6.08	28.3	4.92	22.6	3.95	17.0	3.18
7.0	6.0	56.5	33.9	6.24	28.3	5.02	22.6	4.01	17.0	3.20
5.0	4.1	54.6	32.8	6.14	27.3	4.94	21.8	3.95	16.4	3.15
3.0	2.2	52.6	31.6	6.05	26.3	4.87	21.0	3.89	15.8	3.10
0.0	-0.7	49.6	29.8	5.90	24.8	4.75	19.8	3.79	14.9	3.03
-3.0	-3.7	46.3	27.8	5.75	23.2	4.63	18.5	3.70	13.9	2.95
-5.0	-5.6	44.2	26.5	5.66	22.1	4.55	17.7	3.64	13.3	2.90
-7.0	-7.6	41.9	25.1	5.56	21.0	4.47	16.8	3.57	12.6	2.85
-10	-10.5	38.6	23.2	5.41	19.3	4.36	15.4	3.48	11.6	2.78
-14.5	-15.0	33.2	19.9	5.19	16.6	4.18	13.3	3.33	9.96	2.66

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP2014FT8-E (20HP, 56kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	52.1	52.1	15.7	46.9	12.9	41.7	10.5	36.5	8.36	
39 °C	52.9	52.9	15.5	47.6	12.7	42.3	10.3	37.0	8.24	
37 °C	54.5	54.5	15.0	49.1	12.3	43.6	10.0	38.2	7.99	
35 °C	56.0	56.0	14.6	50.4	12.0	44.8	9.69	39.2	7.74	
33 °C	56.0	56.0	13.5	50.4	11.1	44.8	8.99	39.2	7.21	
31 °C	56.0	56.0	12.5	50.4	10.3	44.8	8.37	39.2	6.73	
30 °C	56.0	56.0	12.0	50.4	9.93	44.8	8.08	39.2	6.51	
29 °C	56.0	56.0	11.6	50.4	9.58	44.8	7.81	39.2	6.29	
27 °C	56.0	56.0	10.8	50.4	8.94	44.8	7.30	39.2	5.90	
25 °C	56.0	56.0	10.1	50.4	8.36	44.8	6.84	39.2	5.53	
23 °C	56.0	56.0	9.45	50.4	7.82	44.8	6.40	39.2	5.20	
21 °C	56.0	56.0	9.24	50.4	7.66	44.8	6.28	39.2	5.11	
20 °C	56.0	56.0	9.15	50.4	7.59	44.8	6.23	39.2	5.06	
19 °C	56.0	56.0	9.07	50.4	7.52	44.8	6.18	39.2	5.03	
17 °C	56.0	56.0	8.92	50.4	7.41	44.8	6.09	39.2	4.96	
15 °C	56.0	56.0	8.79	50.4	7.31	44.8	6.01	39.2	4.90	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	52.1	31.3	6.61	26.1	5.21	20.8	4.15	15.6	3.45	
39 °C	52.9	31.7	6.51	26.5	5.13	21.2	4.09	15.9	3.40	
37 °C	54.5	32.7	6.31	27.3	4.97	21.8	3.97	16.4	3.30	
35 °C	56.0	33.6	6.12	28.0	4.82	22.4	3.84	16.8	3.19	
33 °C	56.0	33.6	5.72	28.0	4.53	22.4	3.65	16.8	3.06	
31 °C	56.0	33.6	5.36	28.0	4.27	22.4	3.46	16.8	2.93	
30 °C	56.0	33.6	5.19	28.0	4.15	22.4	3.37	16.8	2.86	
29 °C	56.0	33.6	5.03	28.0	4.03	22.4	3.29	16.8	2.80	
27 °C	56.0	33.6	4.73	28.0	3.81	22.4	3.12	16.8	2.67	
25 °C	56.0	33.6	4.46	28.0	3.60	22.4	2.96	16.8	2.55	
23 °C	56.0	33.6	4.19	28.0	3.40	22.4	2.81	16.8	2.43	
21 °C	56.0	33.6	4.13	28.0	3.36	22.4	2.79	16.8	2.42	
20 °C	56.0	33.6	4.10	28.0	3.34	22.4	2.78	16.8	2.42	
19 °C	56.0	33.6	4.08	28.0	3.33	22.4	2.77	16.8	2.42	
17 °C	56.0	33.6	4.03	28.0	3.30	22.4	2.76	16.8	2.41	
15 °C	56.0	33.6	3.99	28.0	3.27	22.4	2.74	16.8	2.40	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	63.0	63.0	13.0	56.7	11.0	50.4	9.27	44.1	7.70
13.0	11.8	63.0	63.0	13.4	56.7	11.4	50.4	9.52	44.1	7.88
11.0	9.8	63.0	63.0	13.9	56.7	11.7	50.4	9.81	44.1	8.10
9.0	7.9	63.0	63.0	14.4	56.7	12.2	50.4	10.1	44.1	8.33
7.0	6.0	63.0	63.0	15.0	56.7	12.6	50.4	10.5	44.1	8.60
5.0	4.1	60.9	60.9	14.8	54.8	12.4	48.7	10.3	42.6	8.47
3.0	2.2	58.7	58.7	14.5	52.8	12.2	47.0	10.2	41.1	8.34
0.0	-0.7	55.3	55.3	14.2	49.8	11.9	44.2	9.92	38.7	8.14
-3.0	-3.7	51.6	51.6	13.8	46.4	11.6	41.3	9.67	36.1	7.93
-5.0	-5.6	49.3	49.3	13.6	44.4	11.4	39.4	9.51	34.5	7.80
-7.0	-7.6	46.8	46.8	13.4	42.1	11.2	37.4	9.35	32.8	7.66
-10	-10.5	43.0	43.0	13.0	38.7	11.0	34.4	9.10	30.1	7.46
-14.5	-15.0	37.0	37.0	12.5	33.3	10.5	29.6	8.73	25.9	7.16

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	63.0	37.8	6.33	31.5	5.17	25.2	4.21	18.9	3.45
13.0	11.8	63.0	37.8	6.46	31.5	5.25	25.2	4.25	18.9	3.46
11.0	9.8	63.0	37.8	6.61	31.5	5.34	25.2	4.29	18.9	3.47
9.0	7.9	63.0	37.8	6.77	31.5	5.44	25.2	4.35	18.9	3.49
7.0	6.0	63.0	37.8	6.96	31.5	5.56	25.2	4.41	18.9	3.51
5.0	4.1	60.9	37.8	6.85	30.5	5.48	24.4	4.35	18.3	3.46
3.0	2.2	58.7	35.2	6.75	29.4	5.39	23.5	4.28	17.6	3.40
0.0	-0.7	55.3	33.2	6.59	27.7	5.27	22.1	4.18	16.6	3.32
-3.0	-3.7	51.6	31.0	6.42	25.8	5.13	20.6	4.07	15.5	3.24
-5.0	-5.6	49.3	29.6	6.31	24.7	5.05	19.7	4.00	14.8	3.18
-7.0	-7.6	46.8	28.1	6.20	23.4	4.96	18.7	3.93	14.0	3.13
-10	-10.5	43.0	25.8	6.04	21.5	4.83	17.2	3.83	12.9	3.05
-14.5	-15.0	37.0	22.2	5.79	18.5	4.63	14.8	3.67	11.1	2.92

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP2214FT8-E (22HP, 61.5kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		90% Capacity		80% Capacity		70% Capacity			
	TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
40 °C	57.2	57.2	16.9	51.5	13.9	45.8	11.2	40.0	8.96	
39 °C	58.2	58.2	16.7	52.4	13.7	46.6	11.1	40.7	8.83	
37 °C	59.9	59.9	16.2	53.9	13.3	47.9	10.7	41.9	8.56	
35 °C	61.5	61.5	15.7	55.4	12.8	49.2	10.4	43.1	8.30	
33 °C	61.5	61.5	14.5	55.4	11.9	49.2	9.64	43.1	7.72	
31 °C	61.5	61.5	13.4	55.4	11.0	49.2	8.97	43.1	7.21	
30 °C	61.5	61.5	12.9	55.4	10.7	49.2	8.67	43.1	6.97	
29 °C	61.5	61.5	12.5	55.4	10.3	49.2	8.37	43.1	6.75	
27 °C	61.5	61.5	11.6	55.4	9.60	49.2	7.83	43.1	6.32	
25 °C	61.5	61.5	10.9	55.4	8.97	49.2	7.33	43.1	5.93	
23 °C	61.5	61.5	10.1	55.4	8.39	49.2	6.87	43.1	5.57	
21 °C	61.5	61.5	9.93	55.4	8.22	49.2	6.73	43.1	5.47	
20 °C	61.5	61.5	9.83	55.4	8.14	49.2	6.67	43.1	5.43	
19 °C	61.5	61.5	9.74	55.4	8.07	49.2	6.62	43.1	5.39	
17 °C	61.5	61.5	9.58	55.4	7.94	49.2	6.52	43.1	5.32	
15 °C	61.5	61.5	9.44	55.4	7.83	49.2	6.44	43.1	5.26	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		50% Capacity		40% Capacity		30% Capacity			
	TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
40 °C	57.2	34.3	7.09	28.6	5.60	22.9	4.49	17.2	3.78	
39 °C	58.2	34.9	6.98	29.1	5.51	23.3	4.43	17.5	3.72	
37 °C	59.9	35.9	6.77	30.0	5.35	24.0	4.29	18.0	3.61	
35 °C	61.5	36.9	6.56	30.8	5.18	24.6	4.16	18.5	3.49	
33 °C	61.5	36.9	6.13	30.8	4.87	24.6	3.94	18.5	3.35	
31 °C	61.5	36.9	5.75	30.8	4.60	24.6	3.75	18.5	3.20	
30 °C	61.5	36.9	5.57	30.8	4.47	24.6	3.65	18.5	3.13	
29 °C	61.5	36.9	5.40	30.8	4.34	24.6	3.56	18.5	3.07	
27 °C	61.5	36.9	5.08	30.8	4.10	24.6	3.39	18.5	2.93	
25 °C	61.5	36.9	4.78	30.8	3.88	24.6	3.22	18.5	2.80	
23 °C	61.5	36.9	4.50	30.8	3.66	24.6	3.05	18.5	2.67	
21 °C	61.5	36.9	4.44	30.8	3.62	24.6	3.03	18.5	2.66	
20 °C	61.5	36.9	4.41	30.8	3.60	24.6	3.02	18.5	2.66	
19 °C	61.5	36.9	4.38	30.8	3.59	24.6	3.01	18.5	2.66	
17 °C	61.5	36.9	4.33	30.8	3.55	24.6	2.99	18.5	2.65	
15 °C	61.5	36.9	4.29	30.8	3.53	24.6	2.98	18.5	2.64	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	69.0	69.0	14.4	62.1	12.2	55.2	10.2	48.3	8.47
13.0	11.8	69.0	69.0	14.8	62.1	12.5	55.2	10.5	48.3	8.67
11.0	9.8	69.0	69.0	15.3	62.1	12.9	55.2	10.8	48.3	8.91
9.0	7.9	69.0	69.0	15.9	62.1	13.4	55.2	11.2	48.3	9.17
7.0	6.0	69.0	69.0	16.6	62.1	13.9	55.2	11.6	48.3	9.47
5.0	4.1	66.7	66.7	16.3	60.0	13.7	53.4	11.4	46.7	9.32
3.0	2.2	64.3	64.3	16.0	57.9	13.5	51.4	11.2	45.0	9.18
0.0	-0.7	60.5	60.5	15.7	54.5	13.2	48.4	10.9	42.4	8.96
-3.0	-3.7	56.6	56.6	15.3	50.9	12.8	45.3	10.7	39.6	8.73
-5.0	-5.6	54.0	54.0	15.0	48.6	12.6	43.2	10.5	37.8	8.59
-7.0	-7.6	51.2	51.2	14.7	46.1	12.4	41.0	10.3	35.8	8.44
-10	-10.5	47.1	47.1	14.4	42.4	12.1	37.7	10.0	33.0	8.22
-14.5	-15.0	40.6	40.6	13.8	36.5	11.6	32.5	9.61	28.4	7.88

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	69.0	41.4	6.97	34.5	5.69	27.6	4.64	20.7	3.82
13.0	11.8	69.0	41.4	7.10	34.5	5.77	27.6	4.68	20.7	3.82
11.0	9.8	69.0	41.4	7.27	34.5	5.87	27.6	4.73	20.7	3.83
9.0	7.9	69.0	41.4	7.45	34.5	5.99	27.6	4.79	20.7	3.85
7.0	6.0	69.0	41.4	7.66	34.5	6.12	27.6	4.86	20.7	3.87
5.0	4.1	66.7	40.0	7.54	33.4	6.03	26.7	4.78	20.0	3.81
3.0	2.2	64.3	38.6	7.42	32.2	5.93	25.7	4.71	19.3	3.75
0.0	-0.7	60.5	36.3	7.25	30.3	5.79	24.2	4.60	18.2	3.66
-3.0	-3.7	56.6	34.0	7.06	28.3	5.64	22.6	4.48	17.0	3.57
-5.0	-5.6	54.0	32.4	6.95	27.0	5.55	21.6	4.41	16.2	3.51
-7.0	-7.6	51.2	30.7	6.82	25.6	5.45	20.5	4.33	15.4	3.45
-10	-10.5	47.1	28.3	6.65	23.6	5.31	18.8	4.22	14.1	3.36
-14.5	-15.0	40.6	24.4	6.37	20.3	5.09	16.2	4.04	12.2	3.22

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP2414FT8-E (24HP, 68kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		90% Capacity		80% Capacity		70% Capacity			
	TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
40 °C	63.3	63.3	20.1	57.0	16.5	50.6	13.5	44.3	10.8	
39 °C	64.3	64.3	19.8	57.9	16.3	51.4	13.3	45.0	10.7	
37 °C	66.2	66.2	19.2	59.6	15.8	53.0	12.9	46.3	10.3	
35 °C	68.0	68.0	18.6	61.2	15.3	54.4	12.5	47.6	10.0	
33 °C	68.0	68.0	17.2	61.2	14.2	54.4	11.6	47.6	9.32	
31 °C	68.0	68.0	16.0	61.2	13.2	54.4	10.8	47.6	8.72	
30 °C	68.0	68.0	15.4	61.2	12.7	54.4	10.4	47.6	8.43	
29 °C	68.0	68.0	14.8	61.2	12.3	54.4	10.1	47.6	8.16	
27 °C	68.0	68.0	13.8	61.2	11.5	54.4	9.42	47.6	7.66	
25 °C	68.0	68.0	12.9	61.2	10.7	54.4	8.82	47.6	7.19	
23 °C	68.0	68.0	12.1	61.2	10.0	54.4	8.27	47.6	6.75	
21 °C	68.0	68.0	11.8	61.2	9.85	54.4	8.12	47.6	6.64	
20 °C	68.0	68.0	11.7	61.2	9.76	54.4	8.05	47.6	6.59	
19 °C	68.0	68.0	11.6	61.2	9.67	54.4	7.98	47.6	6.54	
17 °C	68.0	68.0	11.4	61.2	9.53	54.4	7.87	47.6	6.46	
15 °C	68.0	68.0	11.3	61.2	9.40	54.4	7.77	47.6	6.39	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		50% Capacity		40% Capacity		30% Capacity			
	TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
40 °C	63.3	38.0	8.61	31.7	6.86	25.3	5.55	19.0	4.69	
39 °C	64.3	38.6	8.49	32.2	6.76	25.7	5.47	19.3	4.62	
37 °C	66.2	39.7	8.23	33.1	6.55	26.5	5.30	19.9	4.48	
35 °C	68.0	40.8	7.97	34.0	6.35	27.2	5.14	20.4	4.34	
33 °C	68.0	40.8	7.46	34.0	5.98	27.2	4.88	20.4	4.15	
31 °C	68.0	40.8	7.00	34.0	5.65	27.2	4.64	20.4	3.98	
30 °C	68.0	40.8	6.79	34.0	5.49	27.2	4.52	20.4	3.89	
29 °C	68.0	40.8	6.59	34.0	5.33	27.2	4.41	20.4	3.81	
27 °C	68.0	40.8	6.20	34.0	5.04	27.2	4.19	20.4	3.64	
25 °C	68.0	40.8	5.84	34.0	4.77	27.2	3.99	20.4	3.48	
23 °C	68.0	40.8	5.50	34.0	4.51	27.2	3.78	20.4	3.32	
21 °C	68.0	40.8	5.42	34.0	4.46	27.2	3.76	20.4	3.31	
20 °C	68.0	40.8	5.39	34.0	4.44	27.2	3.74	20.4	3.30	
19 °C	68.0	40.8	5.36	34.0	4.42	27.2	3.73	20.4	3.30	
17 °C	68.0	40.8	5.30	34.0	4.38	27.2	3.71	20.4	3.29	
15 °C	68.0	40.8	5.25	34.0	4.35	27.2	3.70	20.4	3.28	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	76.5	76.5	17.3	68.9	14.6	61.2	12.1	53.6	10.0
13.0	11.8	76.5	76.5	17.9	68.9	15.0	61.2	12.5	53.6	10.3
11.0	9.8	76.5	76.5	18.6	68.9	15.6	61.2	12.9	53.6	10.6
9.0	7.9	76.5	76.5	19.4	68.9	16.2	61.2	13.3	53.6	10.9
7.0	6.0	76.5	76.5	20.2	68.9	16.8	61.2	13.9	53.6	11.3
5.0	4.1	73.9	73.9	19.9	66.5	16.6	59.1	13.6	51.7	11.1
3.0	2.2	71.3	71.3	19.6	64.2	16.3	57.0	13.4	49.9	10.9
0.0	-0.7	67.1	67.1	19.1	60.4	15.9	53.7	13.1	47.0	10.6
-3.0	-3.7	62.7	62.7	18.6	56.4	15.5	50.2	12.8	43.9	10.4
-5.0	-5.6	59.8	59.8	18.3	53.8	15.3	47.8	12.6	41.9	10.2
-7.0	-7.6	56.8	56.8	18.0	51.1	15.0	45.4	12.3	39.8	10.0
-10	-10.5	52.2	52.2	17.5	47.0	14.6	41.8	12.0	36.5	9.77
-14.5	-15.0	45.0	45.0	16.8	40.5	14.0	36.0	11.5	31.5	9.36

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	76.5	45.9	8.20	38.3	6.70	30.6	5.53	23.0	4.67
13.0	11.8	76.5	45.9	8.36	38.3	6.80	30.6	5.56	23.0	4.66
11.0	9.8	76.5	45.9	8.56	38.3	6.91	30.6	5.61	23.0	4.66
9.0	7.9	76.5	45.9	8.78	38.3	7.05	30.6	5.67	23.0	4.66
7.0	6.0	76.5	45.9	9.03	38.3	7.20	30.6	5.75	23.0	4.68
5.0	4.1	73.9	44.3	8.90	37.0	7.09	29.6	5.66	22.2	4.61
3.0	2.2	71.3	42.8	8.76	35.7	6.98	28.5	5.57	21.4	4.53
0.0	-0.7	67.1	40.3	8.55	33.6	6.81	26.8	5.44	20.1	4.43
-3.0	-3.7	62.7	37.6	8.33	31.4	6.64	25.1	5.30	18.8	4.31
-5.0	-5.6	59.8	35.9	8.20	29.9	6.53	23.9	5.21	17.9	4.24
-7.0	-7.6	56.8	34.1	8.05	28.4	6.42	22.7	5.12	17.0	4.17
-10	-10.5	52.2	31.3	7.84	26.1	6.25	20.9	4.99	15.7	4.06
-14.5	-15.0	45.0	27.0	7.52	22.5	5.99	18.0	4.78	13.5	3.89

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP2614FT8-E (26HP, 73kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	67.9	67.9	21.0	61.1	17.2	54.3	13.9	47.5	11.1	
39 °C	69.0	69.0	20.7	62.1	17.0	55.2	13.7	48.3	10.9	
37 °C	71.1	71.1	20.1	64.0	16.5	56.9	13.3	49.8	10.6	
35 °C	73.0	73.0	19.5	65.7	15.9	58.4	12.9	51.1	10.3	
33 °C	73.0	73.0	18.0	65.7	14.8	58.4	11.9	51.1	9.54	
31 °C	73.0	73.0	16.7	65.7	13.7	58.4	11.1	51.1	8.90	
30 °C	73.0	73.0	16.1	65.7	13.2	58.4	10.7	51.1	8.61	
29 °C	73.0	73.0	15.5	65.7	12.8	58.4	10.4	51.1	8.33	
27 °C	73.0	73.0	14.4	65.7	11.9	58.4	9.68	51.1	7.80	
25 °C	73.0	73.0	13.5	65.7	11.1	58.4	9.06	51.1	7.32	
23 °C	73.0	73.0	12.6	65.7	10.4	58.4	8.49	51.1	6.87	
21 °C	73.0	73.0	12.3	65.7	10.2	58.4	8.32	51.1	6.75	
20 °C	73.0	73.0	12.2	65.7	10.1	58.4	8.25	51.1	6.70	
19 °C	73.0	73.0	12.1	65.7	9.99	58.4	8.18	51.1	6.65	
17 °C	73.0	73.0	11.9	65.7	9.83	58.4	8.06	51.1	6.56	
15 °C	73.0	73.0	11.7	65.7	9.70	58.4	7.96	51.1	6.48	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	67.9	40.7	8.74	34.0	6.89	27.2	5.53	20.4	4.67	
39 °C	69.0	41.4	8.61	34.5	6.79	27.6	5.45	20.7	4.60	
37 °C	71.1	42.7	8.35	35.6	6.58	28.4	5.29	21.3	4.46	
35 °C	73.0	43.8	8.09	36.5	6.38	29.2	5.12	21.9	4.32	
33 °C	73.0	43.8	7.56	36.5	6.00	29.2	4.86	21.9	4.14	
31 °C	73.0	43.8	7.09	36.5	5.66	29.2	4.62	21.9	3.97	
30 °C	73.0	43.8	6.87	36.5	5.50	29.2	4.50	21.9	3.88	
29 °C	73.0	43.8	6.66	36.5	5.34	29.2	4.39	21.9	3.80	
27 °C	73.0	43.8	6.26	36.5	5.05	29.2	4.17	21.9	3.63	
25 °C	73.0	43.8	5.89	36.5	4.77	29.2	3.97	21.9	3.47	
23 °C	73.0	43.8	5.55	36.5	4.51	29.2	3.77	21.9	3.31	
21 °C	73.0	43.8	5.46	36.5	4.46	29.2	3.74	21.9	3.30	
20 °C	73.0	43.8	5.43	36.5	4.44	29.2	3.73	21.9	3.30	
19 °C	73.0	43.8	5.39	36.5	4.41	29.2	3.72	21.9	3.29	
17 °C	73.0	43.8	5.33	36.5	4.38	29.2	3.69	21.9	3.29	
15 °C	73.0	43.8	5.28	36.5	4.34	29.2	3.68	21.9	3.28	

TC : Total Capacity PI : Power Input
 Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	81.5	81.5	18.3	73.4	15.3	65.2	12.6	57.1	10.4
13.0	11.8	81.5	81.5	18.9	73.4	15.8	65.2	13.0	57.1	10.6
11.0	9.8	81.5	81.5	19.6	73.4	16.4	65.2	13.5	57.1	11.0
9.0	7.9	81.5	81.5	20.4	73.4	17.0	65.2	14.0	57.1	11.3
7.0	6.0	81.5	81.5	21.4	73.4	17.7	65.2	14.5	57.1	11.7
5.0	4.1	78.7	78.7	21.0	70.8	17.5	63.0	14.3	55.1	11.5
3.0	2.2	75.9	75.9	20.7	68.3	17.2	60.7	14.1	53.1	11.4
0.0	-0.7	71.5	71.5	20.2	64.4	16.8	57.2	13.7	50.1	11.1
-3.0	-3.7	66.8	66.8	19.7	60.1	16.3	53.4	13.4	46.8	10.8
-5.0	-5.6	63.8	63.8	19.4	57.4	16.1	51.0	13.2	44.7	10.6
-7.0	-7.6	60.5	60.5	19.0	54.5	15.8	48.4	12.9	42.4	10.4
-10	-10.5	55.7	55.7	18.5	50.1	15.4	44.6	12.6	39.0	10.2
-14.5	-15.0	47.9	47.9	17.8	43.1	14.7	38.3	12.1	33.5	9.75

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	81.5	48.9	8.44	40.8	6.86	32.6	5.62	24.5	4.74
13.0	11.8	81.5	48.9	8.62	40.8	6.96	32.6	5.66	24.5	4.73
11.0	9.8	81.5	48.9	8.84	40.8	7.09	32.6	5.72	24.5	4.73
9.0	7.9	81.5	48.9	9.08	40.8	7.23	32.6	5.78	24.5	4.74
7.0	6.0	81.5	48.9	9.35	40.8	7.40	32.6	5.86	24.5	4.75
5.0	4.1	78.7	47.2	9.21	39.4	7.29	31.5	5.78	23.6	4.68
3.0	2.2	75.9	45.5	9.07	38.0	7.17	30.4	5.69	22.8	4.61
0.0	-0.7	71.5	42.9	8.85	35.8	7.00	28.6	5.55	21.5	4.50
-3.0	-3.7	66.8	40.1	8.62	33.4	6.82	26.7	5.41	20.0	4.38
-5.0	-5.6	63.8	38.3	8.48	31.9	6.71	25.5	5.32	19.1	4.31
-7.0	-7.6	60.5	36.3	8.33	30.3	6.59	24.2	5.23	18.2	4.23
-10	-10.5	55.7	33.4	8.12	27.9	6.42	22.3	5.09	16.7	4.12
-14.5	-15.0	47.9	28.7	7.78	24.0	6.15	19.2	4.88	14.4	3.95

TC : Total Capacity PI : Power Input
 Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP2814FT8-E (28HP, 78.5kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	73.1	73.1	23.7	65.8	19.4	58.5	15.6	51.2	12.4	
39 °C	74.2	74.2	23.4	66.8	19.1	59.4	15.4	51.9	12.2	
37 °C	76.4	76.4	22.7	68.8	18.5	61.1	14.9	53.5	11.8	
35 °C	78.5	78.5	22.0	70.7	17.9	62.8	14.4	55.0	11.5	
33 °C	78.5	78.5	20.3	70.7	16.6	62.8	13.4	55.0	10.70	
31 °C	78.5	78.5	18.8	70.7	15.4	62.8	12.4	55.0	9.94	
30 °C	78.5	78.5	18.1	70.7	14.8	62.8	12.0	55.0	9.61	
29 °C	78.5	78.5	17.5	70.7	14.3	62.8	11.6	55.0	9.29	
27 °C	78.5	78.5	16.3	70.7	13.3	62.8	10.8	55.0	8.71	
25 °C	78.5	78.5	15.2	70.7	12.5	62.8	10.1	55.0	8.17	
23 °C	78.5	78.5	14.2	70.7	11.7	62.8	9.49	55.0	7.66	
21 °C	78.5	78.5	13.8	70.7	11.4	62.8	9.30	55.0	7.53	
20 °C	78.5	78.5	13.7	70.7	11.3	62.8	9.22	55.0	7.47	
19 °C	78.5	78.5	13.6	70.7	11.2	62.8	9.14	55.0	7.41	
17 °C	78.5	78.5	13.3	70.7	11.0	62.8	9.00	55.0	7.31	
15 °C	78.5	78.5	13.1	70.7	10.9	62.8	8.89	55.0	7.23	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	73.1	43.9	9.74	36.6	7.69	29.2	6.22	21.9	5.32	
39 °C	74.2	44.5	9.60	37.1	7.58	29.7	6.13	22.3	5.25	
37 °C	76.4	45.8	9.31	38.2	7.35	30.6	5.94	22.9	5.09	
35 °C	78.5	47.1	9.02	39.3	7.12	31.4	5.75	23.6	4.93	
33 °C	78.5	47.1	8.43	39.3	6.70	31.4	5.47	23.6	4.73	
31 °C	78.5	47.1	7.90	39.3	6.32	31.4	5.20	23.6	4.53	
30 °C	78.5	47.1	7.65	39.3	6.14	31.4	5.07	23.6	4.44	
29 °C	78.5	47.1	7.42	39.3	5.97	31.4	4.95	23.6	4.35	
27 °C	78.5	47.1	6.98	39.3	5.65	31.4	4.71	23.6	4.16	
25 °C	78.5	47.1	6.57	39.3	5.34	31.4	4.48	23.6	3.98	
23 °C	78.5	47.1	6.18	39.3	5.05	31.4	4.25	23.6	3.80	
21 °C	78.5	47.1	6.09	39.3	4.99	31.4	4.22	23.6	3.79	
20 °C	78.5	47.1	6.05	39.3	4.97	31.4	4.21	23.6	3.79	
19 °C	78.5	47.1	6.01	39.3	4.94	31.4	4.20	23.6	3.78	
17 °C	78.5	47.1	5.95	39.3	4.90	31.4	4.18	23.6	3.78	
15 °C	78.5	47.1	5.89	39.3	4.87	31.4	4.16	23.6	3.77	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	88.0	88.0	20.7	79.2	17.1	70.4	13.9	61.6	11.3
13.0	11.8	88.0	88.0	21.5	79.2	17.7	70.4	14.4	61.6	11.6
11.0	9.8	88.0	88.0	22.4	79.2	18.4	70.4	15.0	61.6	12.0
9.0	7.9	88.0	88.0	23.5	79.2	19.2	70.4	15.6	61.6	12.4
7.0	6.0	88.0	88.0	24.6	79.2	20.1	70.4	16.2	61.6	12.9
5.0	4.1	85.0	85.0	24.2	76.5	19.8	68.0	16.0	59.5	12.7
3.0	2.2	82.0	82.0	23.9	73.8	19.5	65.6	15.7	57.4	12.5
0.0	-0.7	77.2	77.2	23.3	69.5	19.1	61.8	15.4	54.0	12.2
-3.0	-3.7	72.1	72.1	22.7	64.9	18.6	57.7	15.0	50.5	11.9
-5.0	-5.6	68.8	68.8	22.3	61.9	18.3	55.0	14.7	48.2	11.7
-7.0	-7.6	65.3	65.3	21.9	58.8	17.9	52.2	14.5	45.7	11.5
-10	-10.5	60.1	60.1	21.4	54.1	17.5	48.1	14.1	42.1	11.2
-14.5	-15.0	51.7	51.7	20.5	46.5	16.8	41.4	13.5	36.2	10.7

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	88.0	52.8	9.07	44.0	7.33	35.2	6.06	26.4	5.25
13.0	11.8	88.0	52.8	9.27	44.0	7.44	35.2	6.09	26.4	5.23
11.0	9.8	88.0	52.8	9.53	44.0	7.58	35.2	6.14	26.4	5.21
9.0	7.9	88.0	52.8	9.81	44.0	7.74	35.2	6.20	26.4	5.20
7.0	6.0	88.0	52.8	10.13	44.0	7.92	35.2	6.28	26.4	5.19
5.0	4.1	85.0	51.0	9.98	42.5	7.80	34.0	6.18	25.5	5.12
3.0	2.2	82.0	49.2	9.82	41.0	7.68	32.8	6.09	24.6	5.04
0.0	-0.7	77.2	46.3	9.59	38.6	7.50	30.9	5.94	23.2	4.92
-3.0	-3.7	72.1	43.3	9.35	36.1	7.31	28.8	5.79	21.6	4.79
-5.0	-5.6	68.8	41.3	9.19	34.4	7.19	27.5	5.69	20.6	4.71
-7.0	-7.6	65.3	39.2	9.03	32.7	7.06	26.1	5.59	19.6	4.63
-10	-10.5	60.1	36.1	8.80	30.1	6.88	24.0	5.45	18.0	4.51
-14.5	-15.0	51.7	31.0	8.43	25.9	6.59	20.7	5.22	15.5	4.32

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP3014FT8-E (30HP, 85kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		90% Capacity		80% Capacity		70% Capacity			
	TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
40 °C	79.1	79.1	24.0	71.2	19.8	63.3	16.0	55.4	12.8	
39 °C	80.4	80.4	23.7	72.4	19.5	64.3	15.8	56.3	12.6	
37 °C	82.8	82.8	23.0	74.5	18.9	66.2	15.3	58.0	12.2	
35 °C	85.0	85.0	22.3	76.5	18.3	68.0	14.8	59.5	11.8	
33 °C	85.0	85.0	20.6	76.5	16.9	68.0	13.7	59.5	11.0	
31 °C	85.0	85.0	19.1	76.5	15.7	68.0	12.8	59.5	10.3	
30 °C	85.0	85.0	18.4	76.5	15.2	68.0	12.4	59.5	9.95	
29 °C	85.0	85.0	17.8	76.5	14.7	68.0	11.9	59.5	9.62	
27 °C	85.0	85.0	16.6	76.5	13.7	68.0	11.2	59.5	9.02	
25 °C	85.0	85.0	15.5	76.5	12.8	68.0	10.5	59.5	8.46	
23 °C	85.0	85.0	14.4	76.5	12.0	68.0	9.79	59.5	7.94	
21 °C	85.0	85.0	14.1	76.5	11.7	68.0	9.60	59.5	7.81	
20 °C	85.0	85.0	14.0	76.5	11.6	68.0	9.52	59.5	7.74	
19 °C	85.0	85.0	13.9	76.5	11.5	68.0	9.44	59.5	7.69	
17 °C	85.0	85.0	13.6	76.5	11.3	68.0	9.30	59.5	7.58	
15 °C	85.0	85.0	13.4	76.5	11.2	68.0	9.19	59.5	7.50	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		50% Capacity		40% Capacity		30% Capacity			
	TC (kW)		PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	
40 °C	79.1	47.5	10.1	39.6	7.96	31.6	6.35	23.7	5.28	
39 °C	80.4	48.2	9.96	40.2	7.84	32.2	6.26	24.1	5.20	
37 °C	82.8	49.7	9.65	41.4	7.61	33.1	6.07	24.8	5.04	
35 °C	85.0	51.0	9.35	42.5	7.37	34.0	5.88	25.5	4.88	
33 °C	85.0	51.0	8.74	42.5	6.93	34.0	5.57	25.5	4.67	
31 °C	85.0	51.0	8.20	42.5	6.53	34.0	5.29	25.5	4.47	
30 °C	85.0	51.0	7.94	42.5	6.34	34.0	5.16	25.5	4.37	
29 °C	85.0	51.0	7.70	42.5	6.16	34.0	5.02	25.5	4.28	
27 °C	85.0	51.0	7.24	42.5	5.82	34.0	4.77	25.5	4.09	
25 °C	85.0	51.0	6.81	42.5	5.50	34.0	4.53	25.5	3.90	
23 °C	85.0	51.0	6.41	42.5	5.20	34.0	4.30	25.5	3.72	
21 °C	85.0	51.0	6.32	42.5	5.14	34.0	4.27	25.5	3.71	
20 °C	85.0	51.0	6.27	42.5	5.11	34.0	4.25	25.5	3.70	
19 °C	85.0	51.0	6.23	42.5	5.08	34.0	4.24	25.5	3.69	
17 °C	85.0	51.0	6.16	42.5	5.04	34.0	4.21	25.5	3.68	
15 °C	85.0	51.0	6.10	42.5	5.00	34.0	4.19	25.5	3.67	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	95.0	95.0	19.7	85.5	16.7	76.0	14.0	66.5	11.7
13.0	11.8	95.0	95.0	20.3	85.5	17.2	76.0	14.4	66.5	11.9
11.0	9.8	95.0	95.0	21.0	85.5	17.8	76.0	14.9	66.5	12.3
9.0	7.9	95.0	95.0	21.8	85.5	18.4	76.0	15.3	66.5	12.6
7.0	6.0	95.0	95.0	22.7	85.5	19.1	76.0	15.9	66.5	13.0
5.0	4.1	91.8	91.8	22.4	82.6	18.8	73.4	15.6	64.3	12.8
3.0	2.2	88.5	88.5	22.0	79.7	18.5	70.8	15.4	62.0	12.6
0.0	-0.7	83.3	83.3	21.5	75.0	18.1	66.6	15.0	58.3	12.3
-3.0	-3.7	77.9	77.9	20.9	70.1	17.6	62.3	14.6	54.5	12.0
-5.0	-5.6	74.3	74.3	20.6	66.9	17.3	59.4	14.4	52.0	11.8
-7.0	-7.6	70.5	70.5	20.2	63.5	17.0	56.4	14.1	49.4	11.6
-10	-10.5	64.9	64.9	19.7	58.4	16.6	51.9	13.8	45.4	11.3
-14.5	-15.0	55.8	55.8	18.9	50.2	15.9	44.6	13.2	39.1	10.8

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	95.0	57.0	9.58	47.5	7.82	38.0	6.37	28.5	5.23
13.0	11.8	95.0	57.0	9.77	47.5	7.94	38.0	6.43	28.5	5.23
11.0	9.8	95.0	57.0	10.0	47.5	8.08	38.0	6.50	28.5	5.25
9.0	7.9	95.0	57.0	10.2	47.5	8.24	38.0	6.58	28.5	5.28
7.0	6.0	95.0	57.0	10.5	47.5	8.42	38.0	6.68	28.5	5.31
5.0	4.1	91.8	55.1	10.4	45.9	8.29	36.7	6.58	27.5	5.23
3.0	2.2	88.5	53.1	10.2	44.3	8.16	35.4	6.48	26.6	5.15
0.0	-0.7	83.3	50.0	9.97	41.7	7.97	33.3	6.32	25.0	5.03
-3.0	-3.7	77.9	46.7	9.71	39.0	7.77	31.2	6.16	23.4	4.90
-5.0	-5.6	74.3	44.6	9.55	37.2	7.64	29.7	6.06	22.3	4.82
-7.0	-7.6	70.5	42.3	9.39	35.3	7.50	28.2	5.95	21.2	4.73
-10	-10.5	64.9	38.9	9.14	32.5	7.31	26.0	5.80	19.5	4.61
-14.5	-15.0	55.8	33.5	8.76	27.9	7.00	22.3	5.56	16.7	4.42

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP3214FT8-E (32HP, 90kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	83.8	83.8	25.0	75.4	20.5	67.0	16.6	58.7	13.3	
39 °C	85.1	85.1	24.6	76.6	20.2	68.1	16.4	59.6	13.1	
37 °C	87.6	87.6	23.9	78.8	19.6	70.1	15.9	61.3	12.7	
35 °C	90.0	90.0	23.2	81.0	19.0	72.0	15.4	63.0	12.3	
33 °C	90.0	90.0	21.4	81.0	17.6	72.0	14.3	63.0	11.4	
31 °C	90.0	90.0	19.8	81.0	16.3	72.0	13.3	63.0	10.7	
30 °C	90.0	90.0	19.1	81.0	15.8	72.0	12.8	63.0	10.3	
29 °C	90.0	90.0	18.5	81.0	15.2	72.0	12.4	63.0	9.98	
27 °C	90.0	90.0	17.2	81.0	14.2	72.0	11.6	63.0	9.36	
25 °C	90.0	90.0	16.1	81.0	13.3	72.0	10.8	63.0	8.78	
23 °C	90.0	90.0	15.0	81.0	12.4	72.0	10.2	63.0	8.24	
21 °C	90.0	90.0	14.7	81.0	12.2	72.0	9.97	63.0	8.10	
20 °C	90.0	90.0	14.5	81.0	12.0	72.0	9.88	63.0	8.04	
19 °C	90.0	90.0	14.4	81.0	11.9	72.0	9.80	63.0	7.98	
17 °C	90.0	90.0	14.2	81.0	11.8	72.0	9.65	63.0	7.87	
15 °C	90.0	90.0	14.0	81.0	11.6	72.0	9.53	63.0	7.78	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	83.8	50.3	10.5	41.9	8.27	33.5	6.63	25.1	5.55	
39 °C	85.1	51.1	10.3	42.6	8.15	34.0	6.53	25.5	5.47	
37 °C	87.6	52.6	10.0	43.8	7.91	35.0	6.33	26.3	5.30	
35 °C	90.0	54.0	9.70	45.0	7.66	36.0	6.13	27.0	5.14	
33 °C	90.0	54.0	9.08	45.0	7.21	36.0	5.82	27.0	4.92	
31 °C	90.0	54.0	8.51	45.0	6.79	36.0	5.53	27.0	4.71	
30 °C	90.0	54.0	8.24	45.0	6.60	36.0	5.39	27.0	4.61	
29 °C	90.0	54.0	7.99	45.0	6.41	36.0	5.25	27.0	4.51	
27 °C	90.0	54.0	7.52	45.0	6.06	36.0	4.99	27.0	4.31	
25 °C	90.0	54.0	7.07	45.0	5.73	36.0	4.74	27.0	4.11	
23 °C	90.0	54.0	6.66	45.0	5.41	36.0	4.50	27.0	3.92	
21 °C	90.0	54.0	6.56	45.0	5.35	36.0	4.47	27.0	3.91	
20 °C	90.0	54.0	6.52	45.0	5.32	36.0	4.45	27.0	3.90	
19 °C	90.0	54.0	6.48	45.0	5.30	36.0	4.44	27.0	3.90	
17 °C	90.0	54.0	6.40	45.0	5.25	36.0	4.41	27.0	3.89	
15 °C	90.0	54.0	6.34	45.0	5.21	36.0	4.39	27.0	3.88	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	100.0	100.0	20.7	90.0	17.5	80.0	14.7	70.0	12.2
13.0	11.8	100.0	100.0	21.3	90.0	18.1	80.0	15.1	70.0	12.5
11.0	9.8	100.0	100.0	22.1	90.0	18.7	80.0	15.6	70.0	12.9
9.0	7.9	100.0	100.0	22.9	90.0	19.3	80.0	16.1	70.0	13.2
7.0	6.0	100.0	100.0	23.9	90.0	20.1	80.0	16.7	70.0	13.7
5.0	4.1	96.6	96.6	23.5	86.9	19.8	77.3	16.4	67.6	13.4
3.0	2.2	93.1	93.1	23.1	83.8	19.4	74.5	16.2	65.2	13.2
0.0	-0.7	87.7	87.7	22.6	78.9	19.0	70.2	15.8	61.4	12.9
-3.0	-3.7	82.0	82.0	22.0	73.8	18.5	65.6	15.4	57.4	12.6
-5.0	-5.6	78.2	78.2	21.6	70.4	18.2	62.6	15.1	54.7	12.4
-7.0	-7.6	74.2	74.2	21.3	66.8	17.9	59.4	14.8	51.9	12.2
-10	-10.5	68.3	68.3	20.7	61.5	17.4	54.6	14.5	47.8	11.9
-14.5	-15.0	58.8	58.8	19.8	52.9	16.7	47.0	13.9	41.2	11.4

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	100.0	60.0	10.0	50.0	8.20	40.0	6.69	30.0	5.50
13.0	11.8	100.0	60.0	10.2	50.0	8.32	40.0	6.74	30.0	5.50
11.0	9.8	100.0	60.0	10.5	50.0	8.47	40.0	6.82	30.0	5.52
9.0	7.9	100.0	60.0	10.7	50.0	8.64	40.0	6.90	30.0	5.55
7.0	6.0	100.0	60.0	11.0	50.0	8.83	40.0	7.01	30.0	5.58
5.0	4.1	96.6	58.0	10.9	48.3	8.69	38.6	6.90	29.0	5.49
3.0	2.2	93.1	55.9	10.7	46.6	8.56	37.2	6.79	27.9	5.41
0.0	-0.7	87.7	52.6	10.5	43.9	8.35	35.1	6.63	26.3	5.28
-3.0	-3.7	82.0	49.2	10.2	41.0	8.14	32.8	6.46	24.6	5.15
-5.0	-5.6	78.2	46.9	10.0	39.1	8.01	31.3	6.36	23.5	5.06
-7.0	-7.6	74.2	44.5	9.84	37.1	7.87	29.7	6.24	22.3	4.97
-10	-10.5	68.3	41.0	9.59	34.2	7.66	27.3	6.08	20.5	4.84
-14.5	-15.0	58.8	35.3	9.19	29.4	7.34	23.5	5.83	17.6	4.64

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP3414FT8-E (34HP, 96kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	89.3	89.3	27.9	80.4	22.9	71.4	18.5	62.5	14.8	
39 °C	90.8	90.8	27.5	81.7	22.6	72.6	18.2	63.6	14.5	
37 °C	93.5	93.5	26.7	84.2	21.9	74.8	17.7	65.5	14.1	
35 °C	96.0	96.0	25.9	86.4	21.2	76.8	17.1	67.2	13.7	
33 °C	96.0	96.0	23.9	86.4	19.6	76.8	15.9	67.2	12.7	
31 °C	96.0	96.0	22.2	86.4	18.2	76.8	14.8	67.2	11.9	
30 °C	96.0	96.0	21.4	86.4	17.6	76.8	14.3	67.2	11.5	
29 °C	96.0	96.0	20.6	86.4	17.0	76.8	13.8	67.2	11.1	
27 °C	96.0	96.0	19.2	86.4	15.8	76.8	12.9	67.2	10.4	
25 °C	96.0	96.0	17.9	86.4	14.8	76.8	12.1	67.2	9.76	
23 °C	96.0	96.0	16.7	86.4	13.8	76.8	11.3	67.2	9.16	
21 °C	96.0	96.0	16.4	86.4	13.5	76.8	11.1	67.2	9.00	
20 °C	96.0	96.0	16.2	86.4	13.4	76.8	11.0	67.2	8.93	
19 °C	96.0	96.0	16.1	86.4	13.3	76.8	10.9	67.2	8.86	
17 °C	96.0	96.0	15.8	86.4	13.1	76.8	10.7	67.2	8.74	
15 °C	96.0	96.0	15.6	86.4	12.9	76.8	10.6	67.2	8.64	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	89.3	53.6	11.6	44.7	9.18	35.7	7.36	26.8	6.18	
39 °C	90.8	54.5	11.5	45.4	9.05	36.3	7.25	27.2	6.09	
37 °C	93.5	56.1	11.1	46.8	8.77	37.4	7.03	28.1	5.90	
35 °C	96.0	57.6	10.8	48.0	8.50	38.4	6.81	28.8	5.71	
33 °C	96.0	57.6	10.1	48.0	7.99	38.4	6.46	28.8	5.47	
31 °C	96.0	57.6	9.45	48.0	7.54	38.4	6.14	28.8	5.24	
30 °C	96.0	57.6	9.15	48.0	7.32	38.4	5.98	28.8	5.13	
29 °C	96.0	57.6	8.87	48.0	7.12	38.4	5.83	28.8	5.02	
27 °C	96.0	57.6	8.34	48.0	6.72	38.4	5.54	28.8	4.80	
25 °C	96.0	57.6	7.85	48.0	6.36	38.4	5.27	28.8	4.58	
23 °C	96.0	57.6	7.39	48.0	6.01	38.4	5.00	28.8	4.37	
21 °C	96.0	57.6	7.28	48.0	5.94	38.4	4.96	28.8	4.36	
20 °C	96.0	57.6	7.23	48.0	5.90	38.4	4.94	28.8	4.35	
19 °C	96.0	57.6	7.19	48.0	5.88	38.4	4.93	28.8	4.35	
17 °C	96.0	57.6	7.11	48.0	5.82	38.4	4.90	28.8	4.33	
15 °C	96.0	57.6	7.04	48.0	5.78	38.4	4.88	28.8	4.33	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	108.0	108.0	23.8	97.2	20.0	86.4	16.6	75.6	13.7
13.0	11.8	108.0	108.0	24.6	97.2	20.6	86.4	17.1	75.6	14.1
11.0	9.8	108.0	108.0	25.5	97.2	21.4	86.4	17.7	75.6	14.5
9.0	7.9	108.0	108.0	26.6	97.2	22.2	86.4	18.3	75.6	14.9
7.0	6.0	108.0	108.0	27.7	97.2	23.1	86.4	19.0	75.6	15.4
5.0	4.1	104.3	104.3	27.3	93.9	22.7	83.4	18.7	73.0	15.2
3.0	2.2	100.6	100.6	26.9	90.5	22.4	80.5	18.4	70.4	15.0
0.0	-0.7	94.7	94.7	26.2	85.2	21.9	75.8	18.0	66.3	14.6
-3.0	-3.7	88.5	88.5	25.5	79.7	21.3	70.8	17.5	62.0	14.2
-5.0	-5.6	84.5	84.5	25.1	76.1	21.0	67.6	17.2	59.2	14.0
-7.0	-7.6	80.2	80.2	24.7	72.2	20.6	64.2	16.9	56.1	13.8
-10	-10.5	73.8	73.8	24.0	66.4	20.0	59.0	16.5	51.7	13.4
-14.5	-15.0	63.5	63.5	23.0	57.2	19.2	50.8	15.8	44.5	12.8

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	108.0	64.8	11.2	54.0	9.11	43.2	7.46	32.4	6.22
13.0	11.8	108.0	64.8	11.4	54.0	9.25	43.2	7.51	32.4	6.22
11.0	9.8	108.0	64.8	11.7	54.0	9.42	43.2	7.59	32.4	6.23
9.0	7.9	108.0	64.8	12.0	54.0	9.60	43.2	7.68	32.4	6.24
7.0	6.0	108.0	64.8	12.4	54.0	9.82	43.2	7.79	32.4	6.27
5.0	4.1	104.3	62.6	12.2	52.2	9.67	41.7	7.67	31.3	6.17
3.0	2.2	100.6	60.4	12.0	50.3	9.52	40.2	7.55	30.2	6.08
0.0	-0.7	94.7	56.8	11.7	47.4	9.30	37.9	7.37	28.4	5.93
-3.0	-3.7	88.5	53.1	11.4	44.3	9.06	35.4	7.18	26.6	5.78
-5.0	-5.6	84.5	50.7	11.2	42.3	8.91	33.8	7.07	25.4	5.69
-7.0	-7.6	80.2	48.1	11.0	40.1	8.75	32.1	6.94	24.1	5.59
-10	-10.5	73.8	44.3	10.7	36.9	8.53	29.5	6.76	22.1	5.44
-14.5	-15.0	63.5	38.1	10.3	31.8	8.17	25.4	6.48	19.1	5.22

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP3614FT8-E (36HP, 101kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	94.0	94.0	27.4	84.6	22.4	75.2	18.1	65.8	14.5	
39 °C	95.5	95.5	27.0	86.0	22.1	76.4	17.9	66.9	14.2	
37 °C	98.3	98.3	26.2	88.5	21.4	78.6	17.3	68.8	13.8	
35 °C	101.0	101.0	25.4	90.9	20.8	80.8	16.8	70.7	13.4	
33 °C	101.0	101.0	23.4	90.9	19.2	80.8	15.6	70.7	12.5	
31 °C	101.0	101.0	21.7	90.9	17.8	80.8	14.5	70.7	11.6	
30 °C	101.0	101.0	20.9	90.9	17.2	80.8	14.0	70.7	11.2	
29 °C	101.0	101.0	20.2	90.9	16.6	80.8	13.5	70.7	10.9	
27 °C	101.0	101.0	18.8	90.9	15.5	80.8	12.6	70.7	10.2	
25 °C	101.0	101.0	17.6	90.9	14.5	80.8	11.8	70.7	9.57	
23 °C	101.0	101.0	16.4	90.9	13.5	80.8	11.1	70.7	8.98	
21 °C	101.0	101.0	16.0	90.9	13.3	80.8	10.9	70.7	8.83	
20 °C	101.0	101.0	15.9	90.9	13.1	80.8	10.8	70.7	8.76	
19 °C	101.0	101.0	15.7	90.9	13.0	80.8	10.7	70.7	8.70	
17 °C	101.0	101.0	15.5	90.9	12.8	80.8	10.5	70.7	8.58	
15 °C	101.0	101.0	15.3	90.9	12.6	80.8	10.4	70.7	8.48	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	94.0	56.4	11.4	47.0	9.05	37.6	7.31	28.2	6.21	
39 °C	95.5	57.3	11.3	47.8	8.92	38.2	7.20	28.7	6.12	
37 °C	98.3	59.0	10.9	49.2	8.65	39.3	6.98	29.5	5.93	
35 °C	101.0	60.6	10.6	50.5	8.38	40.4	6.76	30.3	5.75	
33 °C	101.0	60.6	9.90	50.5	7.89	40.4	6.42	30.3	5.51	
31 °C	101.0	60.6	9.28	50.5	7.44	40.4	6.11	30.3	5.28	
30 °C	101.0	60.6	8.99	50.5	7.23	40.4	5.96	30.3	5.17	
29 °C	101.0	60.6	8.72	50.5	7.03	40.4	5.81	30.3	5.06	
27 °C	101.0	60.6	8.20	50.5	6.65	40.4	5.52	30.3	4.84	
25 °C	101.0	60.6	7.72	50.5	6.28	40.4	5.25	30.3	4.63	
23 °C	101.0	60.6	7.27	50.5	5.94	40.4	4.99	30.3	4.42	
21 °C	101.0	60.6	7.17	50.5	5.87	40.4	4.95	30.3	4.40	
20 °C	101.0	60.6	7.12	50.5	5.85	40.4	4.94	30.3	4.40	
19 °C	101.0	60.6	7.08	50.5	5.82	40.4	4.92	30.3	4.39	
17 °C	101.0	60.6	7.00	50.5	5.77	40.4	4.90	30.3	4.38	
15 °C	101.0	60.6	6.93	50.5	5.73	40.4	4.88	30.3	4.37	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)								
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity	100% Capacity		90% Capacity		80% Capacity		70% Capacity	
				TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	113.0	113.0	23.7	101.7	20.1	90.4	16.8	79.1	14.0	
13.0	11.8	113.0	113.0	24.5	101.7	20.7	90.4	17.3	79.1	14.3	
11.0	9.8	113.0	113.0	25.3	101.7	21.4	90.4	17.8	79.1	14.7	
9.0	7.9	113.0	113.0	26.3	101.7	22.1	90.4	18.4	79.1	15.1	
7.0	6.0	113.0	113.0	27.4	101.7	23.0	90.4	19.1	79.1	15.6	
5.0	4.1	109.2	109.2	26.9	98.3	22.6	87.4	18.8	76.4	15.4	
3.0	2.2	105.2	105.2	26.5	94.7	22.3	84.2	18.5	73.6	15.1	
0.0	-0.7	99.1	99.1	25.9	89.2	21.7	79.3	18.0	69.4	14.8	
-3.0	-3.7	92.6	92.6	25.2	83.3	21.2	74.1	17.6	64.8	14.4	
-5.0	-5.6	88.4	88.4	24.8	79.6	20.8	70.7	17.3	61.9	14.2	
-7.0	-7.6	83.9	83.9	24.4	75.5	20.5	67.1	17.0	58.7	13.9	
-10	-10.5	77.2	77.2	23.7	69.5	19.9	61.8	16.5	54.0	13.5	
-14.5	-15.0	66.4	66.4	22.8	59.8	19.1	53.1	15.9	46.5	13.0	

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)								
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity	60% Capacity		50% Capacity		40% Capacity		30% Capacity	
				TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	113.0	67.8	11.5	56.5	9.37	45.2	7.65	33.9	6.32	
13.0	11.8	113.0	67.8	11.7	56.5	9.51	45.2	7.72	33.9	6.32	
11.0	9.8	113.0	67.8	12.0	56.5	9.68	45.2	7.80	33.9	6.34	
9.0	7.9	113.0	67.8	12.3	56.5	9.87	45.2	7.90	33.9	6.37	
7.0	6.0	113.0	67.8	12.6	56.5	10.1	45.2	8.01	33.9	6.40	
5.0	4.1	109.2	65.5	12.4	54.6	9.93	43.7	7.89	32.8	6.30	
3.0	2.2	105.2	63.1	12.2	52.6	9.78	42.1	7.77	31.6	6.21	
0.0	-0.7	99.1	59.5	11.9	49.6	9.54	39.6	7.58	29.7	6.06	
-3.0	-3.7	92.6	55.6	11.6	46.3	9.30	37.0	7.39	27.8	5.90	
-5.0	-5.6	88.4	53.0	11.4	44.2	9.15	35.4	7.27	26.5	5.81	
-7.0	-7.6	83.9	50.3	11.2	42.0	8.99	33.6	7.14	25.2	5.70	
-10	-10.5	77.2	46.3	10.9	38.6	8.75	30.9	6.95	23.2	5.56	
-14.5	-15.0	66.4	39.8	10.5	33.2	8.39	26.6	6.67	19.9	5.33	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP3814FT8-E (38HP, 106.5kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	99.1	99.1	30.1	89.2	24.6	79.3	19.9	69.4	15.8	
39 °C	100.7	100.7	29.6	90.6	24.2	80.6	19.6	70.5	15.6	
37 °C	103.7	103.7	28.7	93.3	23.5	83.0	19.0	72.6	15.1	
35 °C	106.5	106.5	27.9	95.9	22.8	85.2	18.4	74.6	14.6	
33 °C	106.5	106.5	25.7	95.9	21.1	85.2	17.0	74.6	13.6	
31 °C	106.5	106.5	23.8	95.9	19.6	85.2	15.9	74.6	12.7	
30 °C	106.5	106.5	23.0	95.9	18.9	85.2	15.3	74.6	12.3	
29 °C	106.5	106.5	22.2	95.9	18.2	85.2	14.8	74.6	11.9	
27 °C	106.5	106.5	20.6	95.9	17.0	85.2	13.8	74.6	11.1	
25 °C	106.5	106.5	19.3	95.9	15.9	85.2	12.9	74.6	10.5	
23 °C	106.5	106.5	18.0	95.9	14.8	85.2	12.1	74.6	9.82	
21 °C	106.5	106.5	17.6	95.9	14.5	85.2	11.9	74.6	9.65	
20 °C	106.5	106.5	17.4	95.9	14.4	85.2	11.8	74.6	9.57	
19 °C	106.5	106.5	17.3	95.9	14.3	85.2	11.7	74.6	9.50	
17 °C	106.5	106.5	17.0	95.9	14.0	85.2	11.5	74.6	9.37	
15 °C	106.5	106.5	16.7	95.9	13.8	85.2	11.4	74.6	9.27	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	99.1	59.5	12.5	49.6	9.88	39.6	7.98	29.7	6.80	
39 °C	100.7	60.4	12.3	50.4	9.73	40.3	7.86	30.2	6.70	
37 °C	103.7	62.2	11.9	51.9	9.44	41.5	7.62	31.1	6.49	
35 °C	106.5	63.9	11.6	53.3	9.14	42.6	7.38	32.0	6.29	
33 °C	106.5	63.9	10.8	53.3	8.61	42.6	7.01	32.0	6.03	
31 °C	106.5	63.9	10.1	53.3	8.12	42.6	6.67	32.0	5.78	
30 °C	106.5	63.9	9.82	53.3	7.89	42.6	6.50	32.0	5.66	
29 °C	106.5	63.9	9.52	53.3	7.67	42.6	6.34	32.0	5.54	
27 °C	106.5	63.9	8.96	53.3	7.25	42.6	6.03	32.0	5.30	
25 °C	106.5	63.9	8.43	53.3	6.86	42.6	5.74	32.0	5.07	
23 °C	106.5	63.9	7.94	53.3	6.48	42.6	5.45	32.0	4.84	
21 °C	106.5	63.9	7.82	53.3	6.41	42.6	5.41	32.0	4.83	
20 °C	106.5	63.9	7.77	53.3	6.38	42.6	5.40	32.0	4.82	
19 °C	106.5	63.9	7.72	53.3	6.35	42.6	5.38	32.0	4.82	
17 °C	106.5	63.9	7.64	53.3	6.30	42.6	5.35	32.0	4.81	
15 °C	106.5	63.9	7.56	53.3	6.25	42.6	5.33	32.0	4.80	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	119.5	119.5	26.3	107.6	22.1	95.6	18.3	83.7	15.1
13.0	11.8	119.5	119.5	27.2	107.6	22.8	95.6	18.9	83.7	15.5
11.0	9.8	119.5	119.5	28.2	107.6	23.6	95.6	19.5	83.7	15.9
9.0	7.9	119.5	119.5	29.3	107.6	24.5	95.6	20.2	83.7	16.4
7.0	6.0	119.5	119.5	30.6	107.6	25.5	95.6	21.0	83.7	17.0
5.0	4.1	115.4	115.4	30.1	103.9	25.1	92.3	20.6	80.8	16.7
3.0	2.2	111.3	111.3	29.7	100.2	24.7	89.0	20.3	77.9	16.5
0.0	-0.7	104.8	104.8	29.0	94.3	24.1	83.8	19.8	73.4	16.1
-3.0	-3.7	98.0	98.0	28.2	88.2	23.5	78.4	19.3	68.6	15.7
-5.0	-5.6	93.5	93.5	27.8	84.2	23.1	74.8	19.0	65.5	15.4
-7.0	-7.6	88.7	88.7	27.3	79.8	22.7	71.0	18.7	62.1	15.1
-10	-10.5	81.6	81.6	26.6	73.4	22.1	65.3	18.2	57.1	14.7
-14.5	-15.0	70.2	70.2	25.5	63.2	21.2	56.2	17.4	49.1	14.1

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	119.5	71.7	12.3	59.8	10.0	47.8	8.22	35.9	6.89
13.0	11.8	119.5	71.7	12.6	59.8	10.2	47.8	8.28	35.9	6.88
11.0	9.8	119.5	71.7	12.9	59.8	10.4	47.8	8.36	35.9	6.89
9.0	7.9	119.5	71.7	13.2	59.8	10.6	47.8	8.46	35.9	6.90
7.0	6.0	119.5	71.7	13.6	59.8	10.8	47.8	8.58	35.9	6.93
5.0	4.1	115.4	69.2	13.4	57.7	10.6	46.2	8.45	34.6	6.82
3.0	2.2	111.3	66.8	13.2	55.7	10.5	44.5	8.32	33.4	6.72
0.0	-0.7	104.8	62.9	12.9	52.4	10.2	41.9	8.12	31.4	6.56
-3.0	-3.7	98.0	58.8	12.6	49.0	10.0	39.2	7.91	29.4	6.39
-5.0	-5.6	93.5	56.1	12.3	46.8	9.80	37.4	7.78	28.1	6.29
-7.0	-7.6	88.7	53.2	12.1	44.4	9.63	35.5	7.64	26.6	6.17
-10	-10.5	81.6	49.0	11.8	40.8	9.38	32.6	7.45	24.5	6.01
-14.5	-15.0	70.2	42.1	11.3	35.1	8.99	28.1	7.14	21.1	5.76

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP4014FT8-E (40HP, 112kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	104.2	104.2	32.8	93.8	26.8	83.4	21.6	72.9	17.2	
39 °C	105.9	105.9	32.4	95.3	26.4	84.7	21.3	74.1	16.9	
37 °C	109.1	109.1	31.4	98.2	25.6	87.3	20.7	76.4	16.4	
35 °C	112.0	112.0	30.4	100.8	24.8	89.6	20.0	78.4	15.9	
33 °C	112.0	112.0	28.1	100.8	23.0	89.6	18.5	78.4	14.8	
31 °C	112.0	112.0	26.0	100.8	21.3	89.6	17.3	78.4	13.8	
30 °C	112.0	112.0	25.1	100.8	20.6	89.6	16.7	78.4	13.4	
29 °C	112.0	112.0	24.2	100.8	19.8	89.6	16.1	78.4	12.9	
27 °C	112.0	112.0	22.5	100.8	18.5	89.6	15.0	78.4	12.1	
25 °C	112.0	112.0	21.0	100.8	17.3	89.6	14.1	78.4	11.4	
23 °C	112.0	112.0	19.6	100.8	16.2	89.6	13.2	78.4	10.7	
21 °C	112.0	112.0	19.2	100.8	15.8	89.6	12.9	78.4	10.5	
20 °C	112.0	112.0	19.0	100.8	15.7	89.6	12.8	78.4	10.4	
19 °C	112.0	112.0	18.8	100.8	15.5	89.6	12.7	78.4	10.3	
17 °C	112.0	112.0	18.5	100.8	15.3	89.6	12.5	78.4	10.2	
15 °C	112.0	112.0	18.2	100.8	15.1	89.6	12.3	78.4	10.1	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	104.2	62.5	13.6	52.1	10.7	41.7	8.66	31.3	7.39	
39 °C	105.9	63.5	13.4	53.0	10.6	42.4	8.53	31.8	7.28	
37 °C	109.1	65.5	12.9	54.6	10.2	43.6	8.27	32.7	7.06	
35 °C	112.0	67.2	12.5	56.0	9.91	44.8	8.01	33.6	6.84	
33 °C	112.0	67.2	11.7	56.0	9.33	44.8	7.61	33.6	6.56	
31 °C	112.0	67.2	11.0	56.0	8.80	44.8	7.23	33.6	6.29	
30 °C	112.0	67.2	10.7	56.0	8.55	44.8	7.06	33.6	6.16	
29 °C	112.0	67.2	10.3	56.0	8.32	44.8	6.88	33.6	6.03	
27 °C	112.0	67.2	9.71	56.0	7.86	44.8	6.55	33.6	5.77	
25 °C	112.0	67.2	9.14	56.0	7.43	44.8	6.23	33.6	5.52	
23 °C	112.0	67.2	8.61	56.0	7.03	44.8	5.92	33.6	5.27	
21 °C	112.0	67.2	8.48	56.0	6.95	44.8	5.88	33.6	5.26	
20 °C	112.0	67.2	8.43	56.0	6.92	44.8	5.86	33.6	5.25	
19 °C	112.0	67.2	8.37	56.0	6.88	44.8	5.84	33.6	5.25	
17 °C	112.0	67.2	8.28	56.0	6.83	44.8	5.81	33.6	5.24	
15 °C	112.0	67.2	8.20	56.0	6.78	44.8	5.79	33.6	5.23	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	127.0	127.0	29.1	114.3	24.2	101.6	20.0	88.9	16.3
13.0	11.8	127.0	127.0	30.2	114.3	25.1	101.6	20.6	88.9	16.7
11.0	9.8	127.0	127.0	31.4	114.3	26.0	101.6	21.3	88.9	17.3
9.0	7.9	127.0	127.0	32.7	114.3	27.1	101.6	22.1	88.9	17.8
7.0	6.0	127.0	127.0	34.3	114.3	28.3	101.6	23.0	88.9	18.5
5.0	4.1	122.7	122.7	33.7	110.4	27.9	98.2	22.7	85.9	18.2
3.0	2.2	118.3	118.3	33.2	106.5	27.4	94.6	22.3	82.8	17.9
0.0	-0.7	111.4	111.4	32.4	100.3	26.8	89.1	21.8	78.0	17.5
-3.0	-3.7	104.1	104.1	31.6	93.7	26.1	83.3	21.2	72.9	17.1
-5.0	-5.6	99.4	99.4	31.1	89.5	25.7	79.5	20.9	69.6	16.8
-7.0	-7.6	94.3	94.3	30.5	84.9	25.2	75.4	20.5	66.0	16.5
-10	-10.5	86.7	86.7	29.7	78.0	24.5	69.4	20.0	60.7	16.1
-14.5	-15.0	74.6	74.6	28.5	67.1	23.5	59.7	19.2	52.2	15.4

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	127.0	76.2	13.2	63.5	10.7	50.8	8.82	38.1	7.51
13.0	11.8	127.0	76.2	13.5	63.5	10.9	50.8	8.87	38.1	7.49
11.0	9.8	127.0	76.2	13.8	63.5	11.1	50.8	8.95	38.1	7.48
9.0	7.9	127.0	76.2	14.2	63.5	11.3	50.8	9.05	38.1	7.48
7.0	6.0	127.0	76.2	14.7	63.5	11.6	50.8	9.17	38.1	7.49
5.0	4.1	122.7	73.6	14.4	61.4	11.4	49.1	9.03	36.8	7.38
3.0	2.2	118.3	71.0	14.2	59.2	11.2	47.3	8.89	35.5	7.27
0.0	-0.7	111.4	66.8	13.9	55.7	10.9	44.6	8.68	33.4	7.09
-3.0	-3.7	104.1	62.5	13.5	52.1	10.7	41.6	8.46	31.2	6.91
-5.0	-5.6	99.4	59.6	13.3	49.7	10.5	39.8	8.32	29.8	6.80
-7.0	-7.6	94.3	56.6	13.1	47.2	10.3	37.7	8.17	28.3	6.68
-10	-10.5	86.7	52.0	12.7	43.4	10.0	34.7	7.96	26.0	6.50
-14.5	-15.0	74.6	44.8	12.2	37.3	9.62	29.8	7.63	22.4	6.23

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



MMY-AP4214FT8-E (42HP, 118kW system)

Cooling

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	100% Capacity		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	109.8	109.8	35.8	98.8	29.2	87.8	23.5	76.9	18.6	
39 °C	111.6	111.6	35.2	100.4	28.7	89.3	23.1	78.1	18.4	
37 °C	114.9	114.9	34.2	103.4	27.9	91.9	22.4	80.4	17.8	
35 °C	118.0	118.0	33.1	106.2	27.0	94.4	21.7	82.6	17.2	
33 °C	118.0	118.0	30.5	106.2	25.0	94.4	20.1	82.6	16.0	
31 °C	118.0	118.0	28.3	106.2	23.2	94.4	18.7	82.6	15.0	
30 °C	118.0	118.0	27.3	106.2	22.3	94.4	18.1	82.6	14.5	
29 °C	118.0	118.0	26.3	106.2	21.6	94.4	17.5	82.6	14.0	
27 °C	118.0	118.0	24.5	106.2	20.1	94.4	16.3	82.6	13.1	
25 °C	118.0	118.0	22.8	106.2	18.8	94.4	15.3	82.6	12.3	
23 °C	118.0	118.0	21.3	106.2	17.5	94.4	14.3	82.6	11.5	
21 °C	118.0	118.0	20.8	106.2	17.2	94.4	14.0	82.6	11.3	
20 °C	118.0	118.0	20.6	106.2	17.0	94.4	13.9	82.6	11.2	
19 °C	118.0	118.0	20.4	106.2	16.9	94.4	13.8	82.6	11.2	
17 °C	118.0	118.0	20.1	106.2	16.6	94.4	13.6	82.6	11.0	
15 °C	118.0	118.0	19.8	106.2	16.4	94.4	13.4	82.6	10.9	

Outdoor Unit		Outdoor Unit 100% Cooling Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	60% Capacity		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
40 °C	109.8	65.9	14.7	54.9	11.6	43.9	9.36	32.9	8.02	
39 °C	111.6	67.0	14.5	55.8	11.4	44.6	9.23	33.5	7.90	
37 °C	114.9	68.9	14.0	57.5	11.1	46.0	8.95	34.5	7.66	
35 °C	118.0	70.8	13.6	59.0	10.7	47.2	8.66	35.4	7.42	
33 °C	118.0	70.8	12.7	59.0	10.1	47.2	8.23	35.4	7.12	
31 °C	118.0	70.8	11.9	59.0	9.52	47.2	7.83	35.4	6.83	
30 °C	118.0	70.8	11.5	59.0	9.25	47.2	7.64	35.4	6.69	
29 °C	118.0	70.8	11.2	59.0	8.99	47.2	7.45	35.4	6.55	
27 °C	118.0	70.8	10.5	59.0	8.50	47.2	7.09	35.4	6.27	
25 °C	118.0	70.8	9.89	59.0	8.04	47.2	6.74	35.4	6.00	
23 °C	118.0	70.8	9.31	59.0	7.60	47.2	6.41	35.4	5.73	
21 °C	118.0	70.8	9.17	59.0	7.52	47.2	6.36	35.4	5.71	
20 °C	118.0	70.8	9.11	59.0	7.48	47.2	6.34	35.4	5.70	
19 °C	118.0	70.8	9.06	59.0	7.44	47.2	6.32	35.4	5.70	
17 °C	118.0	70.8	8.96	59.0	7.38	47.2	6.29	35.4	5.69	
15 °C	118.0	70.8	8.87	59.0	7.33	47.2	6.27	35.4	5.68	

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 27.0°C dry-bulb / 19.0°C wet bulb

Heating

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		100% Capacity		90% Capacity		80% Capacity		70% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	132.0	132.0	31.0	118.8	25.6	105.6	20.9	92.4	16.9
13.0	11.8	132.0	132.0	32.2	118.8	26.6	105.6	21.6	92.4	17.4
11.0	9.8	132.0	132.0	33.7	118.8	27.7	105.6	22.4	92.4	18.0
9.0	7.9	132.0	132.0	35.2	118.8	28.9	105.6	23.3	92.4	18.6
7.0	6.0	132.0	132.0	36.9	118.8	30.2	105.6	24.4	92.4	19.4
5.0	4.1	127.5	127.5	36.3	114.8	29.7	102.0	24.0	89.3	19.1
3.0	2.2	122.9	122.9	35.8	110.6	29.3	98.3	23.6	86.0	18.8
0.0	-0.7	115.8	115.8	34.9	104.2	28.6	92.6	23.1	81.1	18.3
-3.0	-3.7	108.2	108.2	34.0	97.4	27.9	86.6	22.5	75.7	17.9
-5.0	-5.6	103.3	103.3	33.5	93.0	27.4	82.6	22.1	72.3	17.6
-7.0	-7.6	98.0	98.0	32.9	88.2	26.9	78.4	21.7	68.6	17.3
-10	-10.5	90.1	90.1	32.0	81.1	26.2	72.1	21.1	63.1	16.8
-14.5	-15.0	77.6	77.6	30.7	69.8	25.1	62.1	20.3	54.3	16.1

Outdoor Unit		Outdoor Unit 100% Heating Capacity (kW)	Compressor + Outdoor Fan Power consumption (kW)							
Dry-Bulb (°C)	Wet-Bulb (°C)		60% Capacity		50% Capacity		40% Capacity		30% Capacity	
			TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)	TC (kW)	PI (kW)
15.0	13.7	132.0	79.2	13.6	66.0	11.0	52.8	9.09	39.6	7.88
13.0	11.8	132.0	79.2	13.9	66.0	11.2	52.8	9.14	39.6	7.84
11.0	9.8	132.0	79.2	14.3	66.0	11.4	52.8	9.21	39.6	7.81
9.0	7.9	132.0	79.2	14.7	66.0	11.6	52.8	9.30	39.6	7.80
7.0	6.0	132.0	79.2	15.2	66.0	11.9	52.8	9.42	39.6	7.79
5.0	4.1	127.5	76.5	15.0	63.8	11.7	51.0	9.27	38.3	7.67
3.0	2.2	122.9	73.7	14.7	61.5	11.5	49.2	9.13	36.9	7.55
0.0	-0.7	115.8	69.5	14.4	57.9	11.2	46.3	8.91	34.7	7.37
-3.0	-3.7	108.2	64.9	14.0	54.1	11.0	43.3	8.69	32.5	7.19
-5.0	-5.6	103.3	62.0	13.8	51.7	10.8	41.3	8.54	31.0	7.07
-7.0	-7.6	98.0	58.8	13.5	49.0	10.6	39.2	8.39	29.4	6.94
-10	-10.5	90.1	54.1	13.2	45.1	10.3	36.0	8.17	27.0	6.76
-14.5	-15.0	77.6	46.6	12.6	38.8	9.89	31.0	7.83	23.3	6.48

TC : Total Capacity PI : Power Input
Indoor air temperature conditions : 20.0°C dry-bulb



**11-1-9. Sound Pressure level data (NC CURVE)
Outdoor unit**

Microphone

1.5m

1m

Front

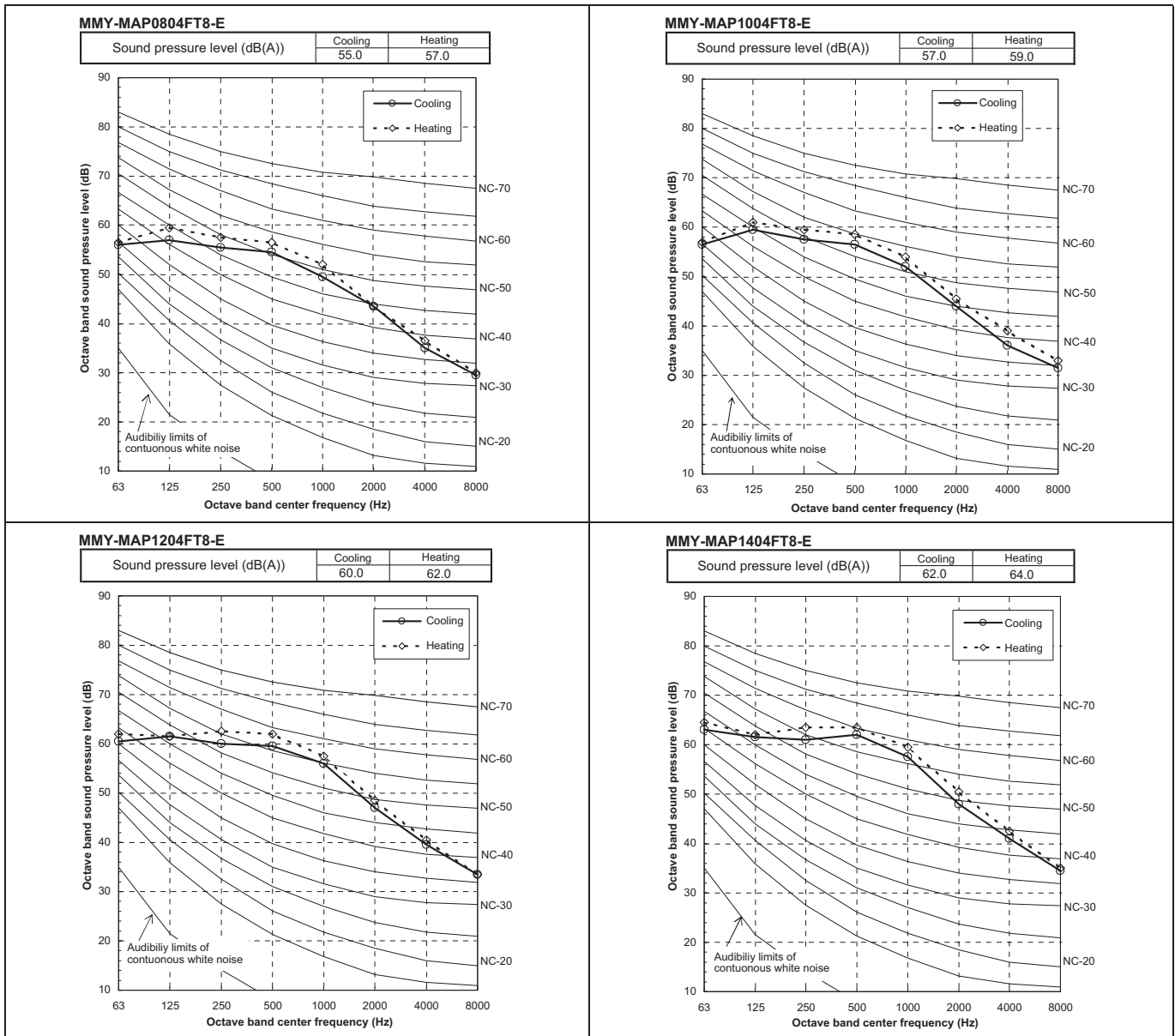
[Conditions]

Cooling
Outdoor temperature: 25°CDB, 16°CWB
Indoor air temperature: 27°CDB, 19°CWB

Heating
Outdoor temperature: 7°CDB, 6°CWB
Indoor air temperature: 20°CDB

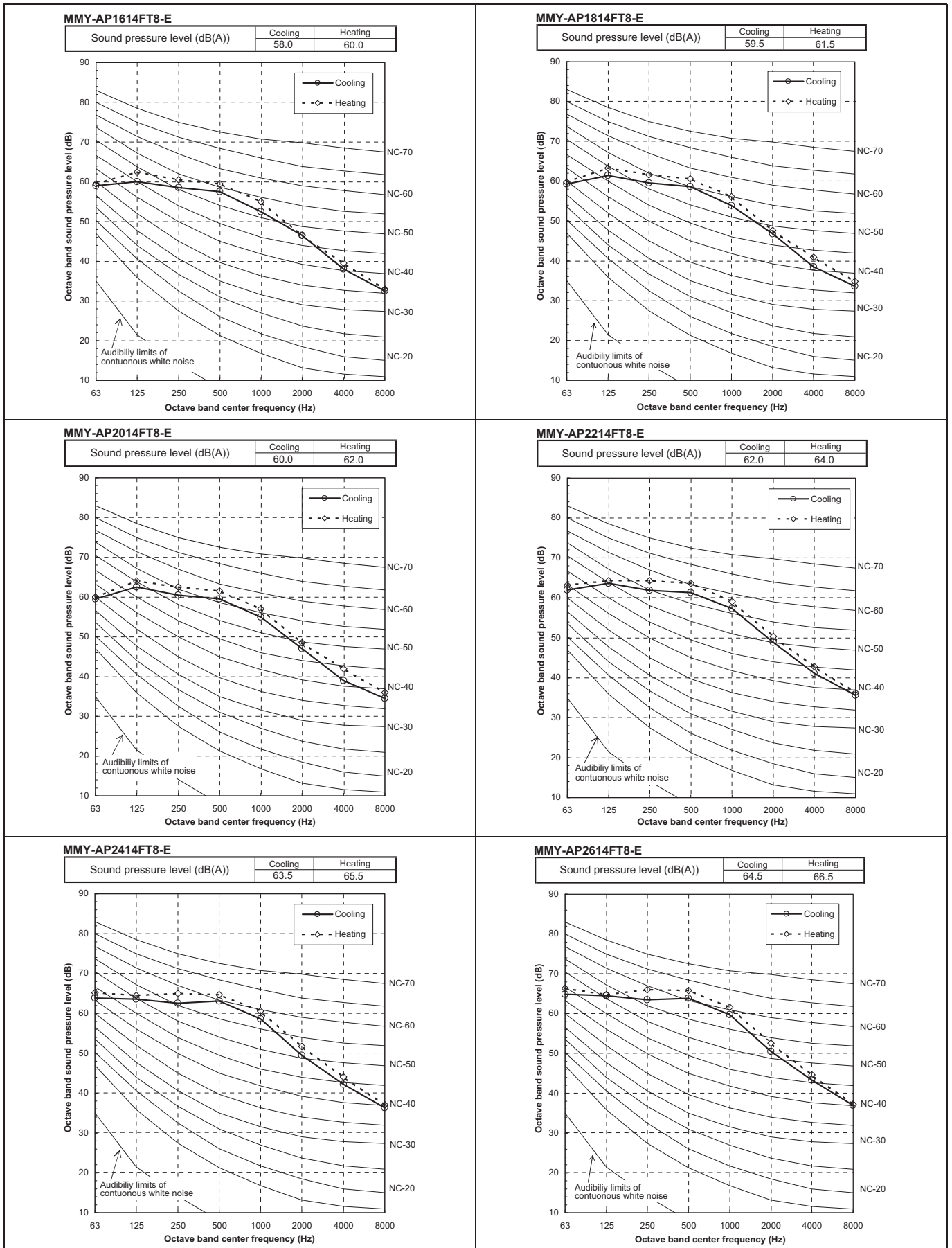
This sound pressure level are measured in an anechoic chamber in accordance.

Single unit





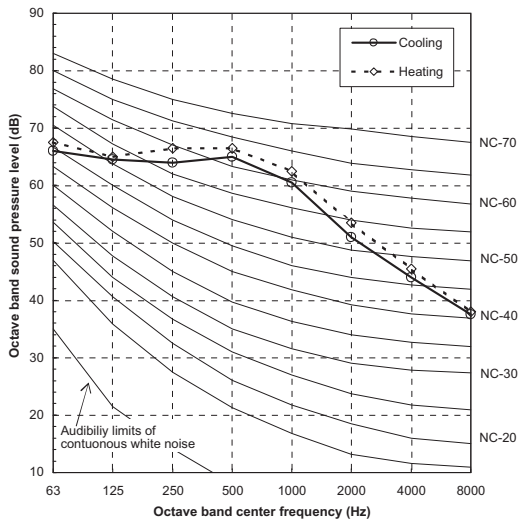
Combination





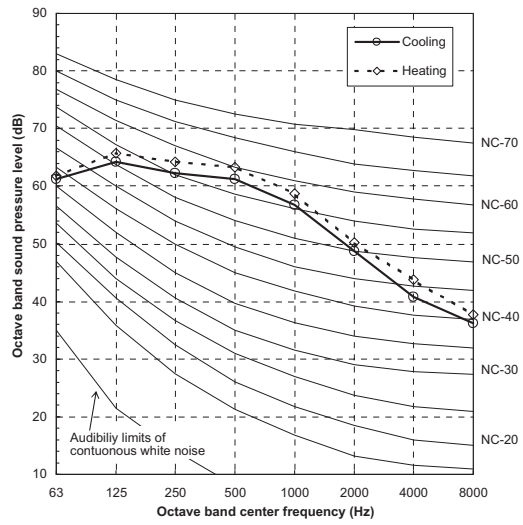
MMY-AP2814FT8-E

Sound pressure level (dB(A))	Cooling	Heating
	65.0	67.0



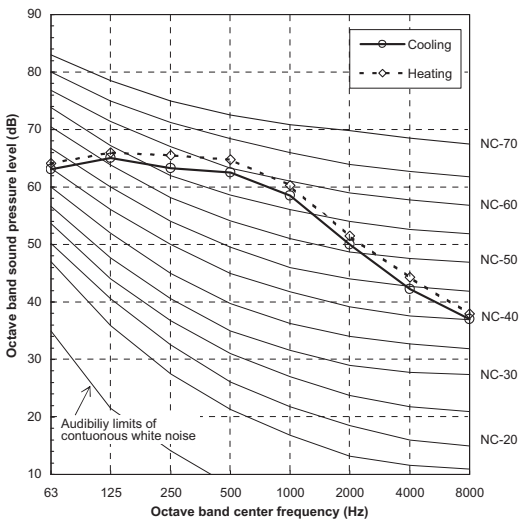
MMY-AP3014FT8-E

Sound pressure level (dB(A))	Cooling	Heating
	62.0	64.0



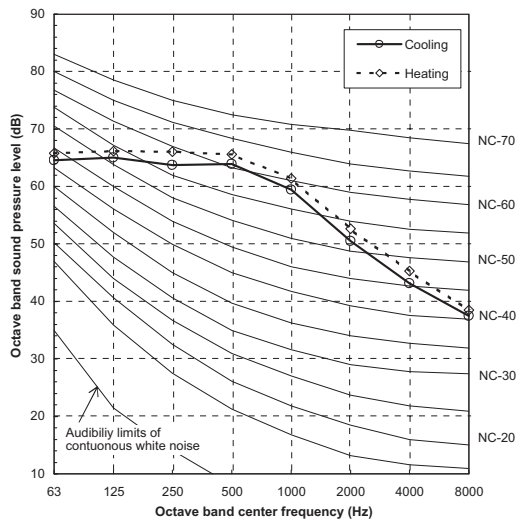
MMY-AP3214FT8-E

Sound pressure level (dB(A))	Cooling	Heating
	63.0	65.0



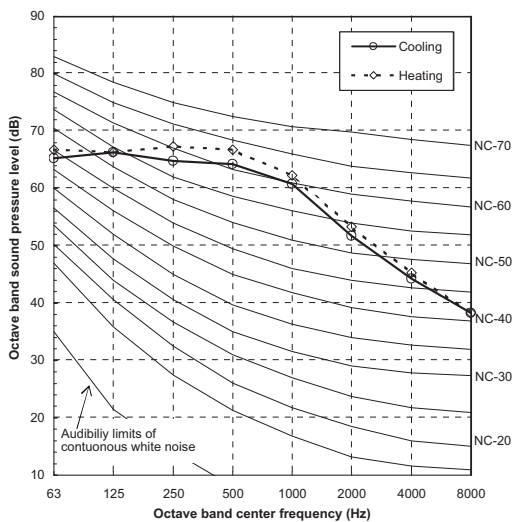
MMY-AP3414FT8-E

Sound pressure level (dB(A))	Cooling	Heating
	64.5	66.5



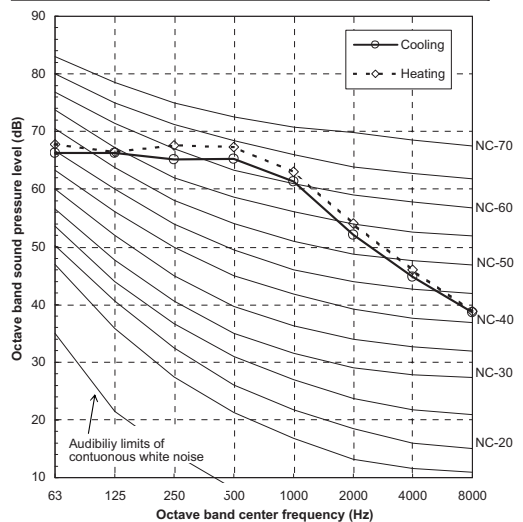
MMY-AP3614FT8-E

Sound pressure level (dB(A))	Cooling	Heating
	65.0	67.0



MMY-AP3814FT8-E

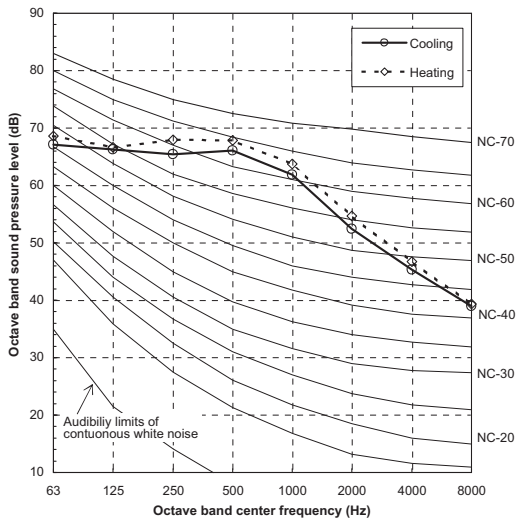
Sound pressure level (dB(A))	Cooling	Heating
	65.5	67.5





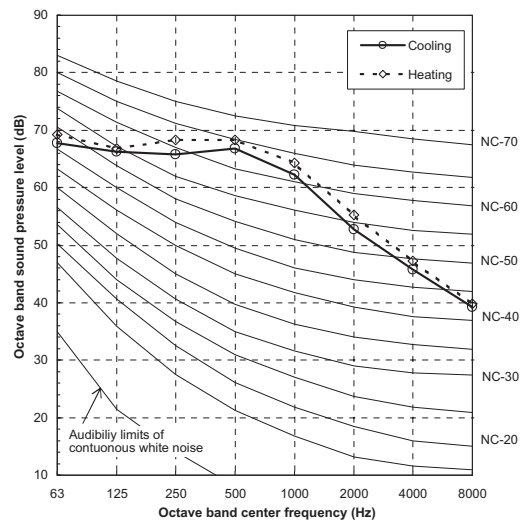
MMY-AP4014FT8-E

Sound pressure level (dB(A))	Cooling	Heating
	66.5	68.5



MMY-AP4214FT8-E

Sound pressure level (dB(A))	Cooling	Heating
	67.0	69.0



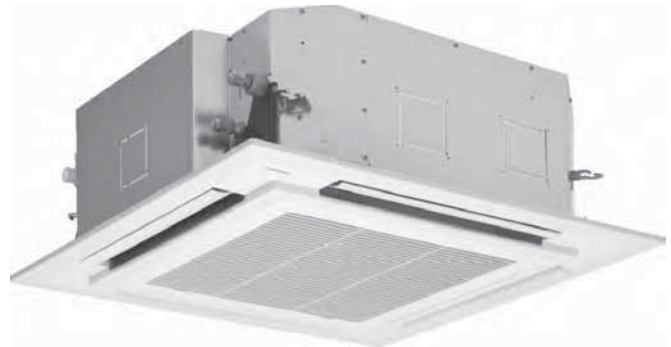


11-2. Indoor unit

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

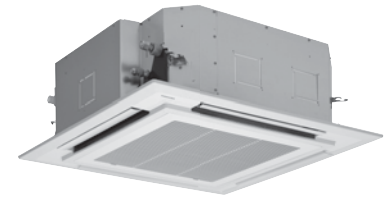


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1. Specifications



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	
Electrical characteristics	Power supply		1 phase 50Hz 230V (220-240V) (Separate 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 dimension	Main unit	Height (mm)	256							319			
		Width (mm)	840										
		Depth (mm)	840										
	Ceiling panel	Height (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.

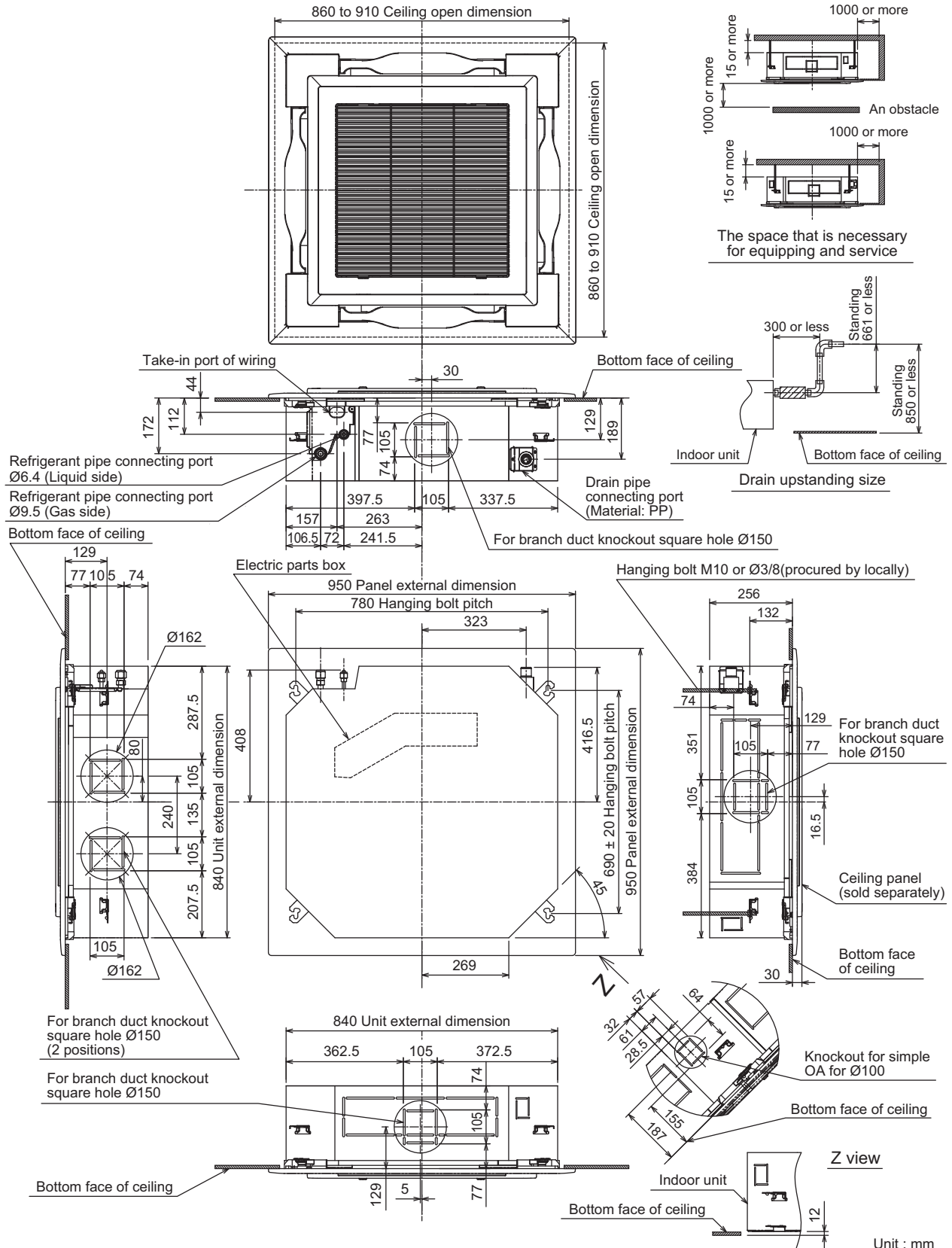
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

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



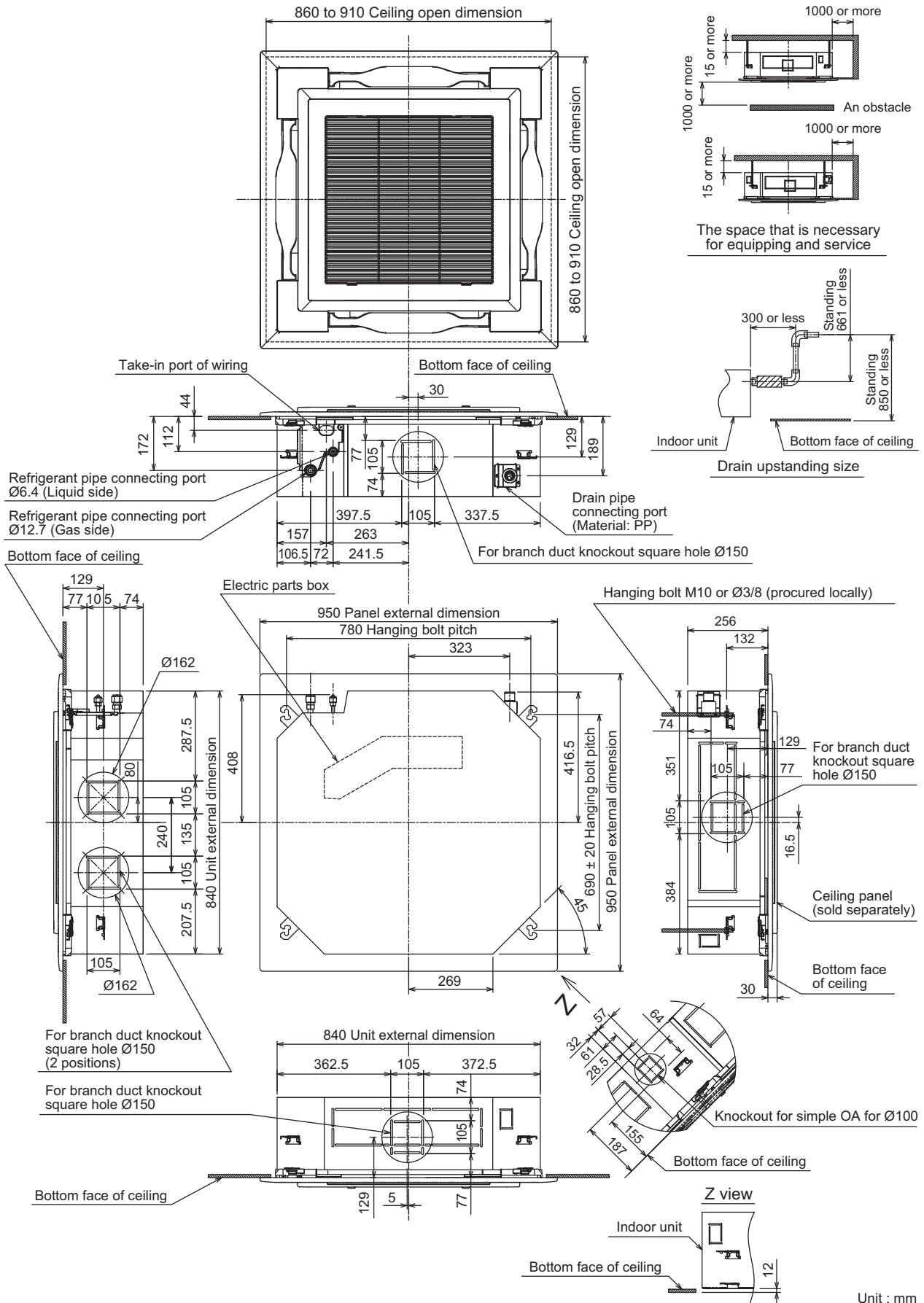
2. Dimensions

MMU-AP0092H, AP0122H



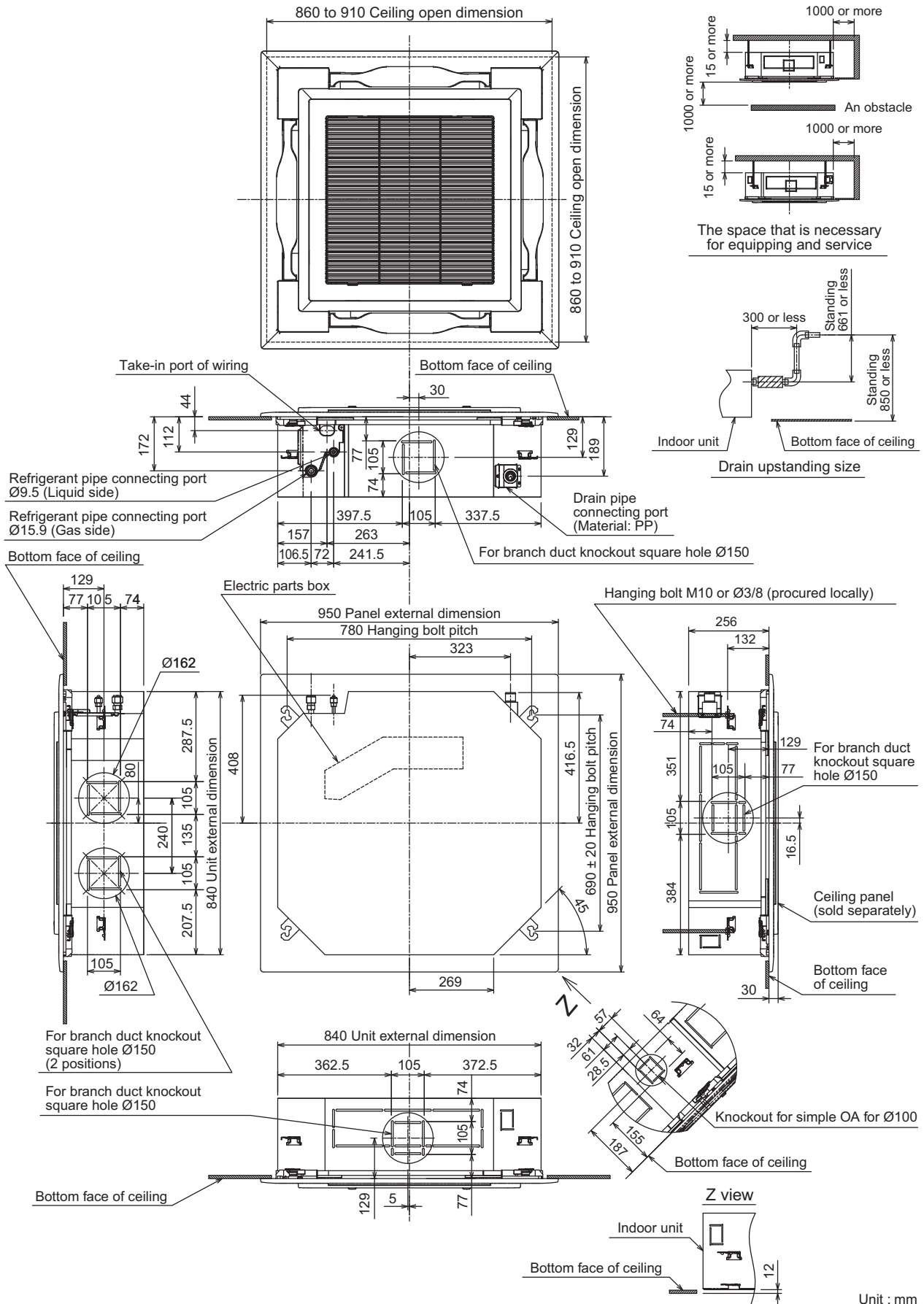


MMU-AP0152H, AP0182H



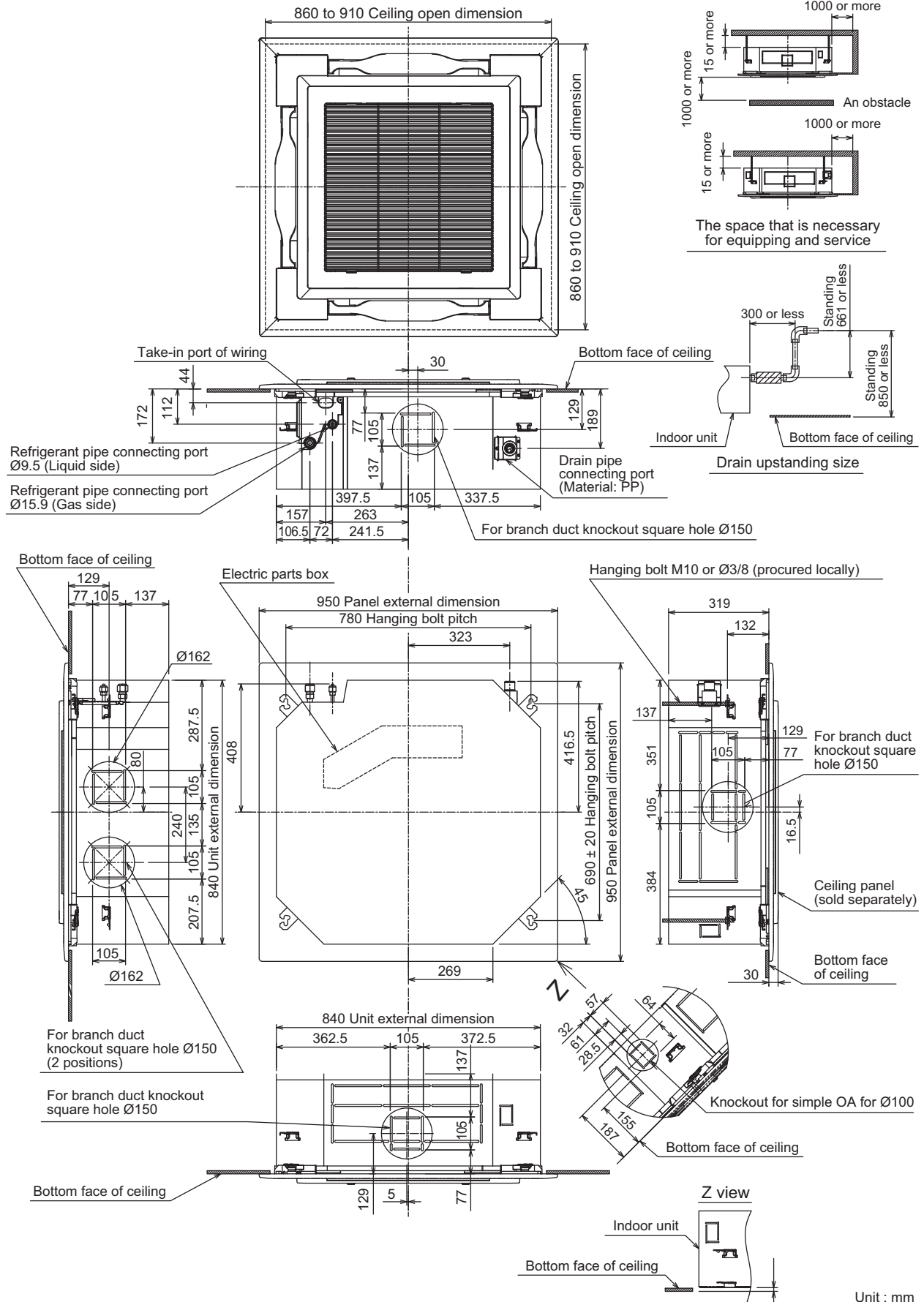


MMU-AP0242H, AP0272H, AP0302H





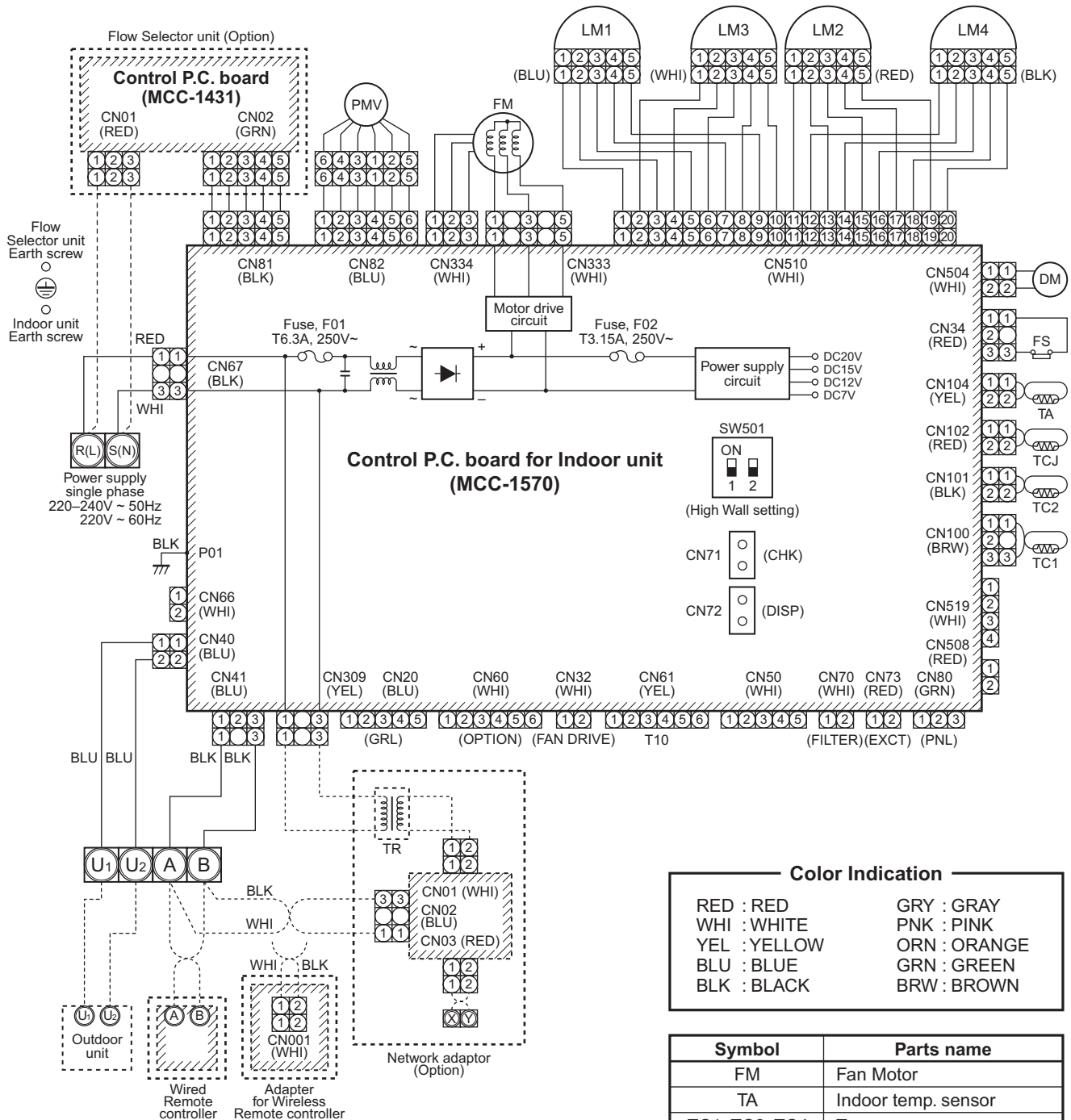
MMU-AP0362H, AP0482H, AP0562H





3. Wiring diagram

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



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

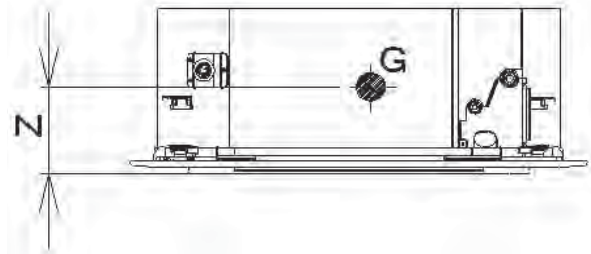
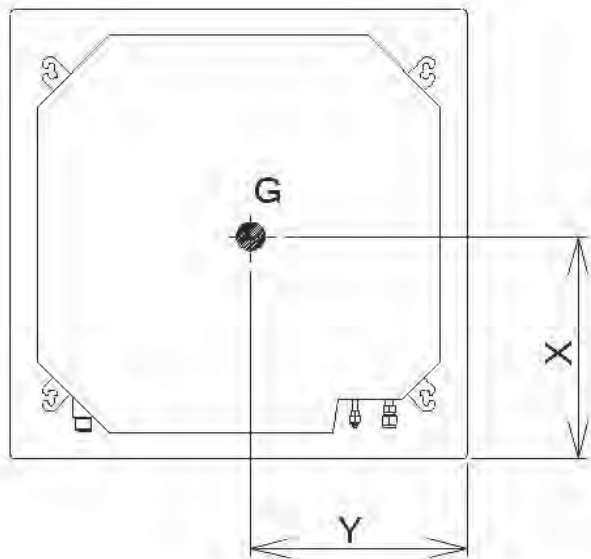
Symbol	Parts name
FM	Fan Motor
TA	Indoor temp. sensor
TC1, TC2, TCJ	Temp. sensor
LM1, 2, 3, 4	Louver Motor
DM	Drain pump Motor
FS	Float Switch
PMV	Pulse Motor Valve
TR	Power supply Transformer (For Network adaptor)

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.



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					
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

MCA : Minimum Circuit Amps FLA : Full Load Amps
 MOCP : Maximum Overcurrent Protection (Amps)



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	
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	2.3	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
	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	
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	3.8	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	
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	
027	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
	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	
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	
036	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	outdorr 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
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	
056	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]

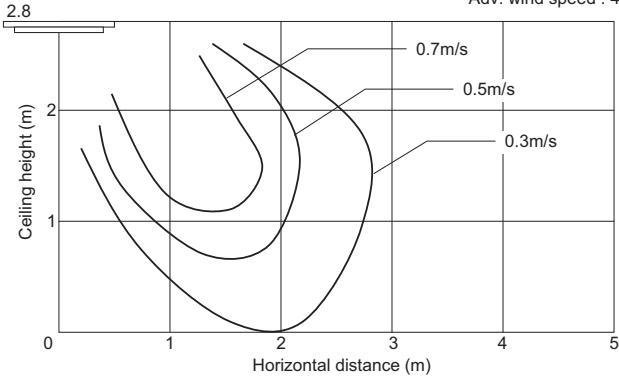
SHC: Sensible Capacity [kW]



7. Air throw distance chart

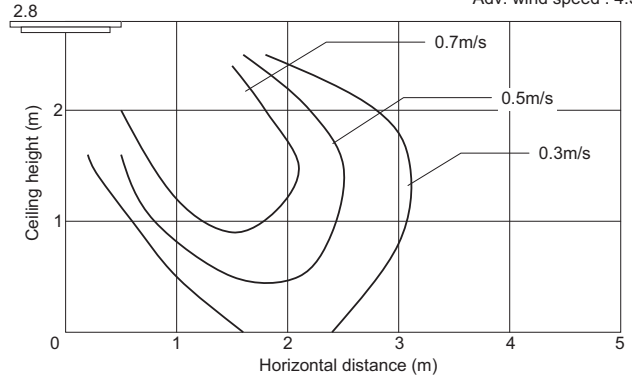
MMU-AP0092H / AP0122H

Adv. wind speed : 4.9



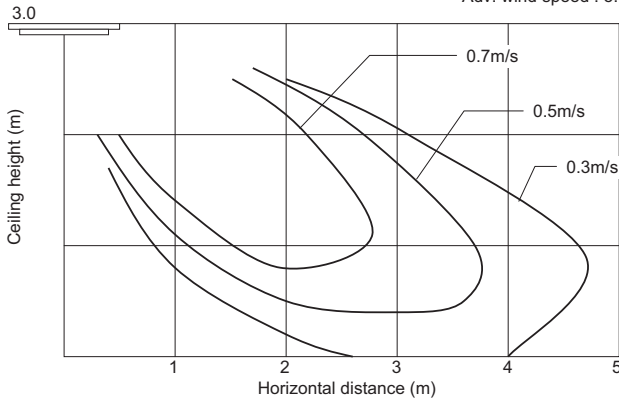
MMU-AP0152H / AP0152H

Adv. wind speed : 4.3



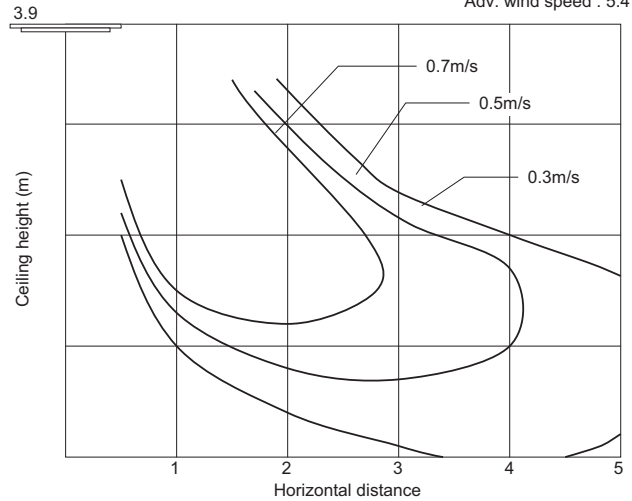
MMU-AP0242H/AP0272H/AP0302H

Adv. wind speed : 5.4



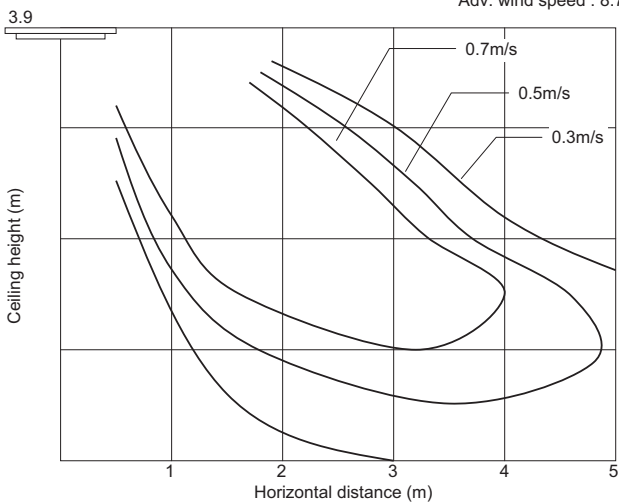
MMU-AP0362H

Adv. wind speed : 5.4



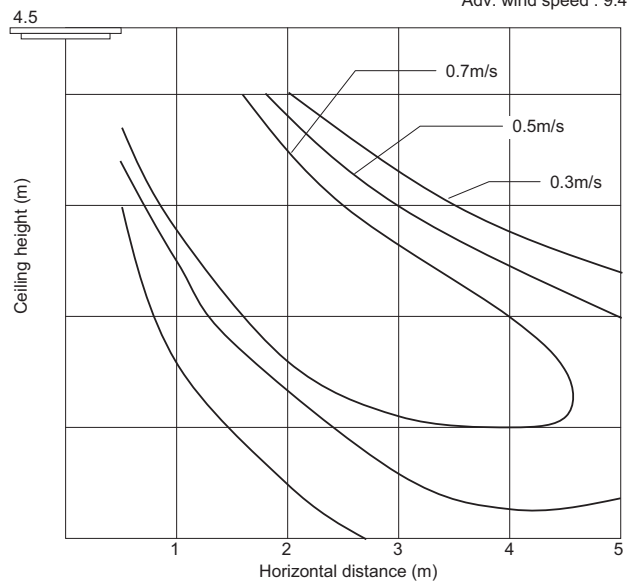
MMU-AP0482H / AP0561H

Adv. wind speed : 8.7



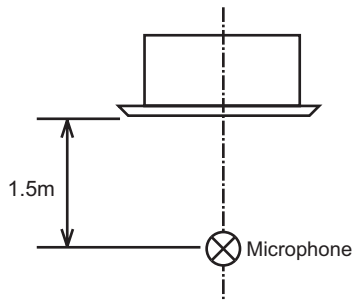
MMU-AP0362H / AP0482H / AP0562H (High ceiling 3)

Adv. wind speed : 9.4



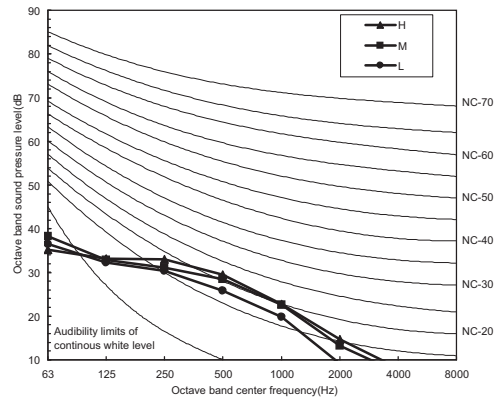


8. Sound characteristics (NC-Curve)



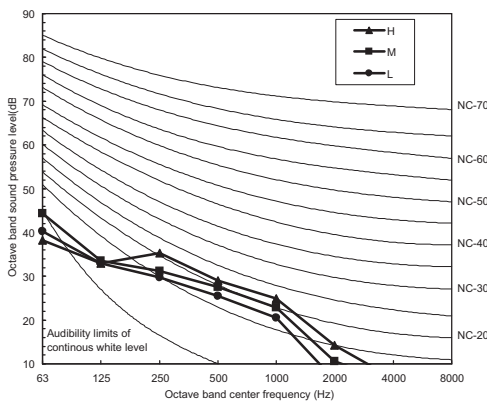
MMU-AP0092H/AP0122H

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



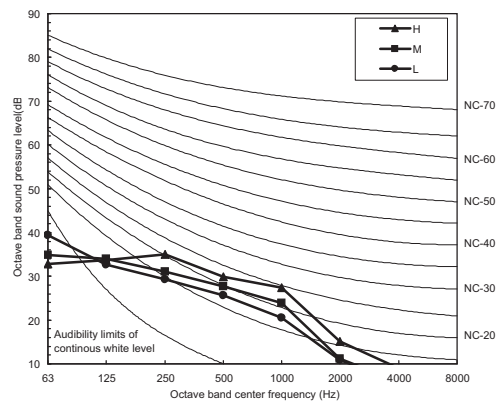
MMU-AP0152H

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



MMU-AP0182H

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



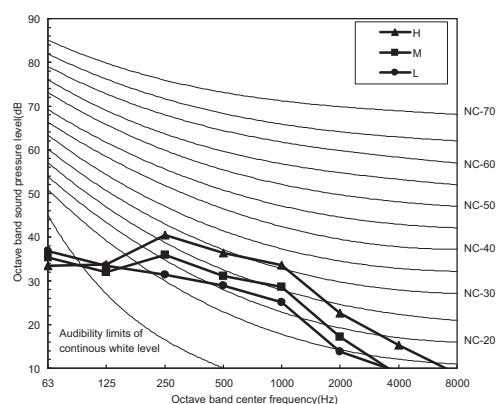
MMU-AP0242H/AP0272H

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



MMU-AP0302H

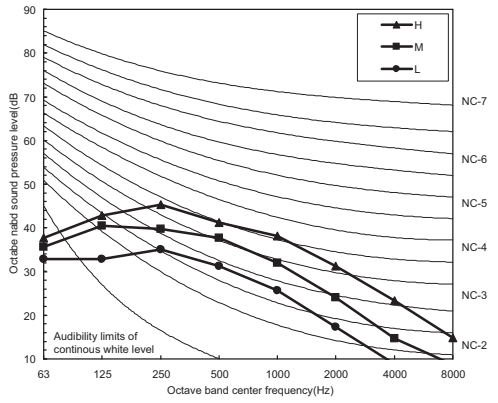
Sound pressure level(dB)(A)	H-M-L
	38-33-30





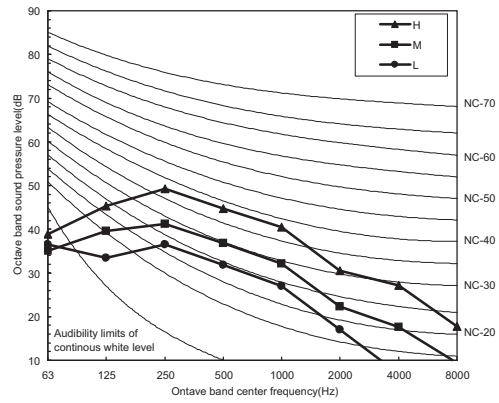
MMU-AP0362H

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



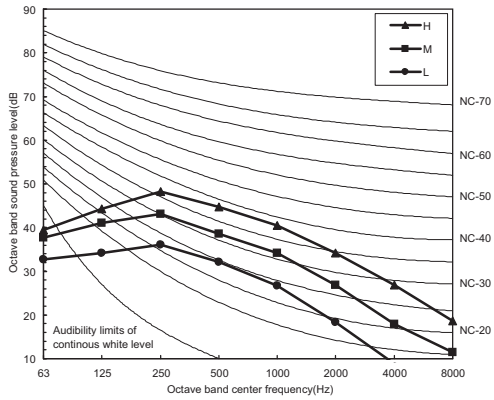
MMU-AP0482H

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



MMU-AP0562H

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





9. Fresh air intake (Design guide)

4-way Air Discharge Cassette Type (2series)

Usage

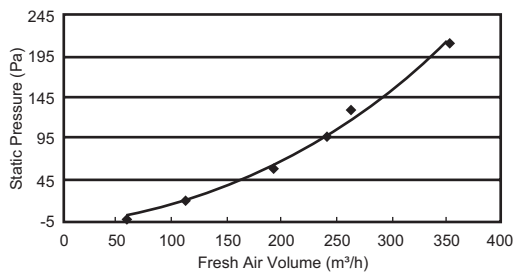
The fresh air and filter chamber is used as the filter chamber.
 Fresh air intake by using the fresh air and filter chamber and fresh air inlet box.

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 accelate starting up in heating mode, implement pre-heating operation by cutting off fresh air intake.

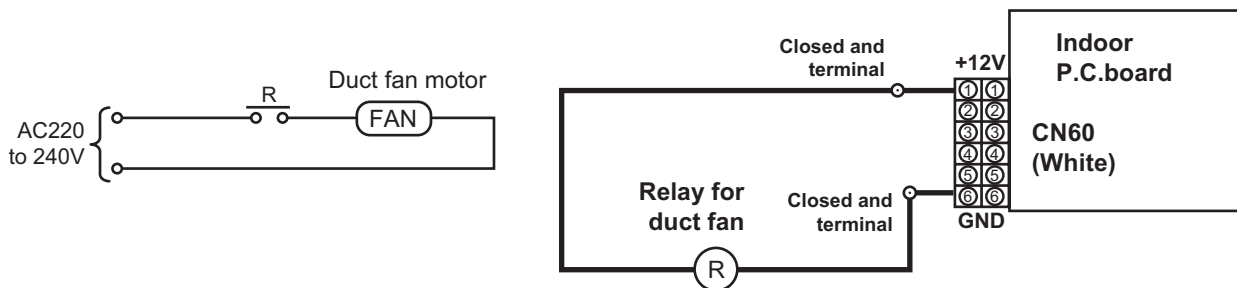


Characteristics between air volume of branching duct and static pressure

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.)



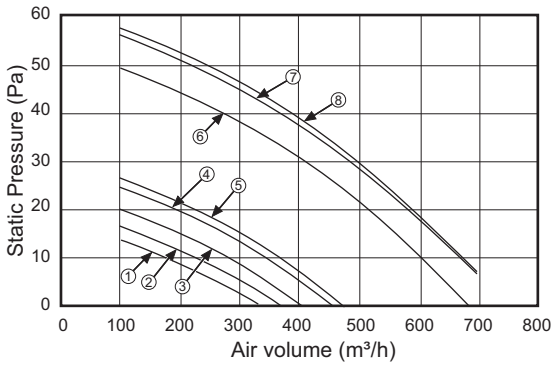


10. Branching duct (Design guide)

4-way Air Discharge Cassette Type (2series)

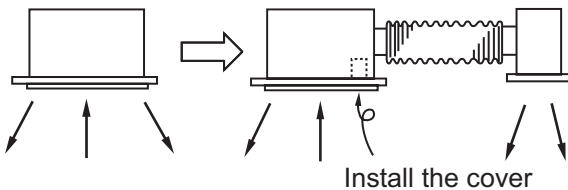
Characteristics between air volume of branching duct and static pressure

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

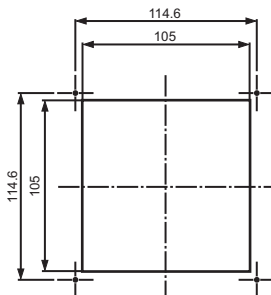
Cover method



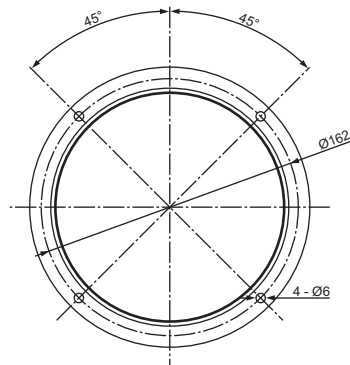
Use air discharge direction kit (TCB-BC1602UE) to cover the air discharge port.

Install the cover

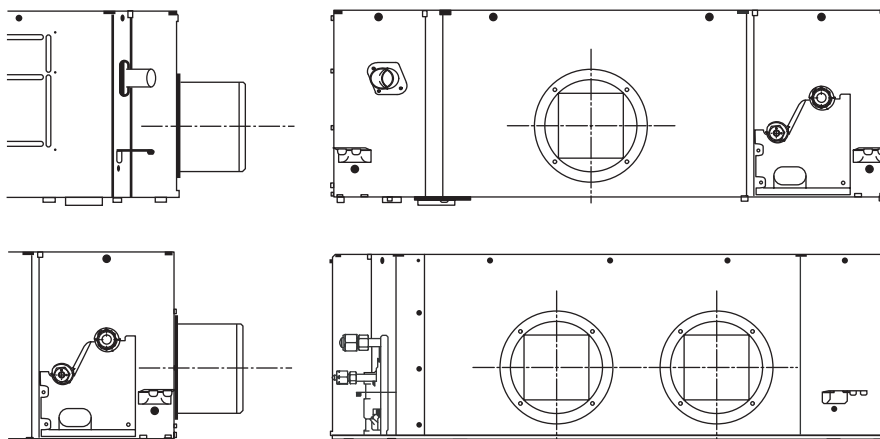
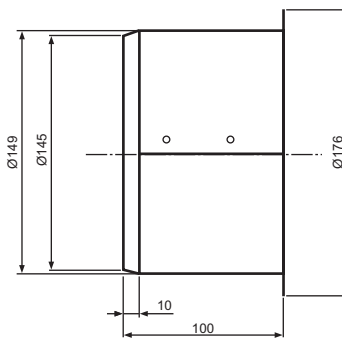
Dimension



Knockout square for branching duct in indoor unit



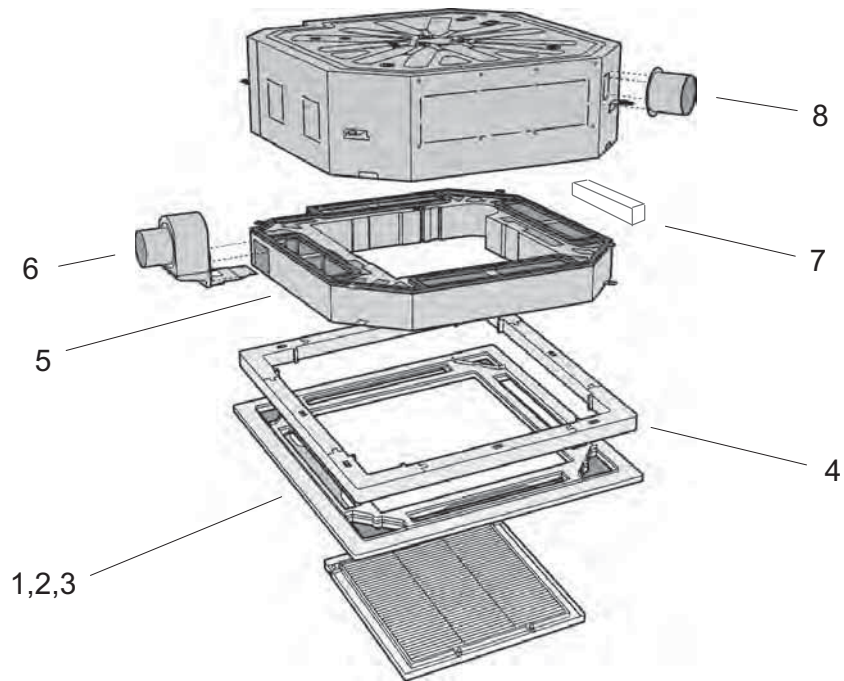
Design sample of branching duct flange



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

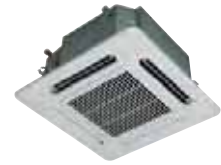


1. Specifications
2. Dimension
3. Wiring diagram
4. Center of Gravity
5. Sensible capacity table
6. Electrical characteristics
7. Air throw distance chart
8. Sound characteristics (NC-Curve)
9. Fresh air intake(Design guide)
10. Branching Duct(Design guide)
11. Accessories



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) (m ³ /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)		Ø9.5			Ø12.7	
	Liquid side (mm)		Ø6.4				
	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/15°C WB, Outdoor air temperature 35°C DB

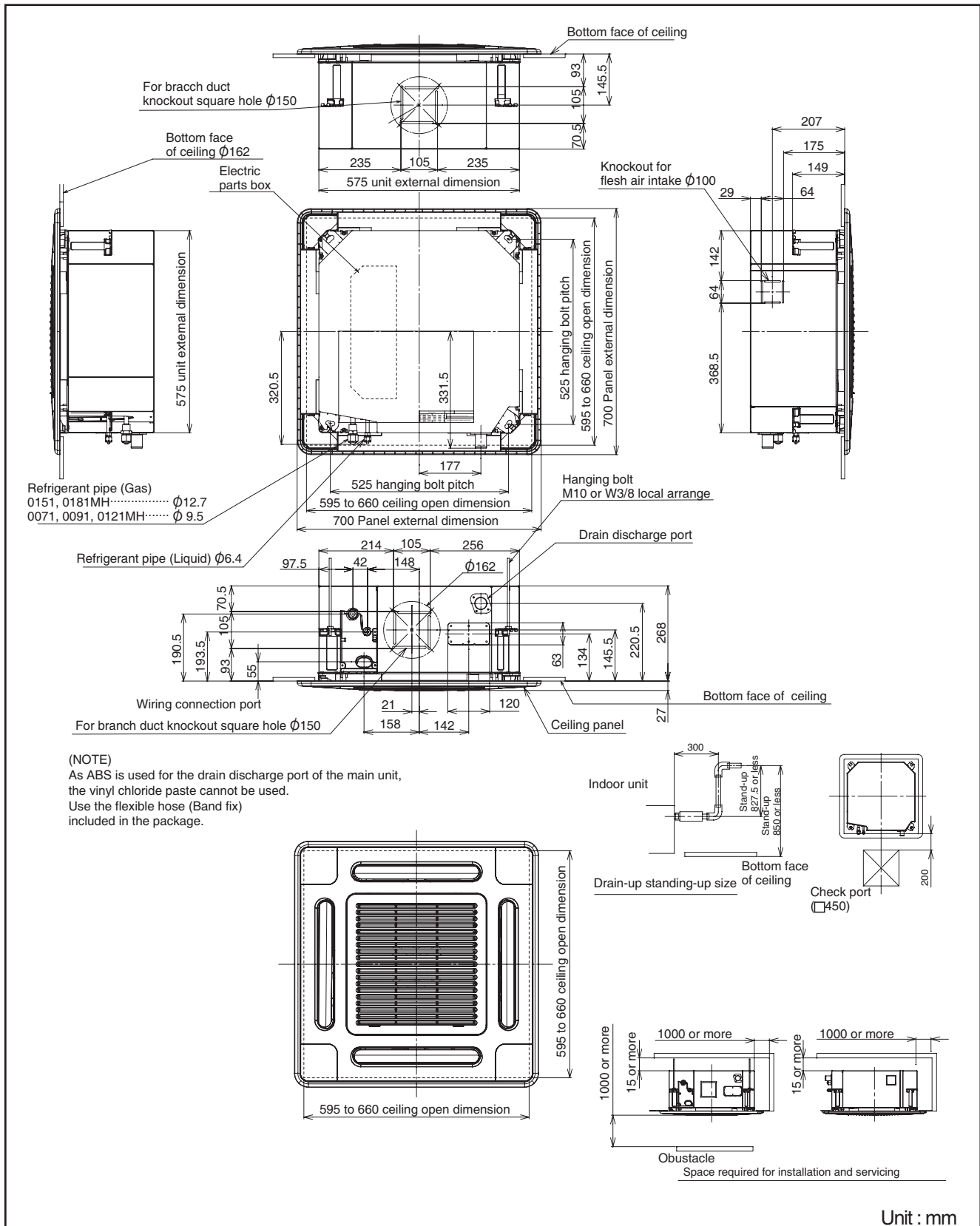
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB



2. Dimension

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

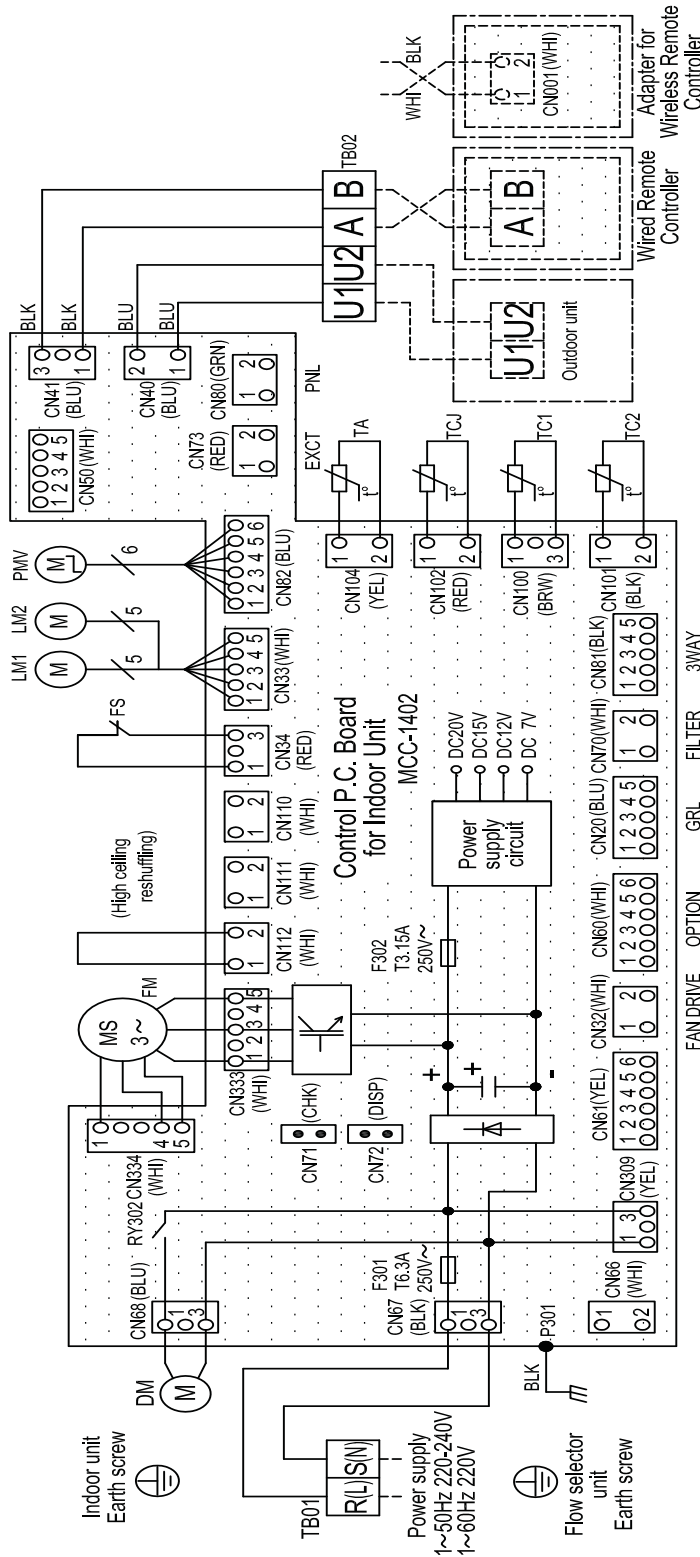
MMU-AP0074MH-E, AP0094MH-E, AP0124MH-E, AP0154MH-E, AP0181MH





3. Wiring diagram

MMU-AP0074MH-E, AP0094MH-E, AP0124MH-E, AP0154MH-E, AP0184MH-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.
4. □ indicates the protection ground.
- indicates the control P.C. board.

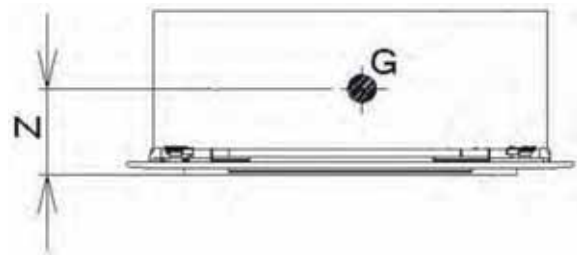
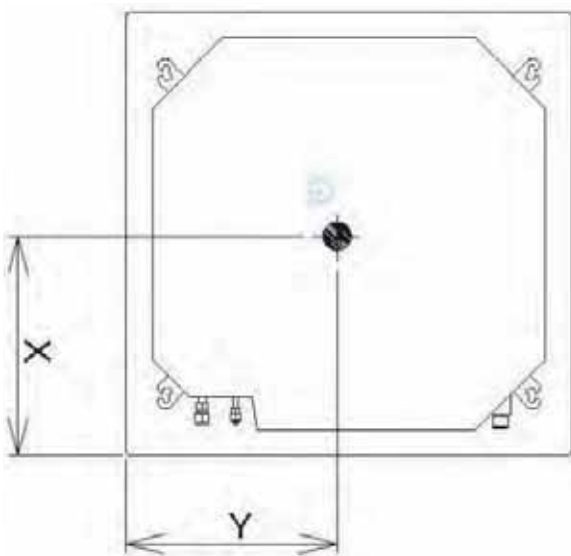
Symbol	Parts Name
CN**	Connector
DM	Drain Pump Motor
F301,302	Fuse
FM	Fan Motor
FS	Float Switch
LM1,2	Louver Motor
PMV	Pulse Motor Valve
RY302	Drain Control Relay
TA	Indoor temp sensor
TB01,02	Terminal Block
TC1,2,TC	Temp sensor

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



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
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	
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	



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

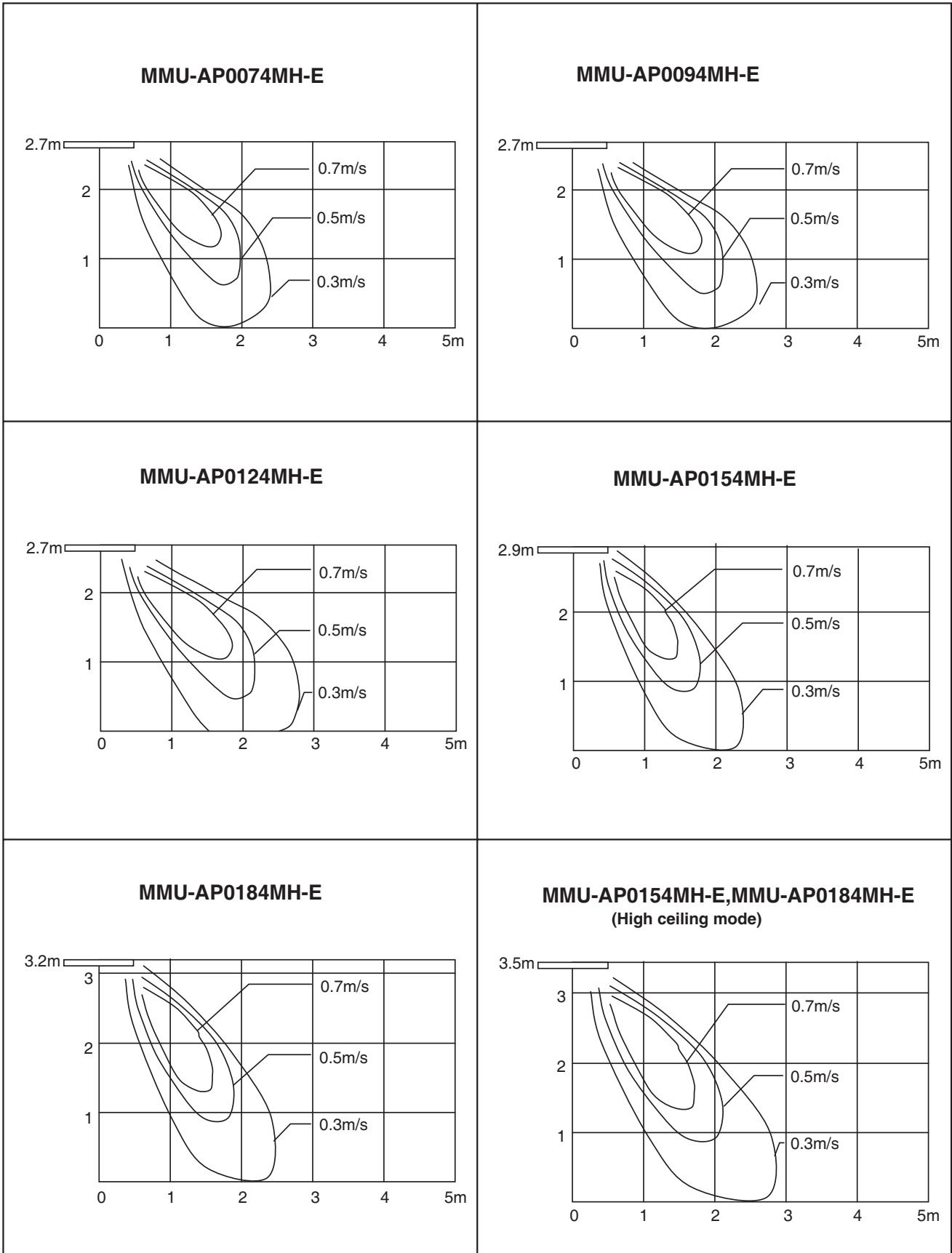
	Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
				Min	Max	kW	FLA	MCA	MOCP
50Hz	Compact 4-way Cassette (600 x 600) Type	MMU-AP 0074 MH-E	230-1-50	198	264	0.060	0.32	0.40	15
		MMU-AP 0094 MH-E	230-1-50	198	264	0.060	0.35	0.44	15
		MMU-AP 0124 MH-E	230-1-50	198	264	0.060	0.36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

MCA : Minimum Circuit Amps FLA : Full Load Amps
 MOCP : Maximum Overcurrent Protection (Amps)



7. Air throw distance chart

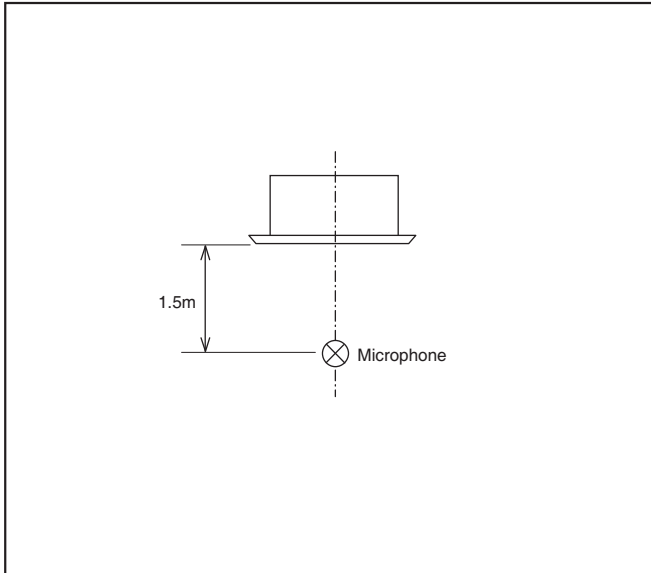
■ Compact 4-way Cassette (600 x 600) Type





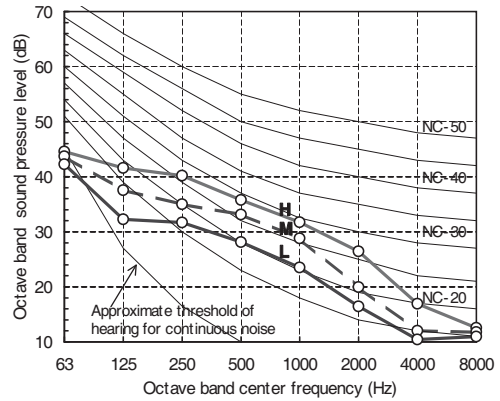
8. Sound Characteristics (NC-Curve)

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



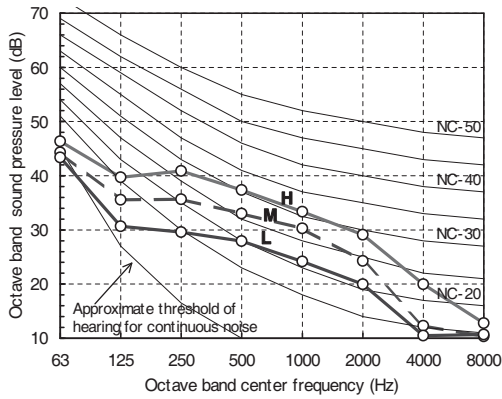
MMU-AP0074MH-E

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



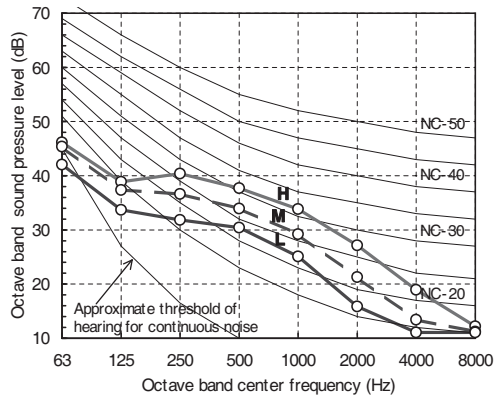
MMU-AP0094MH-E

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



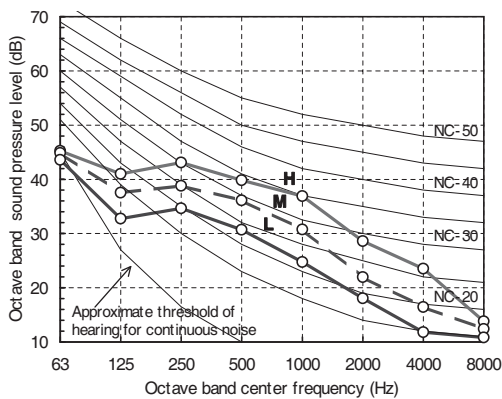
MMU-AP0124MH-E

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



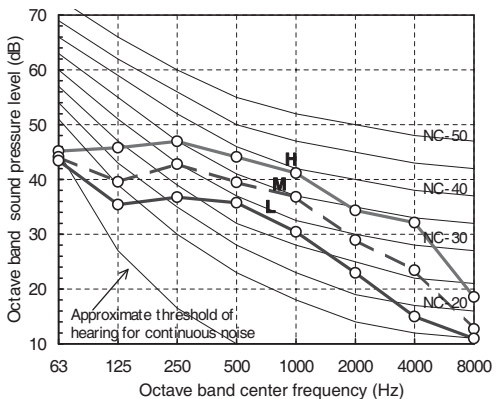
MMU-AP0154MH-E

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.

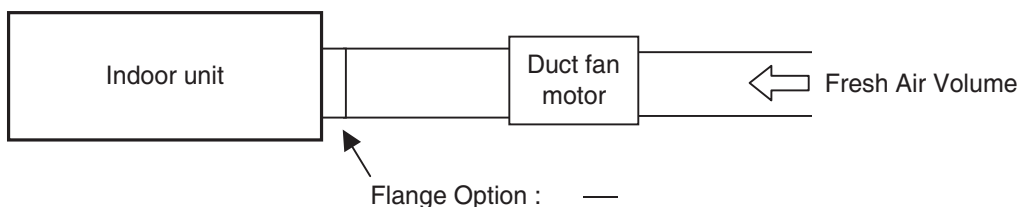
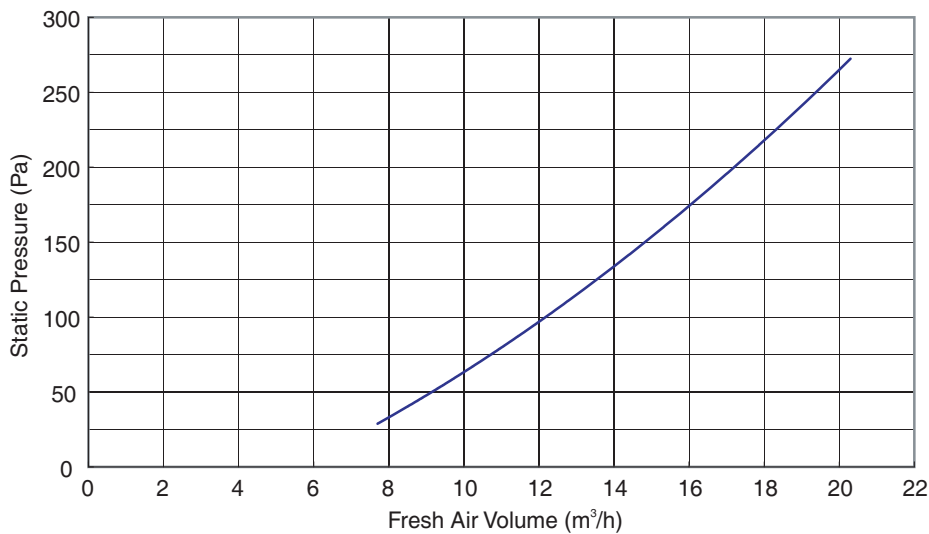
Model name	MMU-	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184MH-E
Standard air flow	(m ³ /h)	552	570	594	660	762

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.

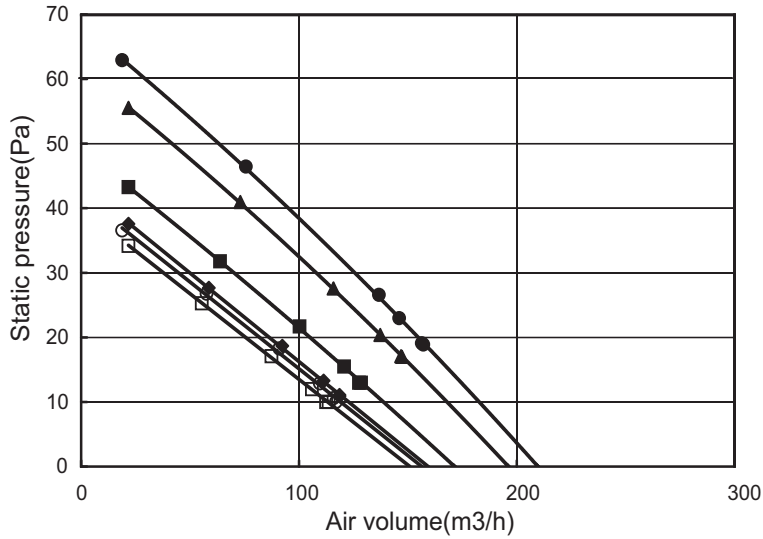
(Carry out the trial operation following the installation manual of the indoor unit.)



10. Branching Duct (design guide)

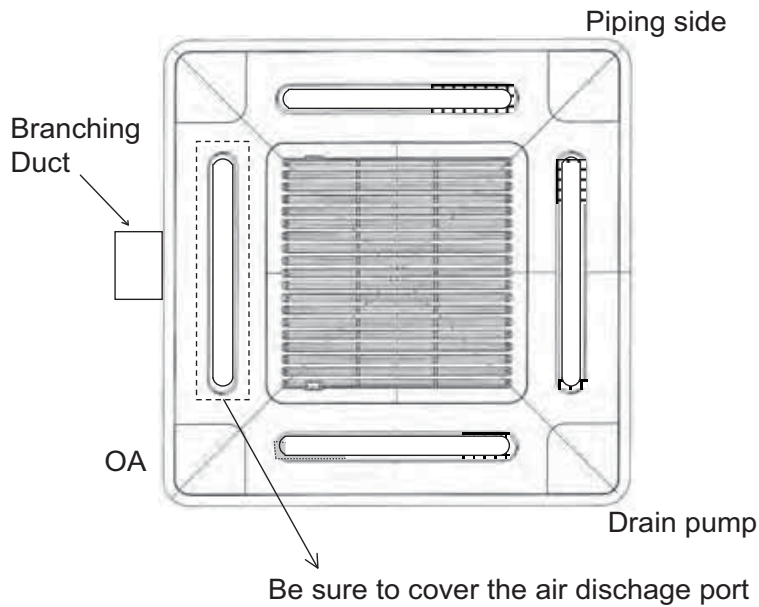
■ Compact 4-way Cassette (600 x 600) Type

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

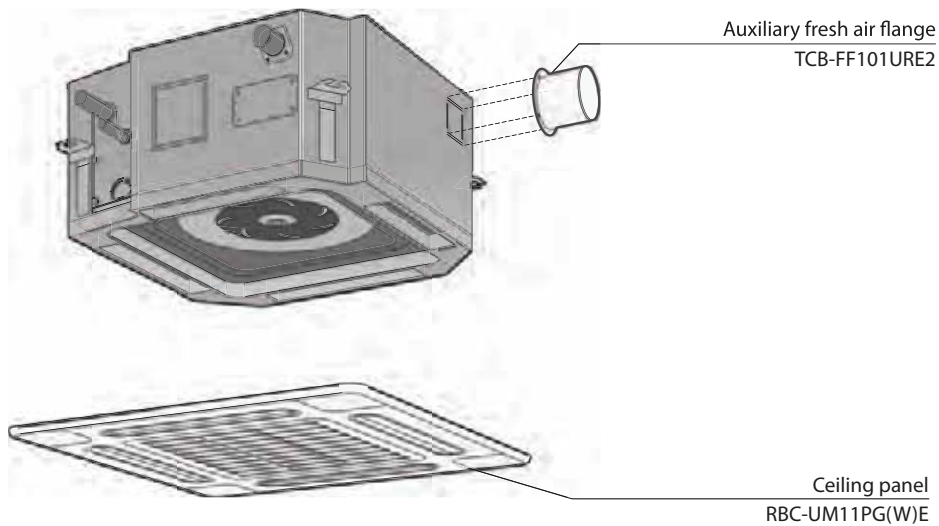




11. Accessories

■ 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
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

2-way Air Discharge Cassette Type



Model name		MMU-	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
Electrical characteristics	Power supply	1 phase 50Hz 230V (220-240V) (Separate 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 dimensions	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)	(m ³ /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.

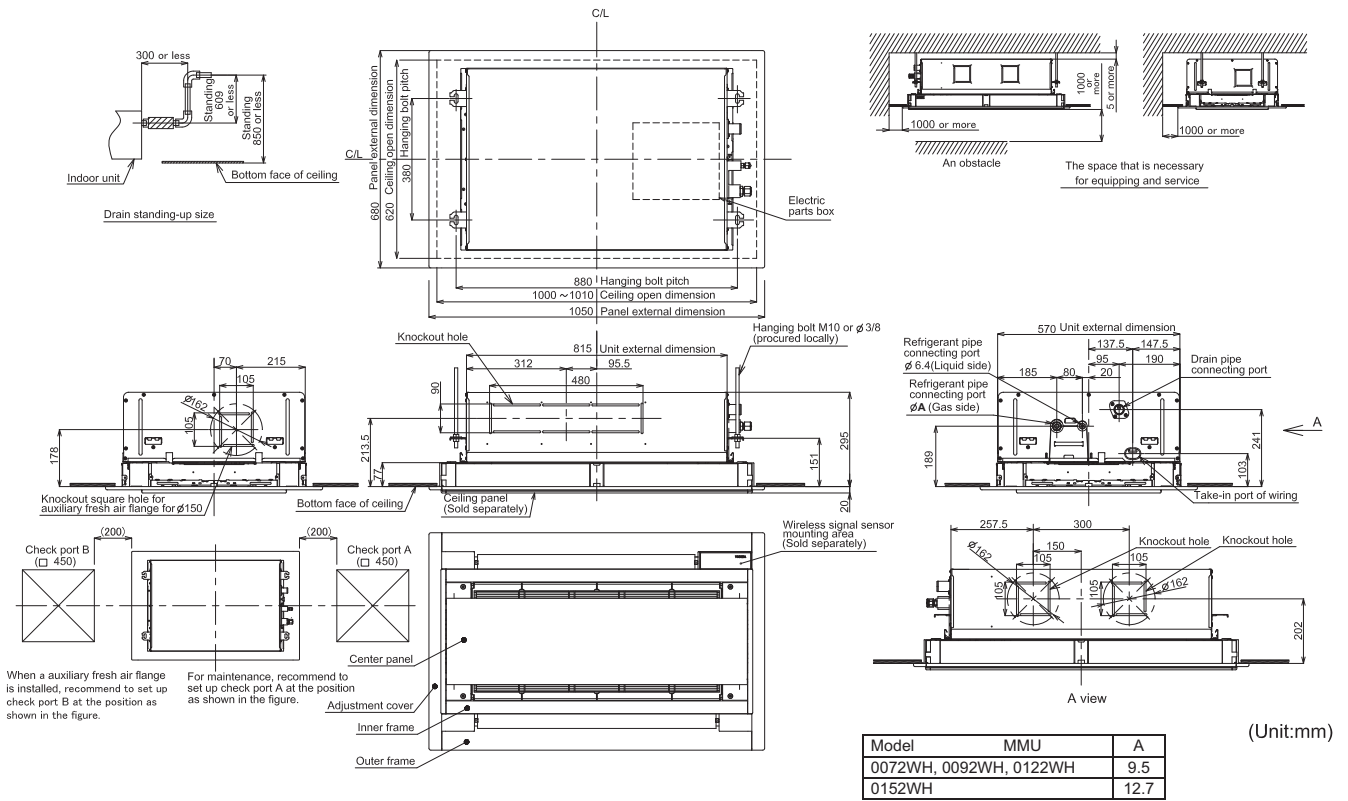
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

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

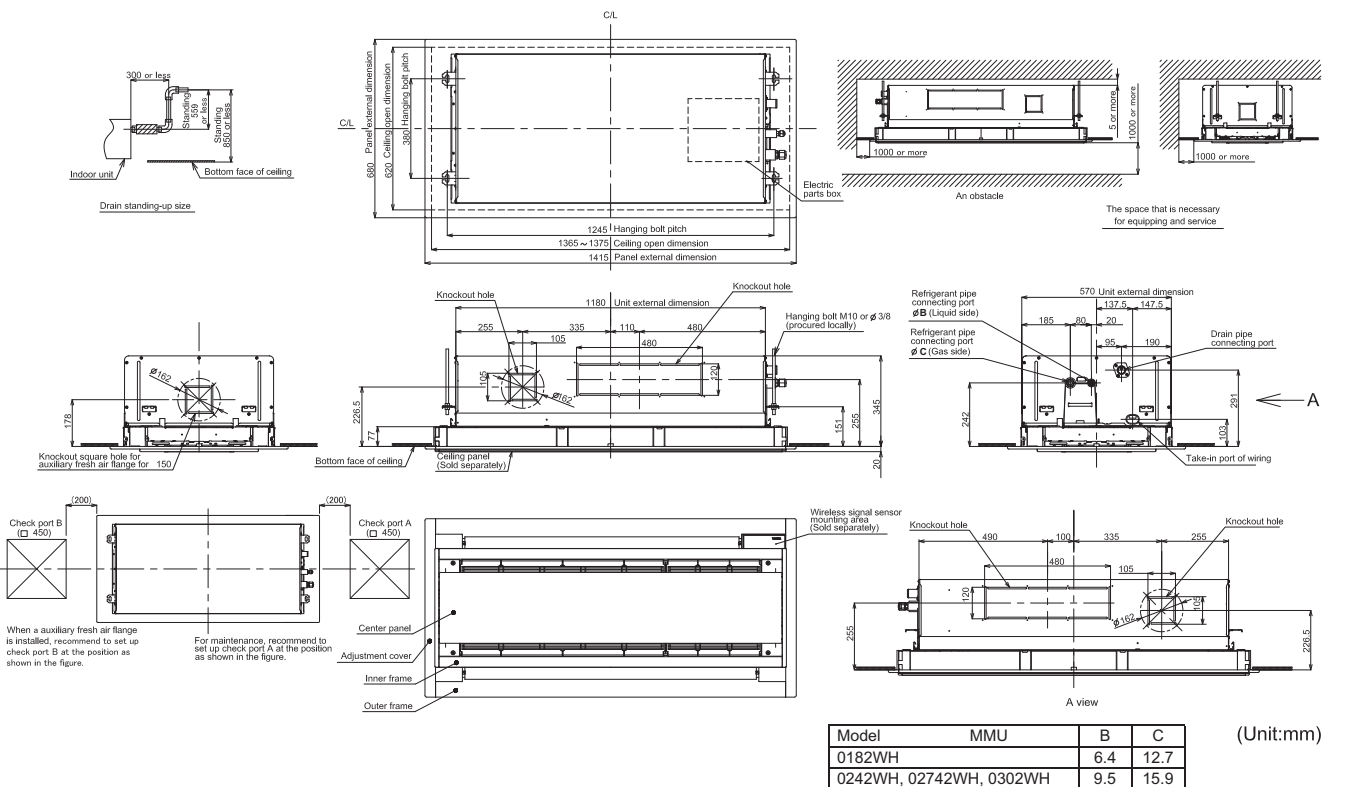


2. Dimension

MMU-AP0072WH, 0092WH, 0122WH, AP0152WH

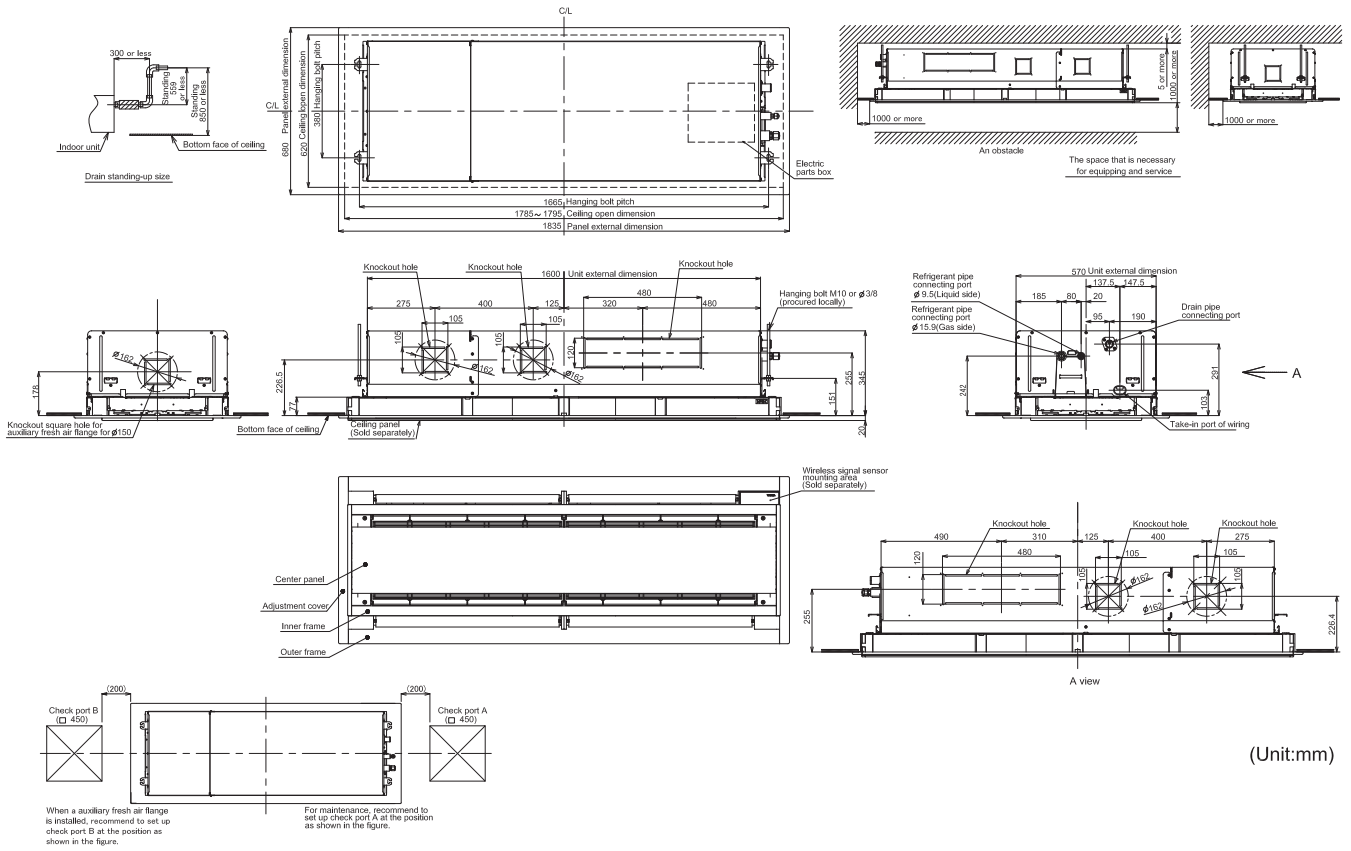


MMU-AP0182WH, 0242WH, 0272WH, AP0302WH





MMU-AP0362WH, 0482WH, 0562WH



(Unit:mm)



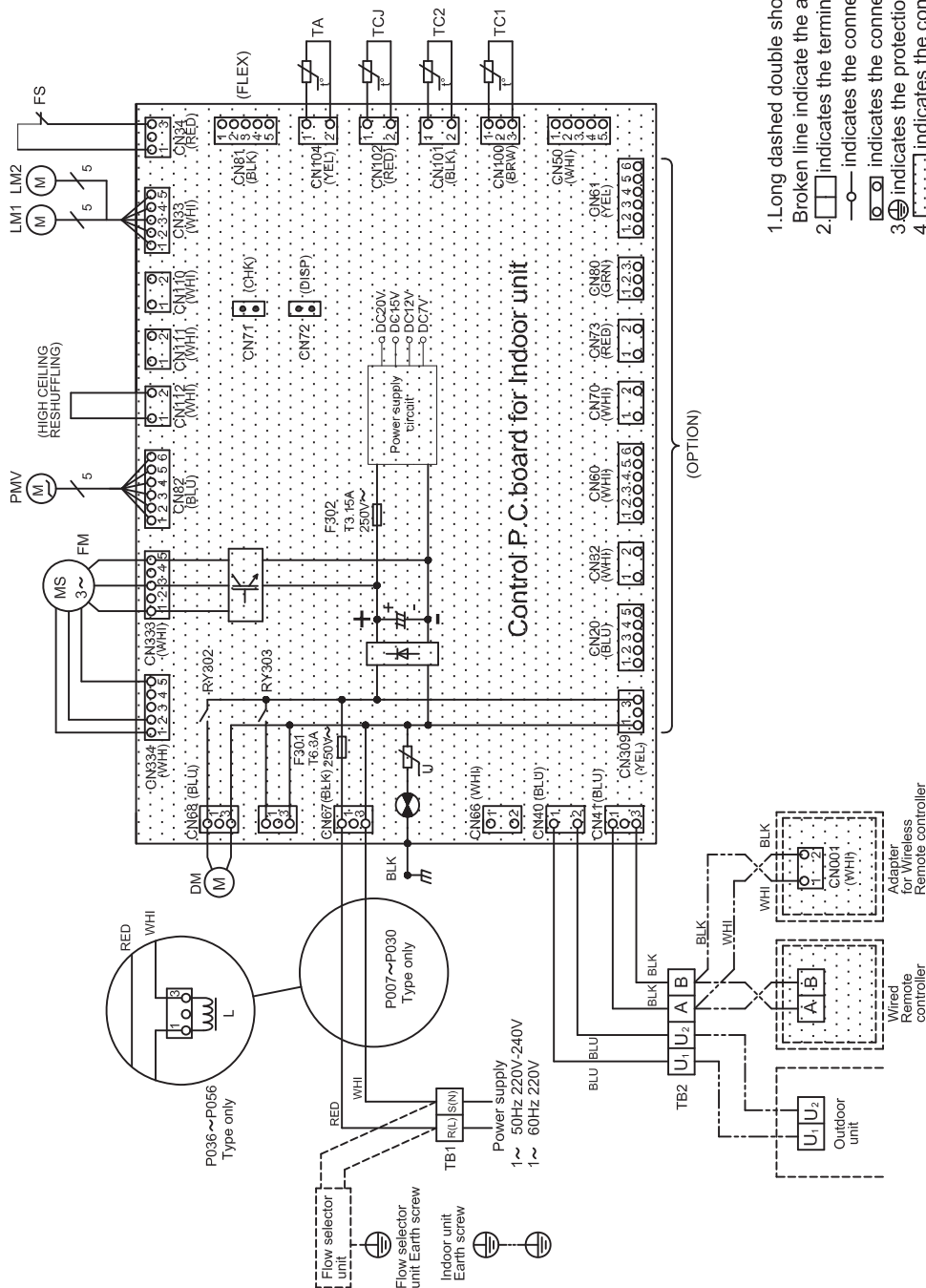
3. Wiring diagram

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

Color Indication

RED : RED	GRY : GRAY
WHI : WHITE	GRN : GREEN
YEL : YELLOW	BRW : BROWN
BLU : BLUE	
BLK : BLACK	

Symbol	Parts name
CN**	Connector
DM	Drain pump Motor
F301,302	Fuse
FM	Fan Motor
FS	Float Switch
LM1,2	Louwer Motor
PMV	Pulse Motor Valve
L	Reactor
RY302,303	Relay
TA	Indoor temp sensor
TB1,2	Terminal Block
TC1,TC2,TCJ	Temp sensor

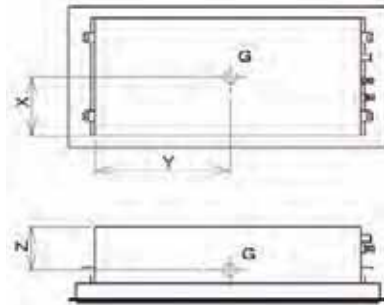


1. Long dashed double short dashed line indicate the wiring site.
2. Broken line indicate the accessories.
3. [] indicates the terminal block.
4. [] indicates the connection terminal.
5. [] indicates the protection ground.
6. [] indicates the control P.C. board.



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		835	175	36	
MMU-AP0362WH					
MMU-AP0482WH					
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

MCA : Minimum Circuit Amps FLA : Full Load Amps
 MOCP : Maximum Overcurrent Protection (Amps)



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		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	1.4	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
37.0	1.7	1.4	1.9	1.5	2.1	1.6	2.1	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	
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	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
	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	
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	2.2	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	
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	3.0	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]

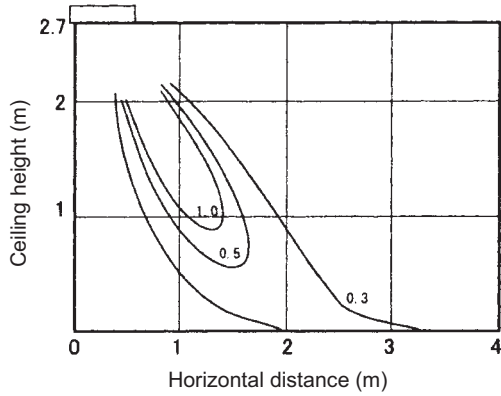
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
036	10.0	9.2	6.9	10.2	7.3	10.9	7.8	11.2	7.7	11.5	7.7	12.2	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
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	
048	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
	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	
056	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	



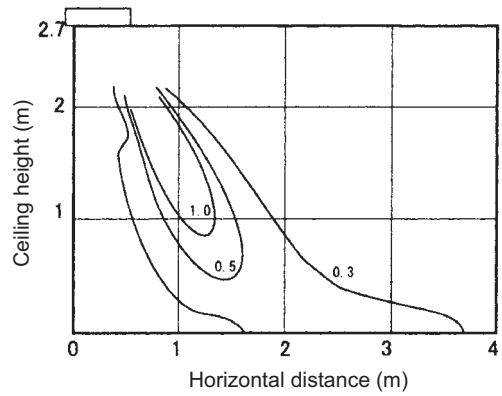
7. Air throw distance chart

Unit: [m/s]

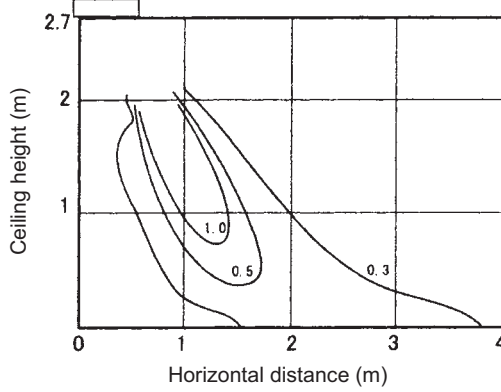
MMU-AP0072WH, AP0092WH, AP0122WH, AP0152WH



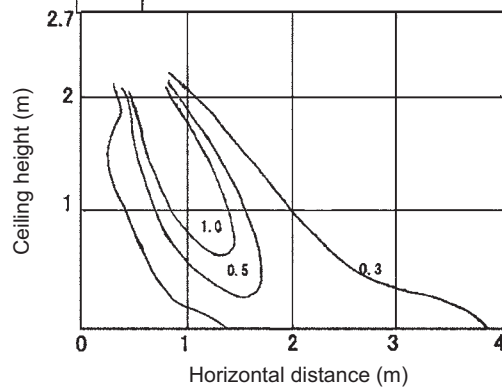
MMU-AP0182WH



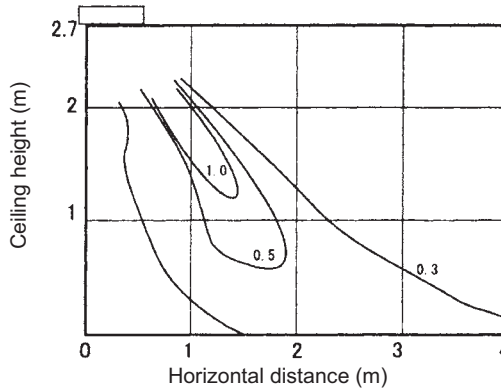
MMU-AP0242WH, AP0272WH



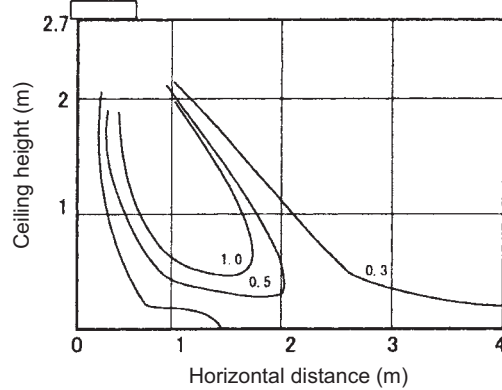
MMU-AP0302WH



MMU-AP0362WH, AP0482WH

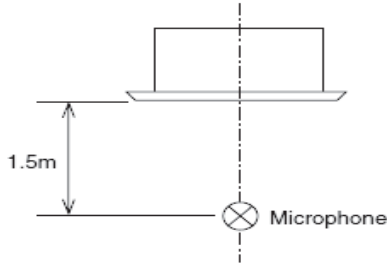


MMU-AP0562WH



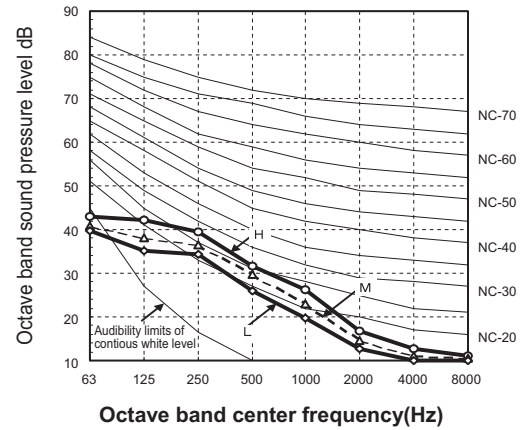


8. Sound characteristics (NC-Curve)



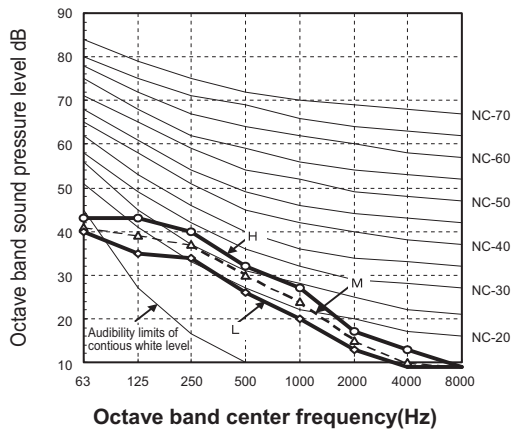
MMU-AP0072WH, AP0092WH, 0122WH

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



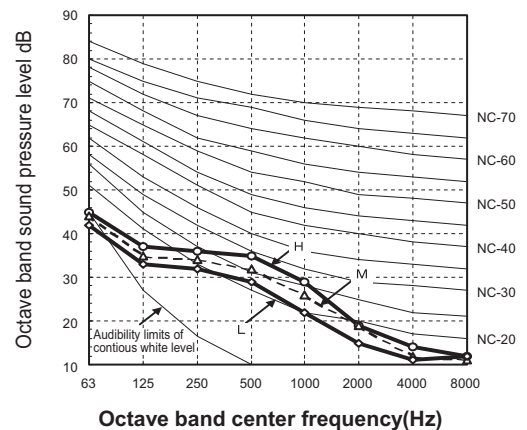
MMU-AP0152WH

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



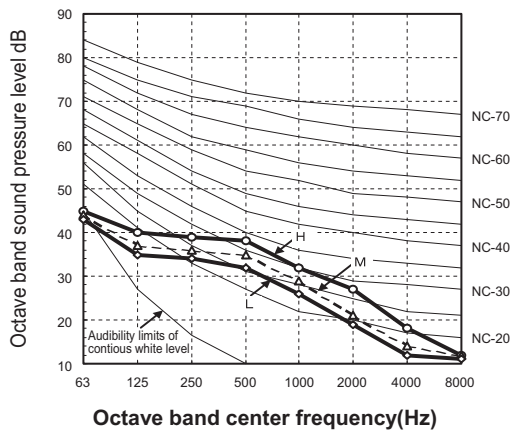
MMU-AP0182WH

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



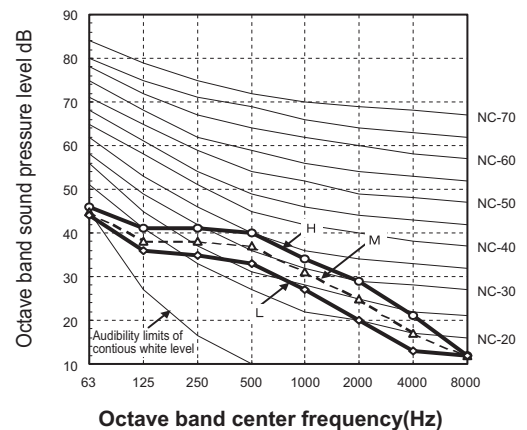
MMU-AP0242WH, AP0272WH

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



MMU-AP0302WH

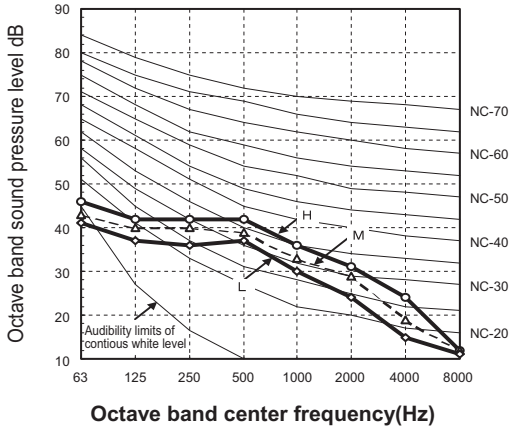
Sound pressure level (dB(A))	H - M - L
	40 - 37 - 34





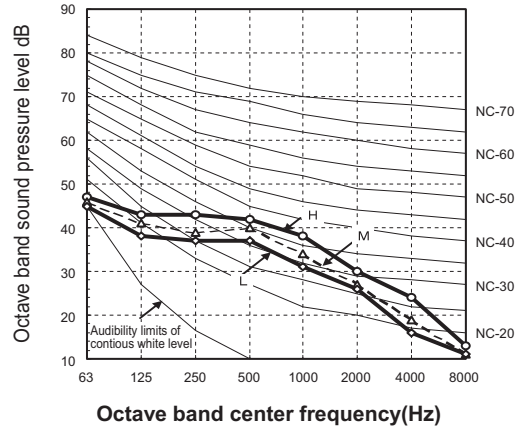
MMU-AP0362WH

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



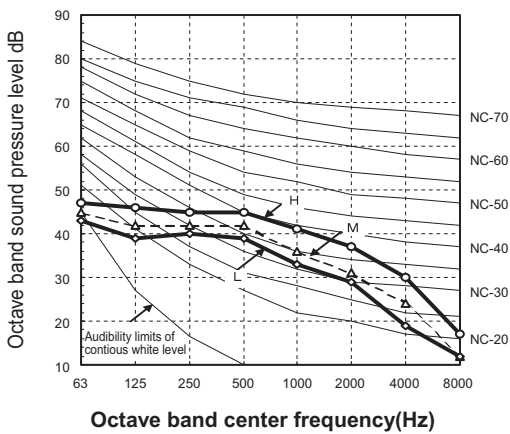
MMU-AP0482WH

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) .

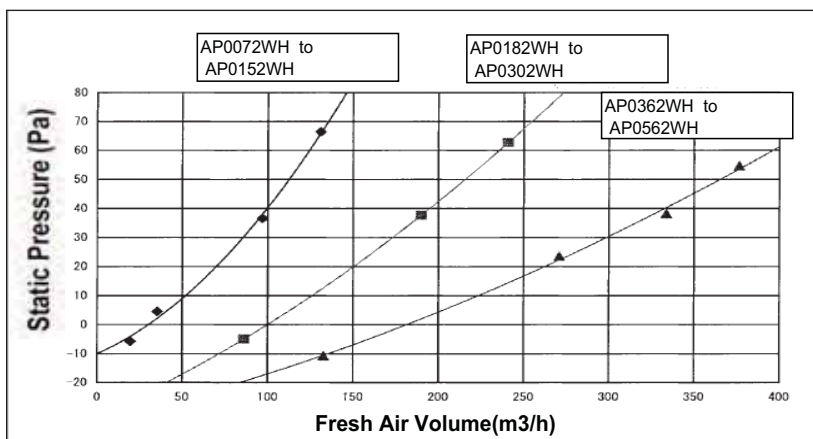
Caution

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 accelerate 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

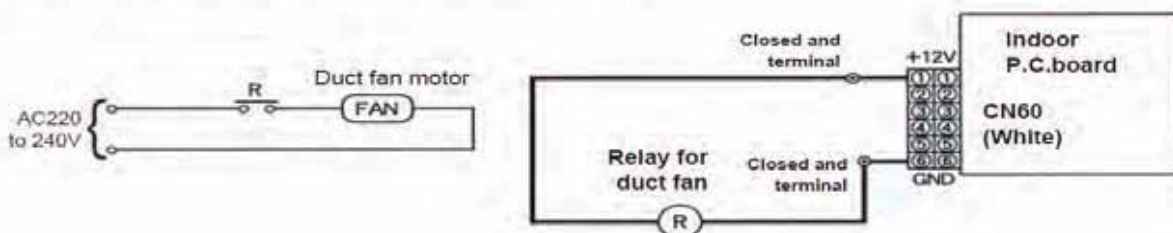
Up to 20% fresh air intake ratio is available by using the booster fan.

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

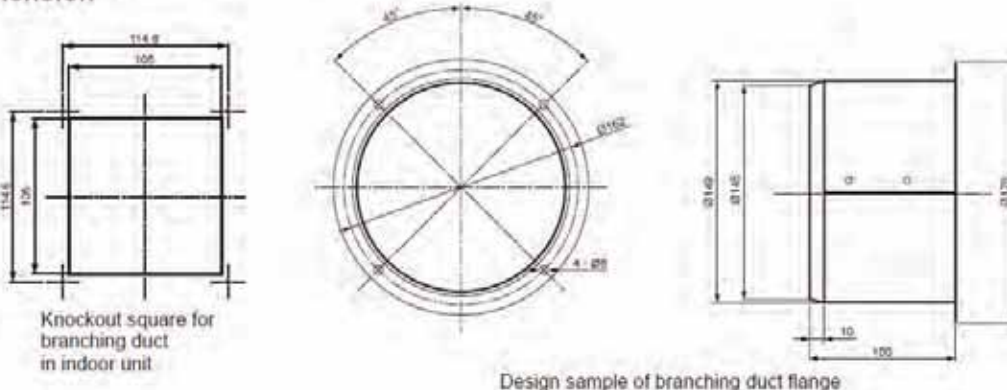


Inter - lock circuit

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 .



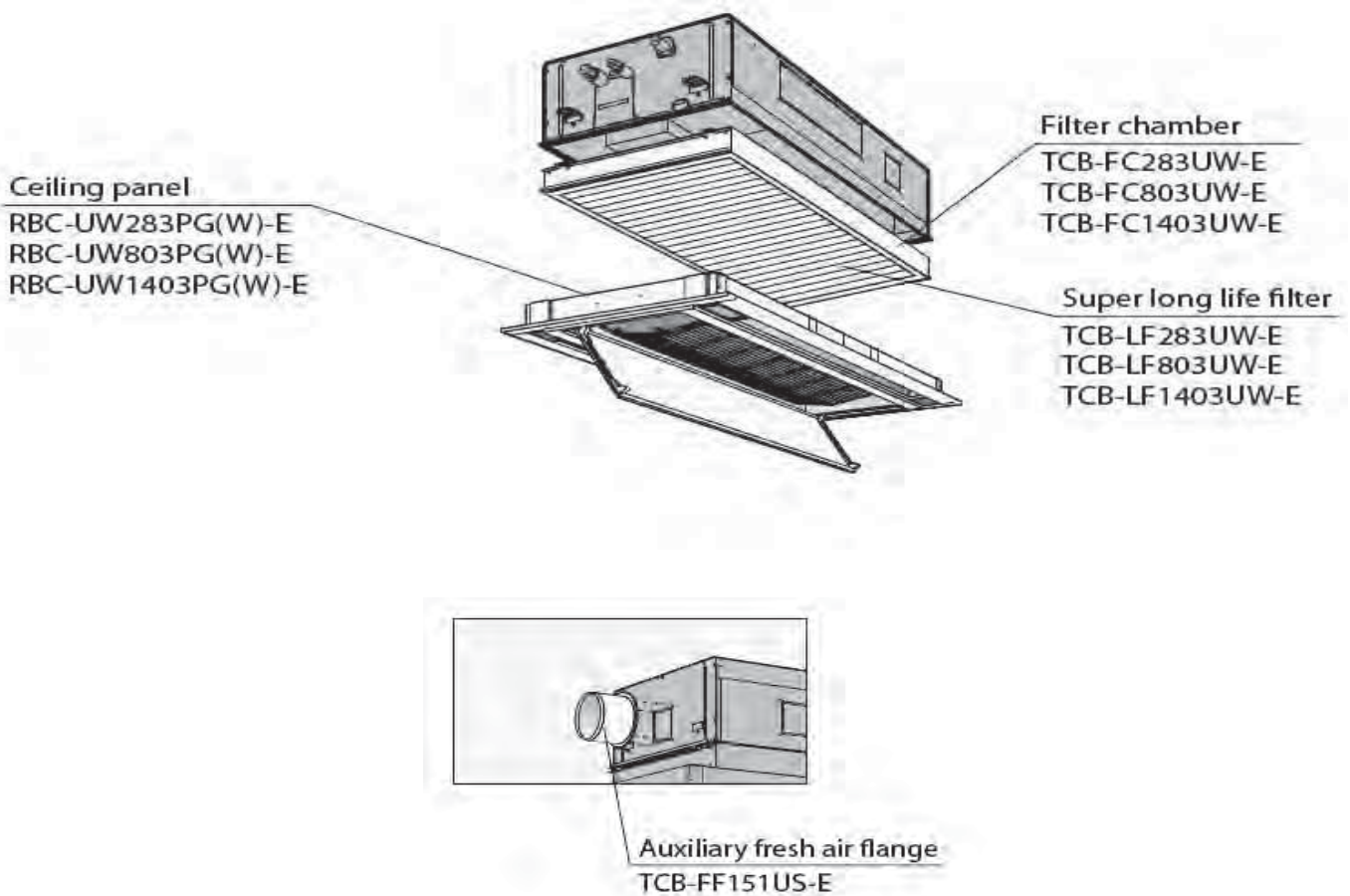
Dimension





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.	





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		MMU-	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	
Electrical characteristics		1 phase 50Hz 230V (220-240V) (Separate power supply for indoor units is required.)								
		Power supply								
		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-insulating 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 dimensions		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) (m ³ /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.

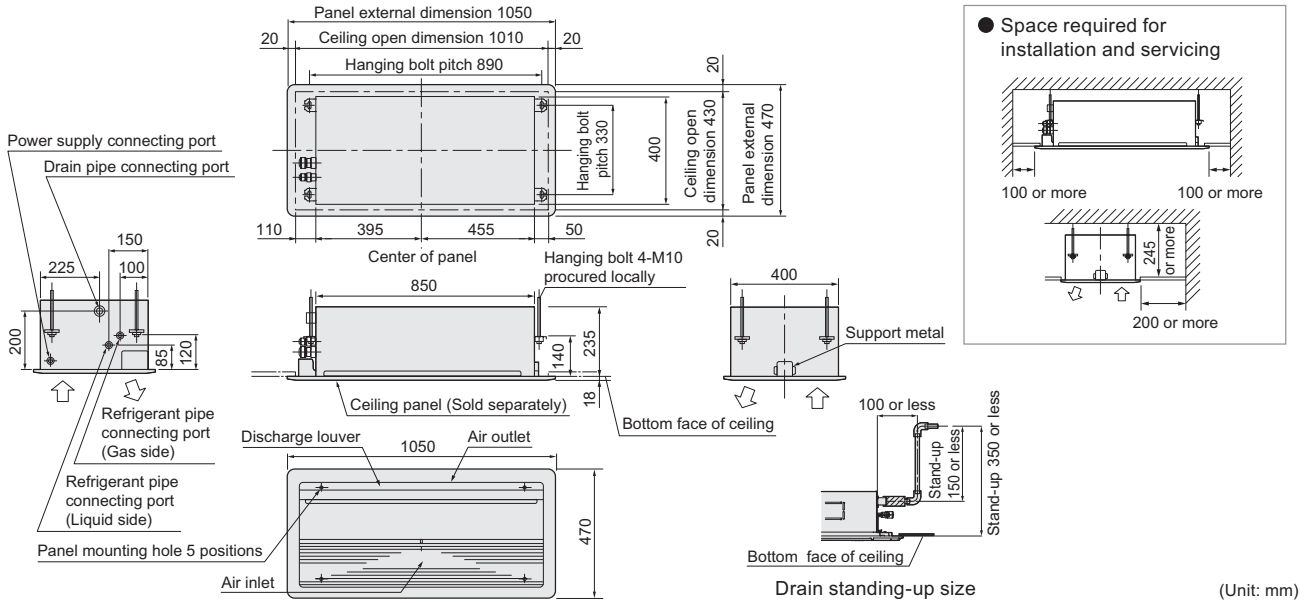
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

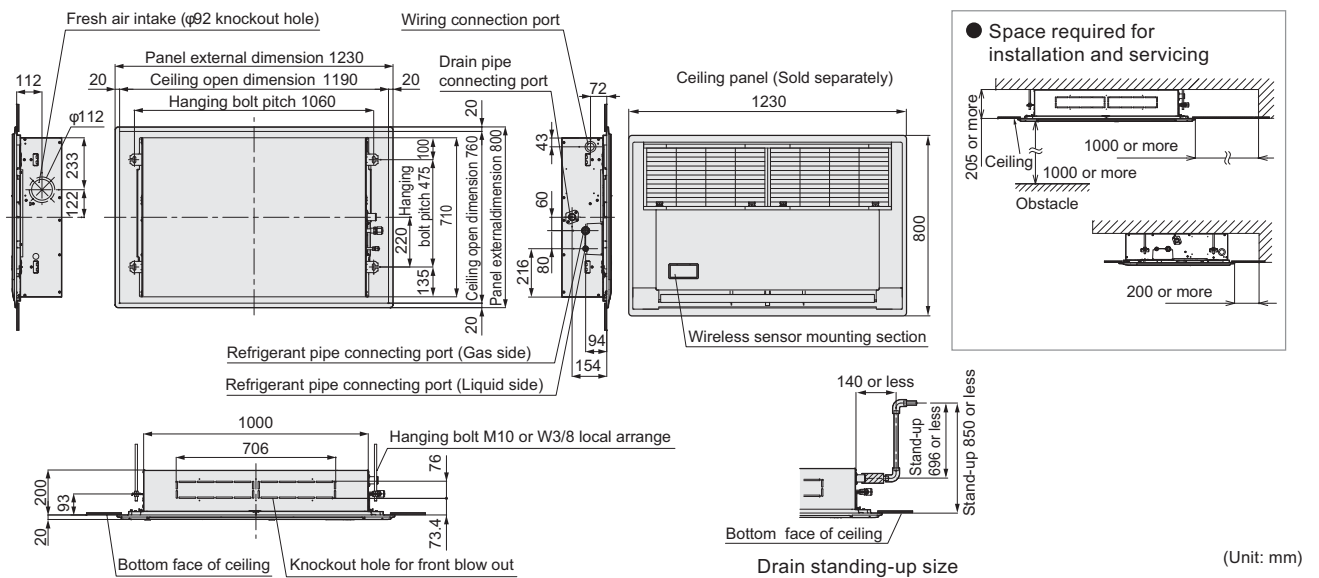


2. Dimension

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



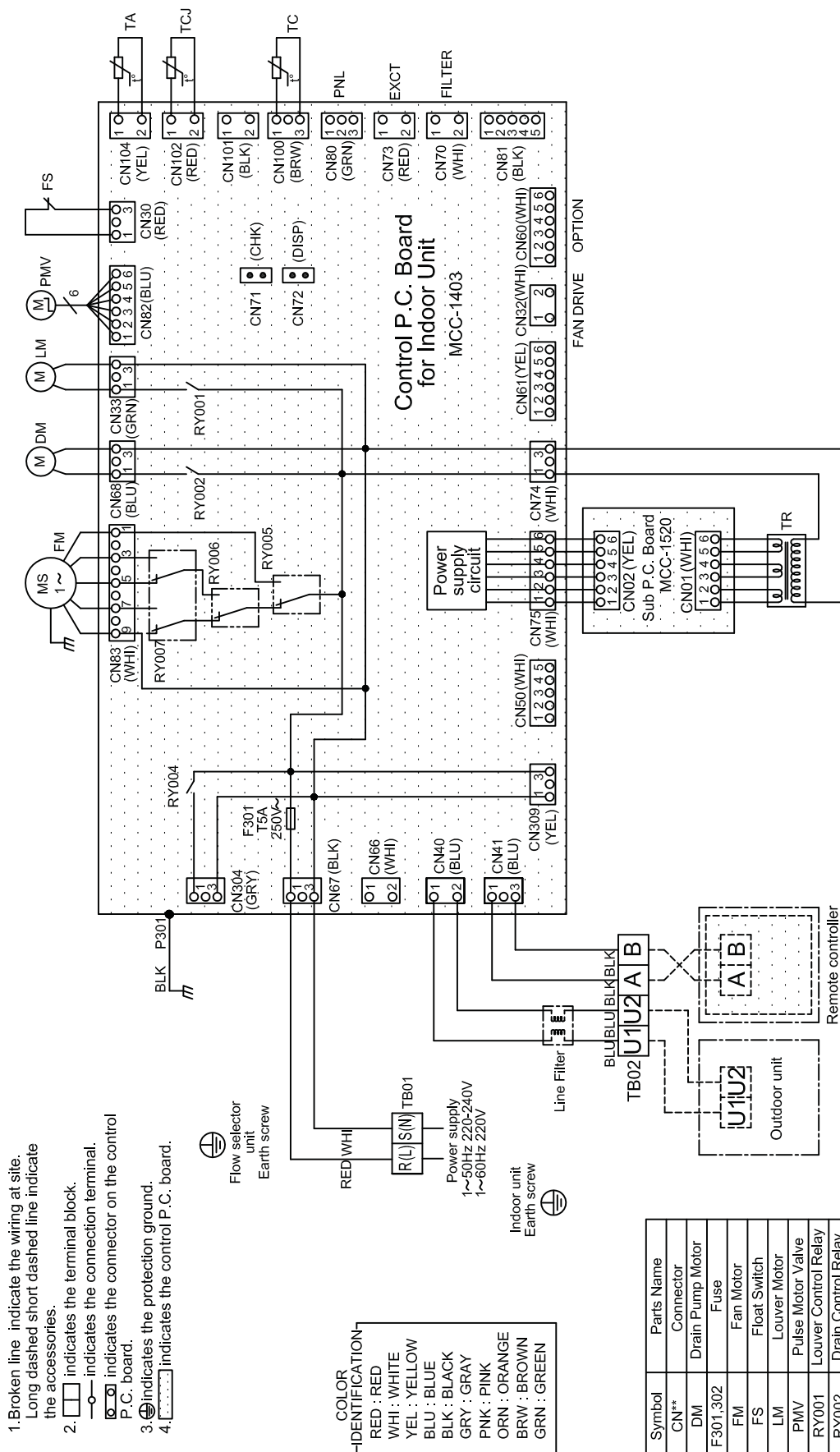
MMU-AP0154SH-E, AP0184SH-E, AP0244SH-E





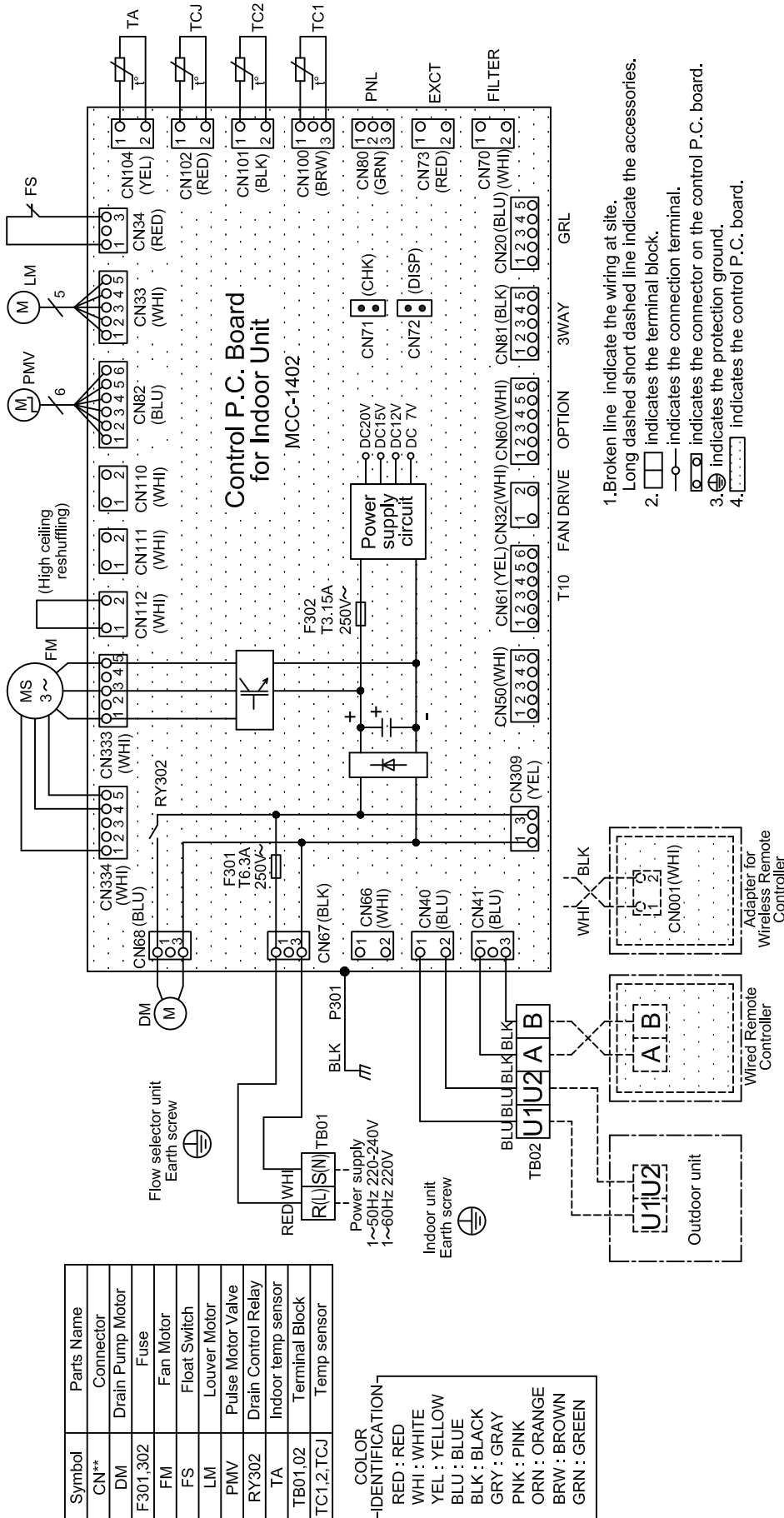
3. Wiring diagram

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





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

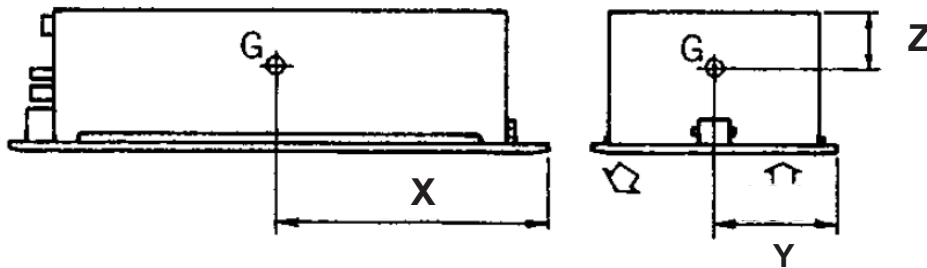




4. Center of Gravity

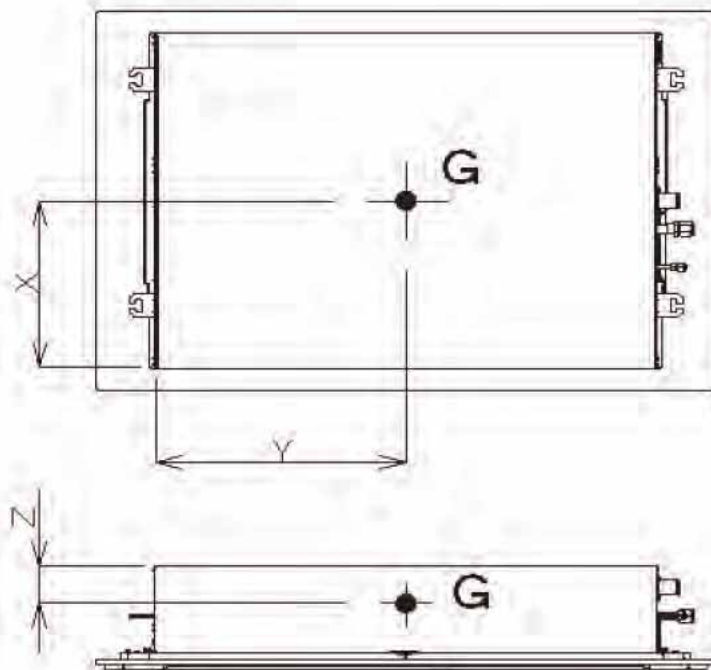
1-way YH Type

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					
MMU-AP0244SH-E				22	





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 0184 SH-E	230-1-50	198	264	0.030	0.42	0.53	15
	MMU-AP 0244 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)



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	
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	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
	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	
012	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)

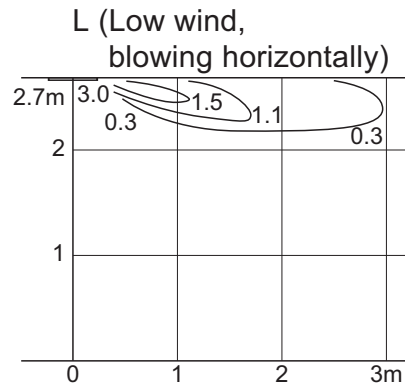
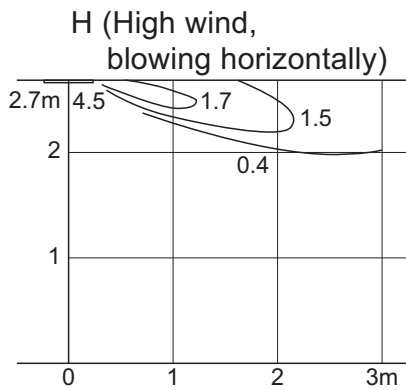
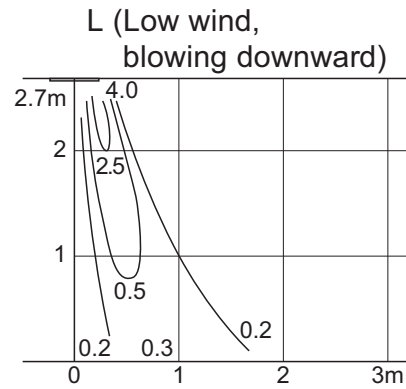
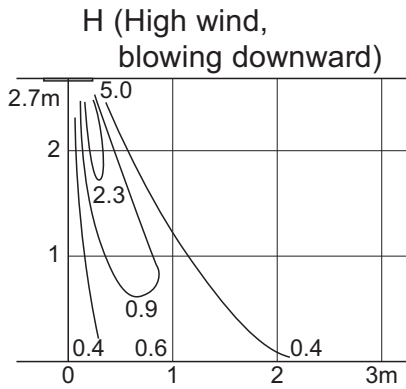
TC : Total capacity [kW] SHC : Sensible capacity [kW]

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	
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	
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	
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	

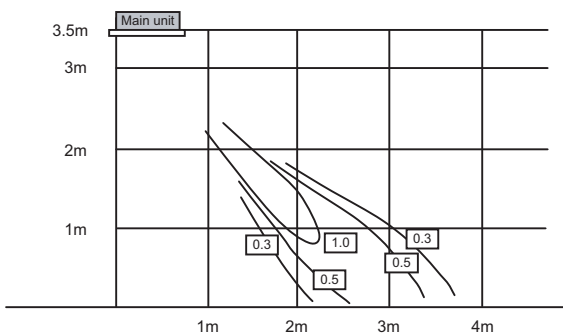


7. Air throw distance chart

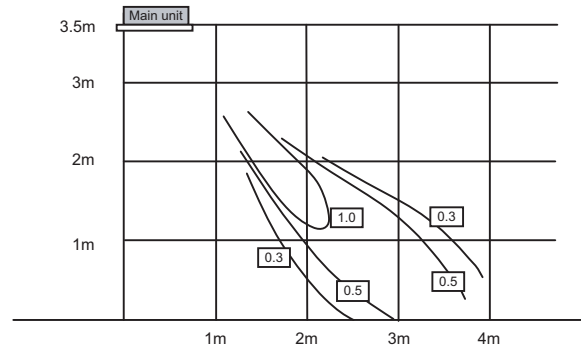
MMU-AP0074YH-E, AP0094YH-E, AP0124YH-E



MMU-AP0154SH-E, AP0184SH-E



MMU-AP0244SH-E



unit : [m/s]

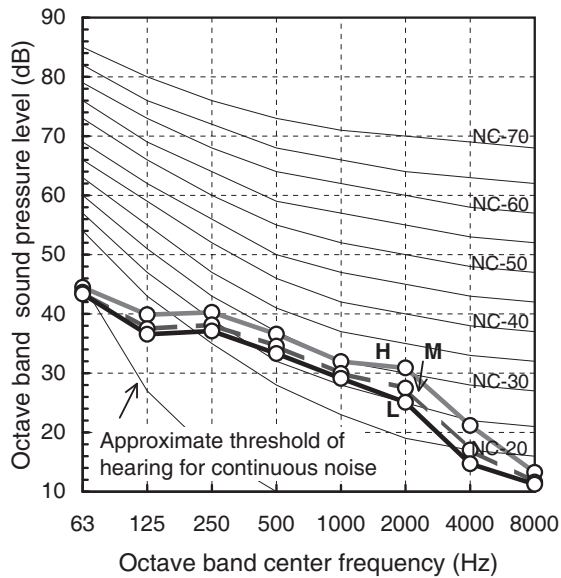


8. Sound Characteristics (NC Curve)

1-way (SH series) Air Discharge Cassette Type

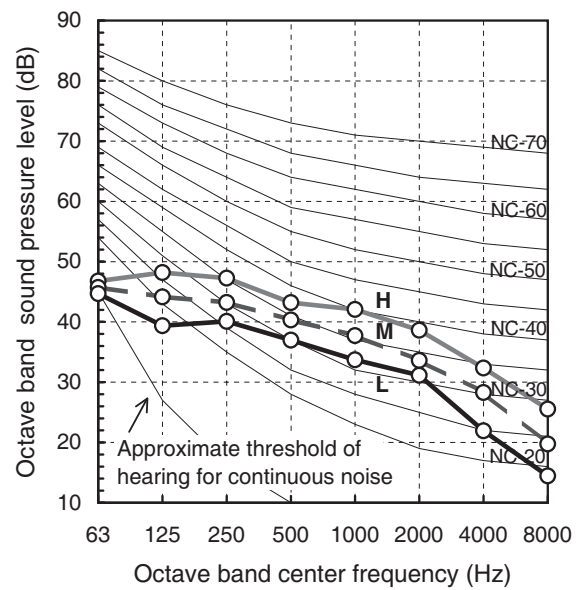
MMU-AP0154SH-E

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



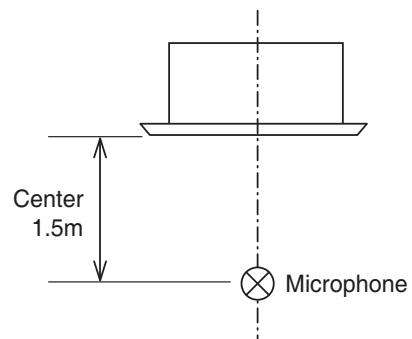
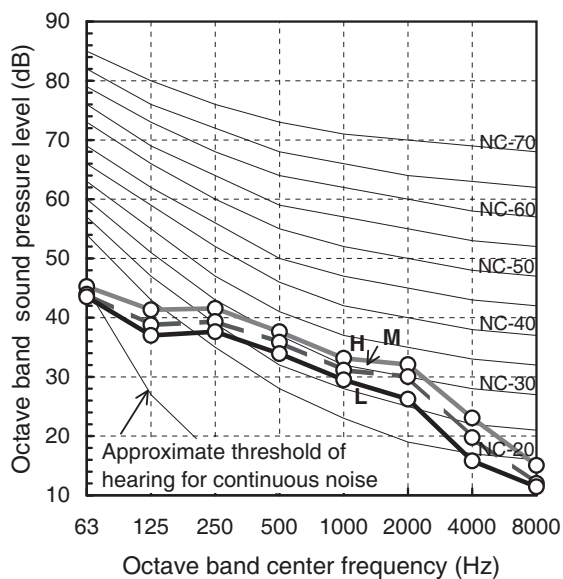
MMU-AP0244SH-E

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.

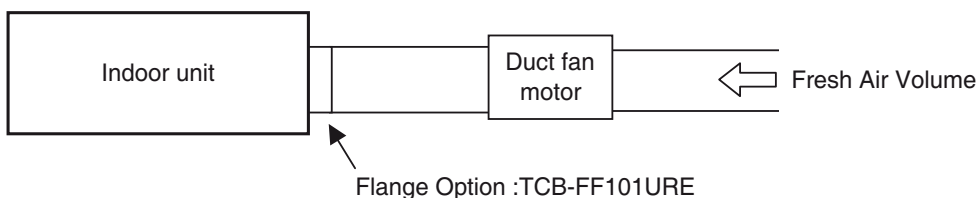
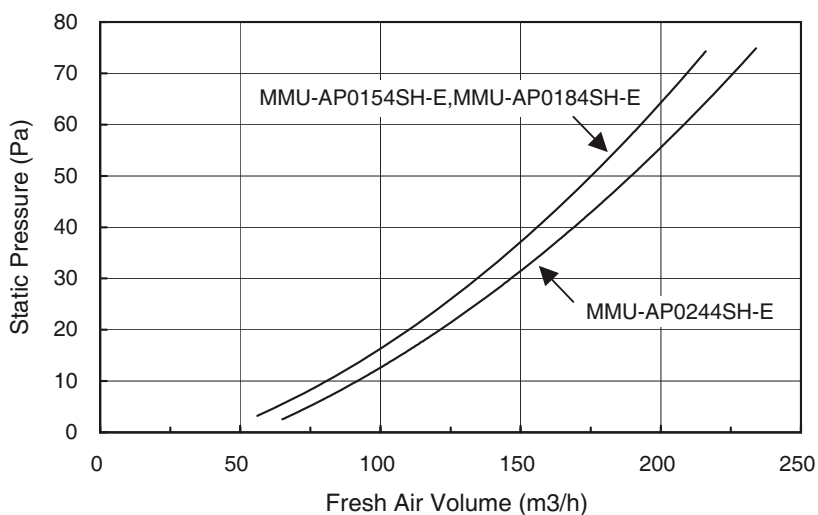
Model name	MMU-	AP0154SH-E	AP0184SH-E	AP0244SH-E
Standard air flow	(m ³ /h)	750	780	1140

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.

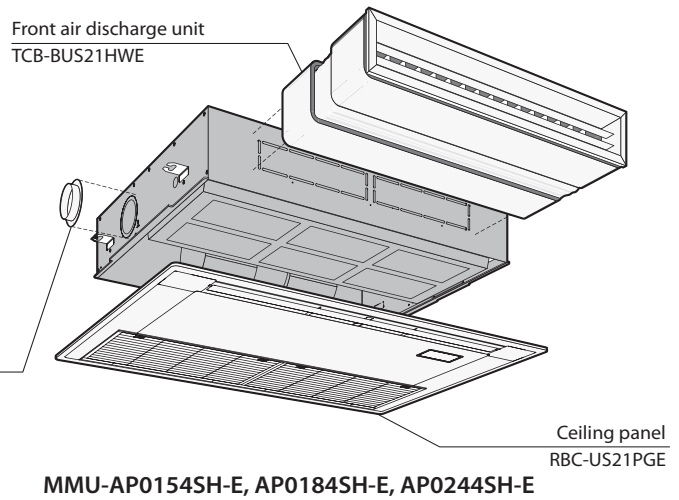
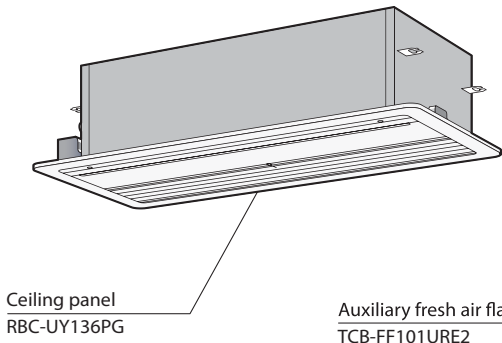
(Carry out the trial operation following the installation manual of the indoor unit.)



10. Accessories

Parts name	Model name	Applied model	Note	Remarks
Ceiling panel	RBC-UY136PG	MMU-AP***4YH-E	Required accessory	
	RBC-US21PGE		Required accessory	
Front air discharge unit	TCB-BUS21HWE	MMU-AP***4SH-E		
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

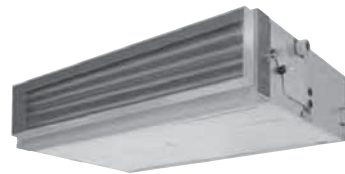




11-2-5. Concealed Duct Type

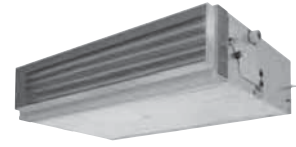
Concealed Duct Type

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) (m ³ /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.

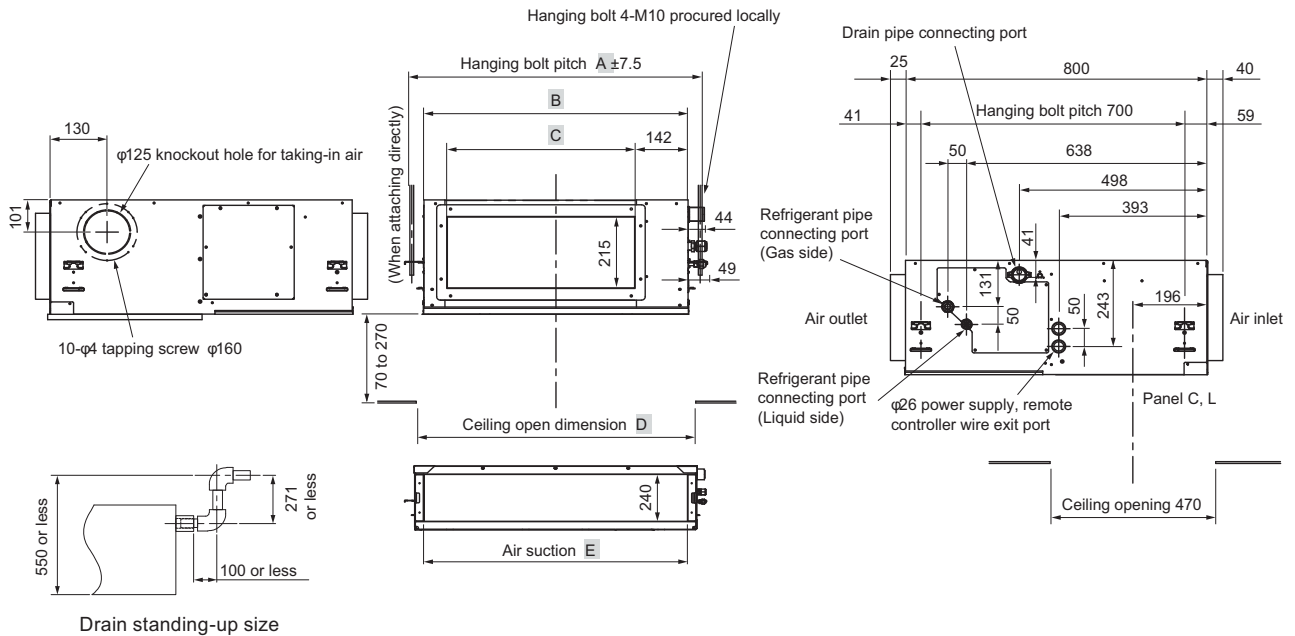
Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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



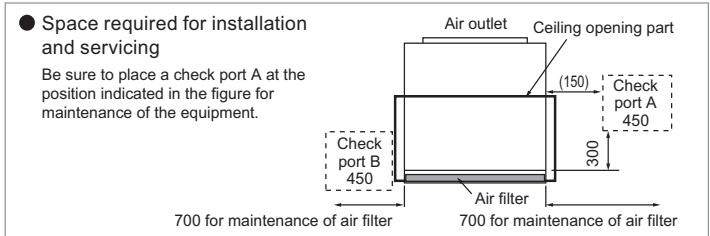
2. Dimension

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



Drain standing-up size

Model	MMD-	A	B	C	D	E
AP0074BH-E, AP0094BH-E, AP0124BH-E		616	550	350	600	470
AP0154BH-E, AP0184BH-E		766	700	500	750	620
AP0244BH-E, AP0274BH-E, AP0304BH-E		1066	1000	800	1050	920
AP0364BH-E, AP0484BH-E, AP0564BH-E		1416	1350	1150	1400	1270

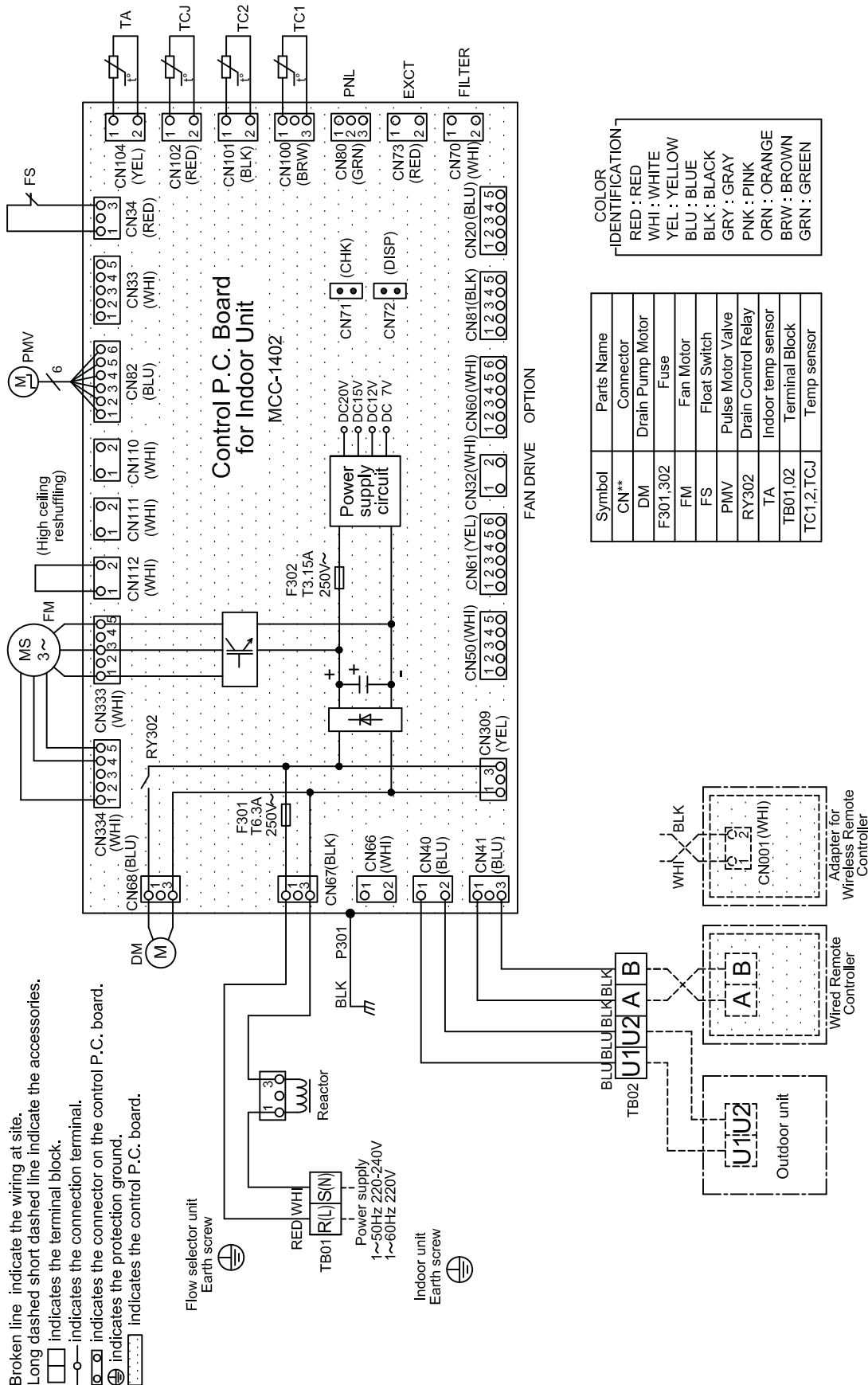


(Unit: mm)



3. Wiring diagram

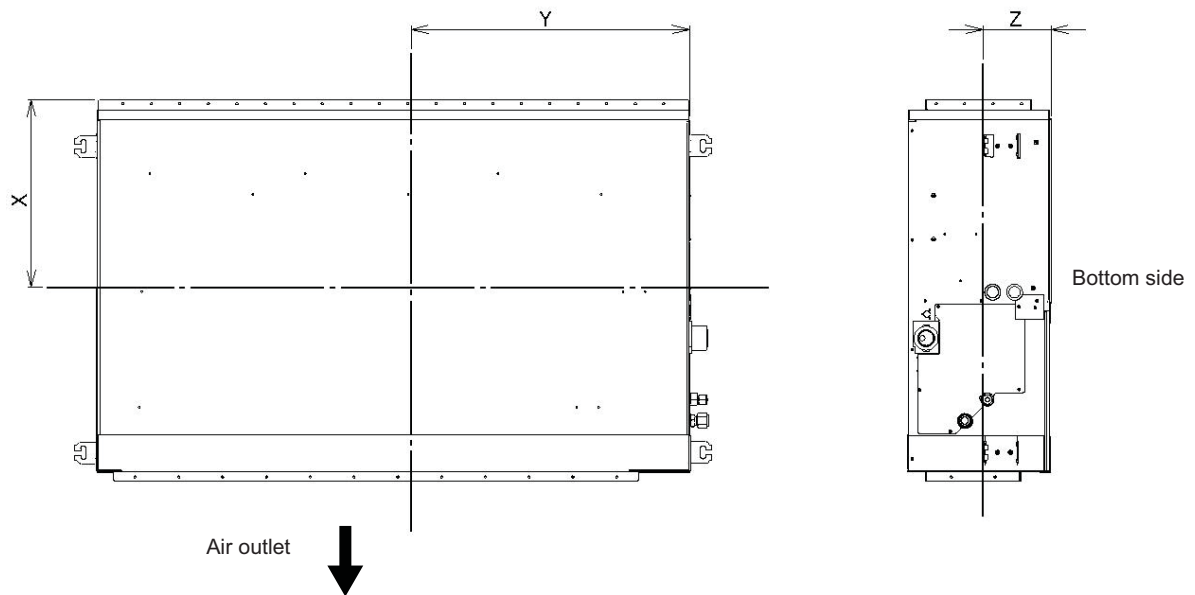
MMD-AP0074BH-E, AP0094BH-E, AP0124BH-E, AP0154BH-E, AP0184BH-E, AP0244BH-E, AP0274BH-E, AP0304BH-E, AP0364BH-E, AP0484BH-E, AP0564BH-E





4.Center of Gravity

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





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)



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 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	
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	1.9	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	
015	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	20°CDB	23°CDB	23°CDB	26°CDB	26°CDB	27°CDB	27°CDB	28°CDB	28°CDB	30°CDB	30°CDB	32°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	
37.0	4.5	3.2	4.9	3.4	5.3	3.6	5.4	3.6	5.6	3.6	5.9	3.5	6.2	3.5	
39.0	4.3	3.1	4.8	3.3	5.1	3.5	5.3	3.5	5.4	3.5	5.7	3.4	6.0	3.4	
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	
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	
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	
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)**

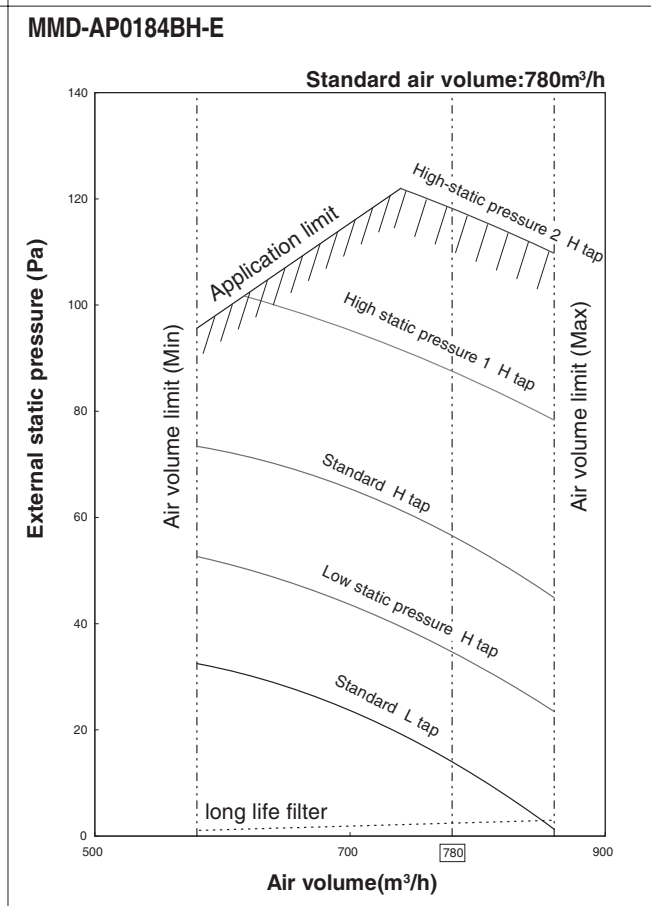
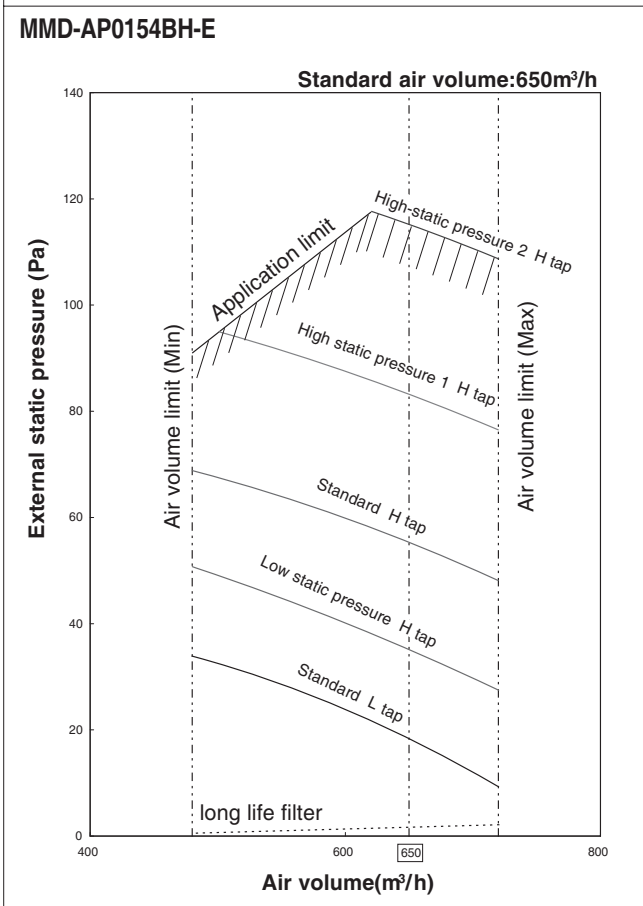
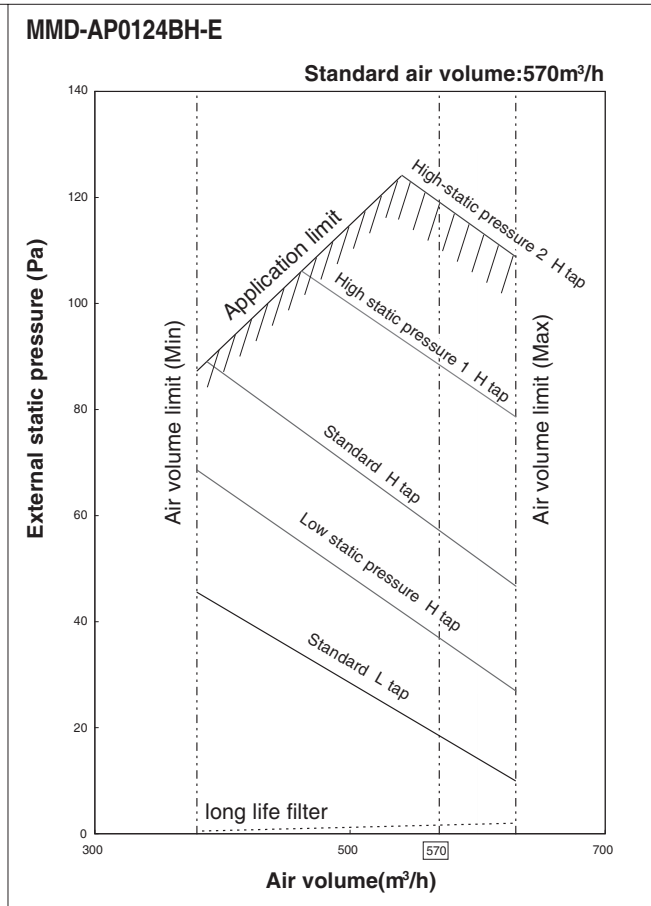
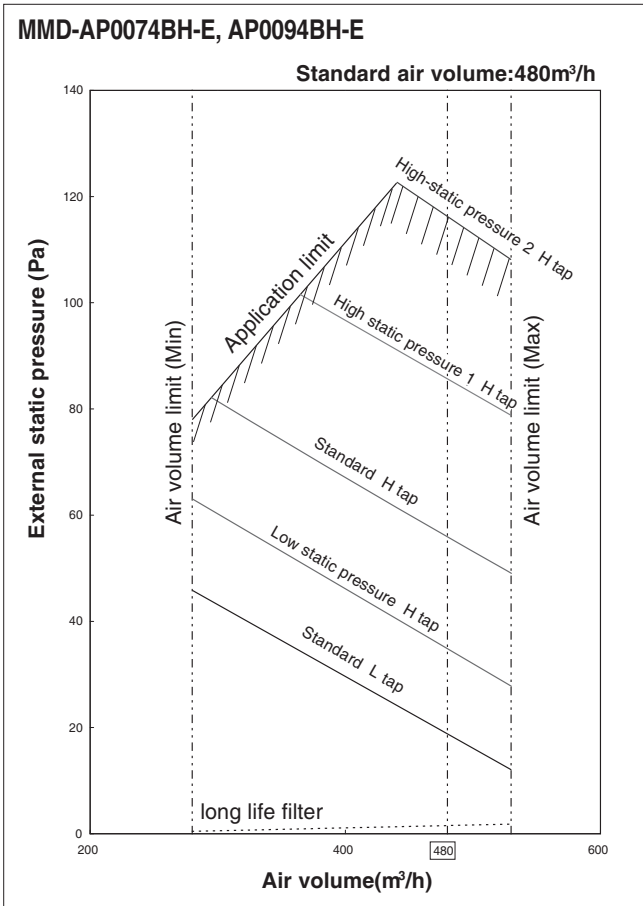
TC : Total capacity [kW] SHC : Sensible capacity [kW]

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	
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	
048	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
	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	
056	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	



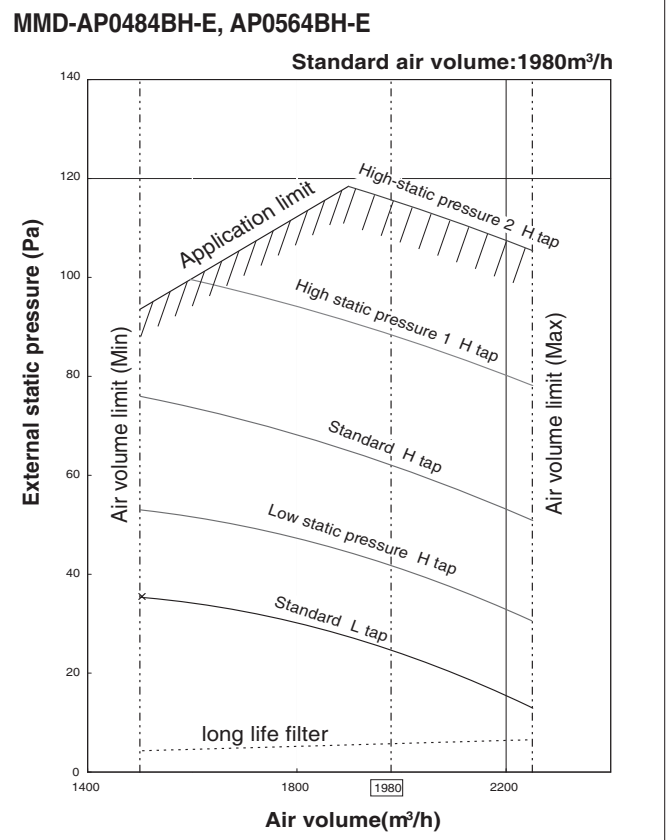
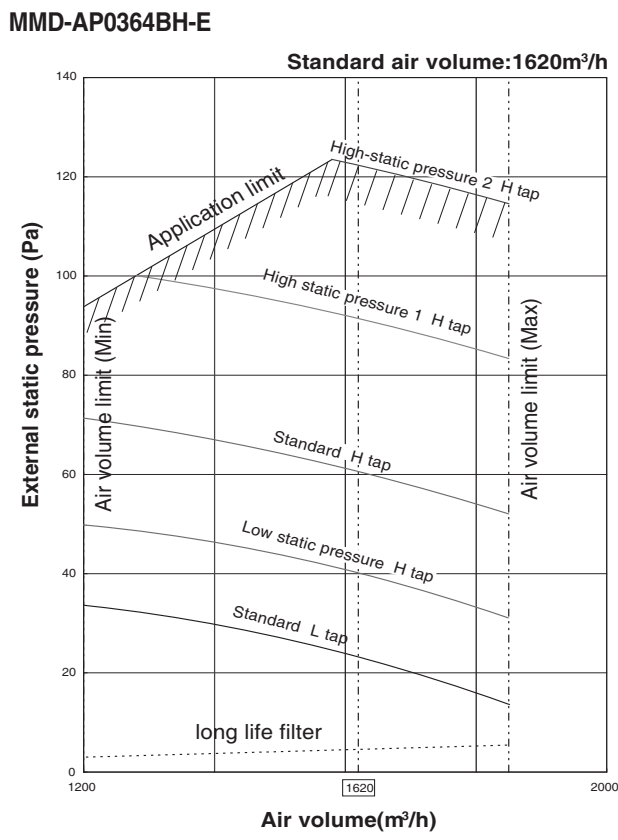
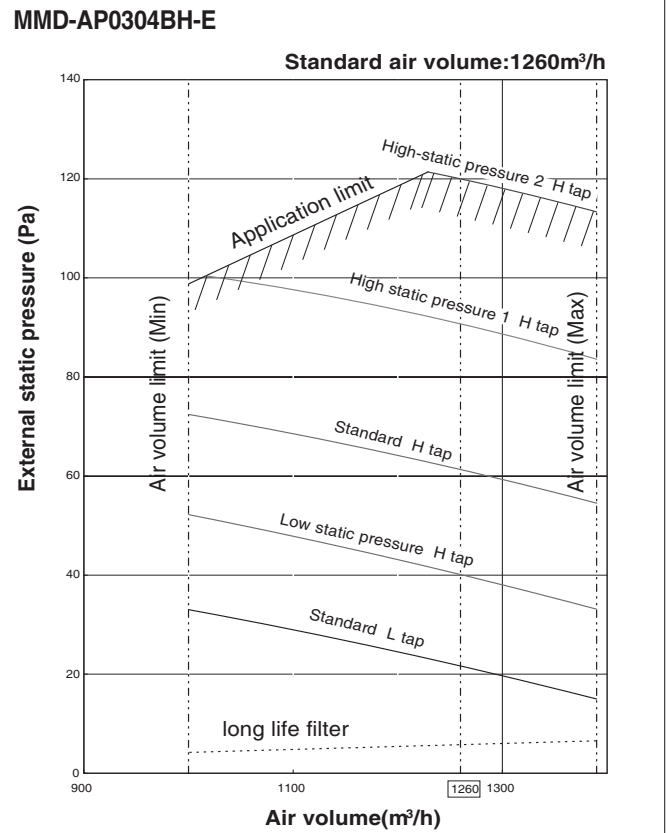
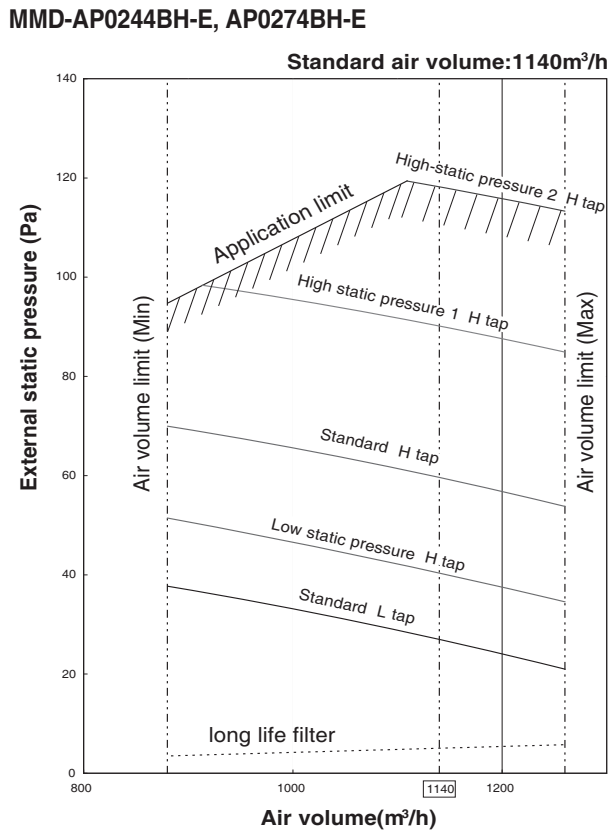
7. Fan characteristics

Factory default : Standard H tap



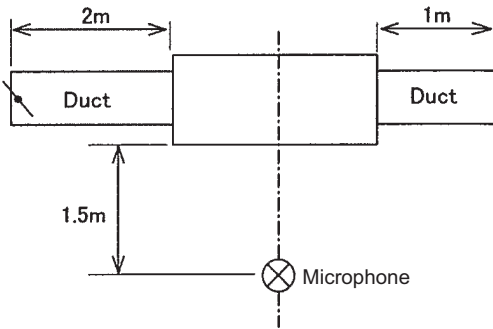


Factory default : Standard H tap



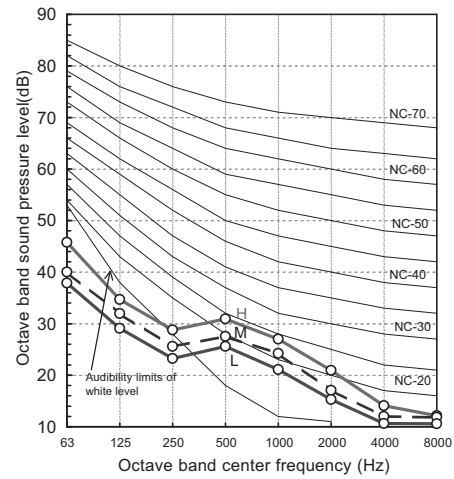


8. Sound level data (NC CURVE)



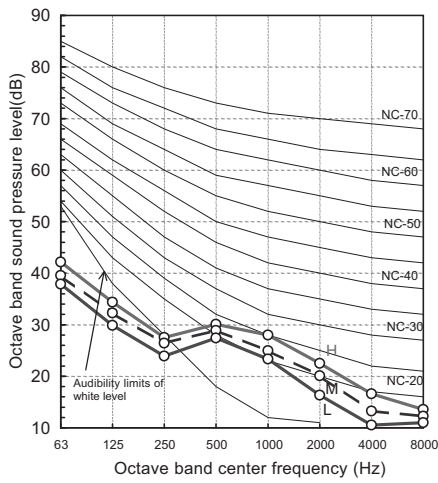
MMD-AP0074BH-E, AP0094BH-E

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



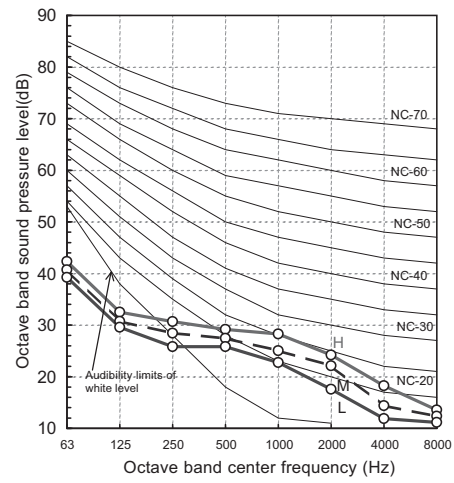
MMD-AP0124BH-E

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



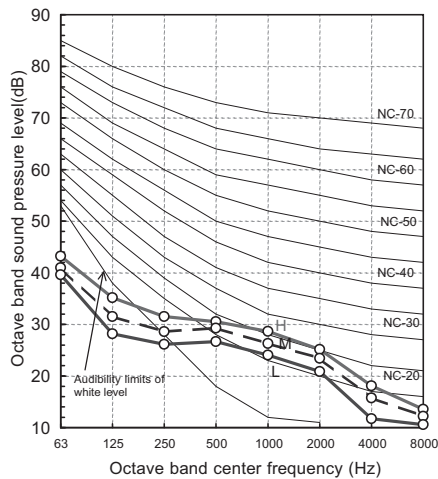
MMD-AP0154BH-E

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



MMD-AP0184BH-E

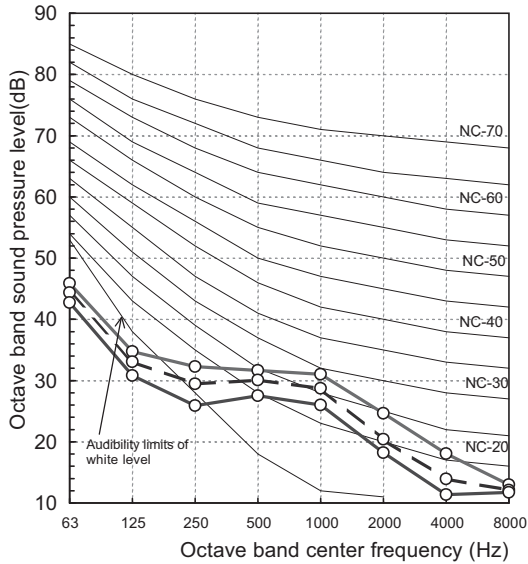
Fan Tap	H	M	L
Overall level (dB(A))	32	30	28





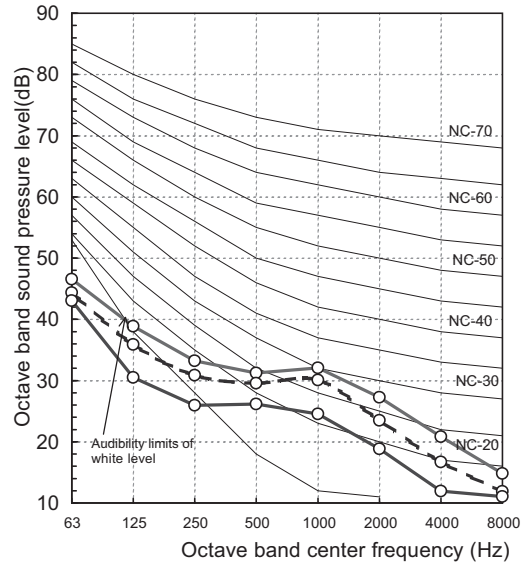
MMD-AP0244BH-E, AP0274BH-E

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



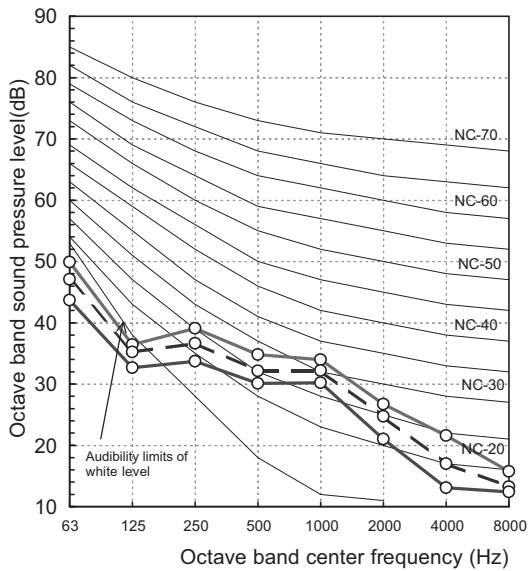
MMD-AP0304BH-E

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



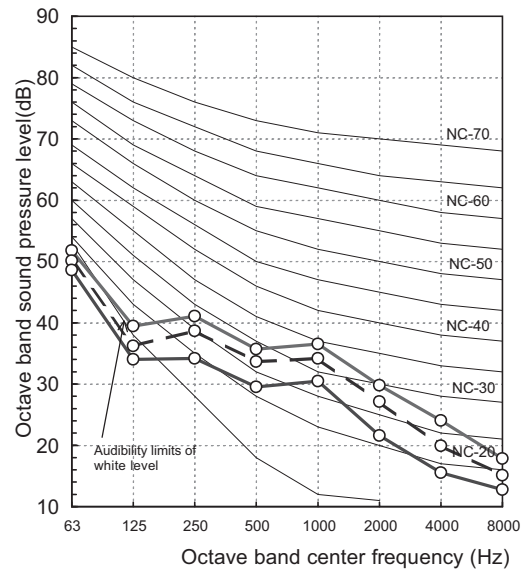
MMD-AP0364BH-E

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



MMD-AP0484BH-E, AP0564BH-E

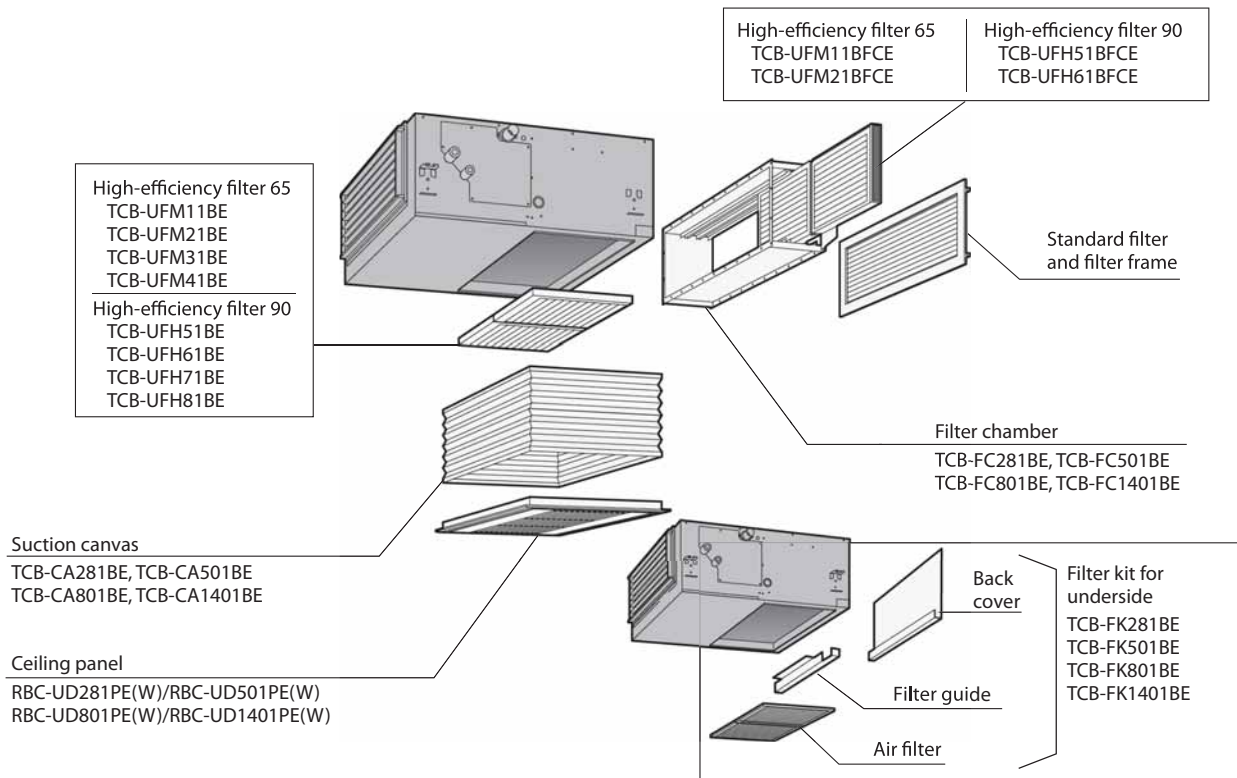
Fan Tap	H	M	L
Sound pressure level (dB(A))	38	36	32





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		
High-efficiency filter 90 (for underside suction)	TCB-UFM41BE	MMD-AP0364/0484/0564BH-E	Dust collecting effect: 90% (NBS Colorimetric method)	
	TCB-UFH51BE	MMD-AP0074/0094/0124BH-E		
	TCB-UFH61BE	MMD-AP0154/0184BH-E		
	TCB-UFH71BE	MMD-AP0244/0274/0304BH-E		
Ceiling panel (half panel for underside suction)	TCB-UFH81BE	MMD-AP0364/0484/0564BH-E		
	RBC-UD281PE(W)	MMD-AP0074/0094/0124BH-E		
	RBC-UD501PE(W)	MMD-AP0154/0184BH-E		
	RBC-UD801PE(W)	MMD-AP0244/0274/0304BH-E		
Suction canvas (for underside suction)	RBC-UD1401PE(W)	MMD-AP0364/0484/0564BH-E		
	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	(m ³ /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	(m ³ /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)	∅ 12.7	∅ 15.9			∅ 22.2			
	Liquid side	(mm)	∅ 6.4	∅ 9.5			∅ 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.

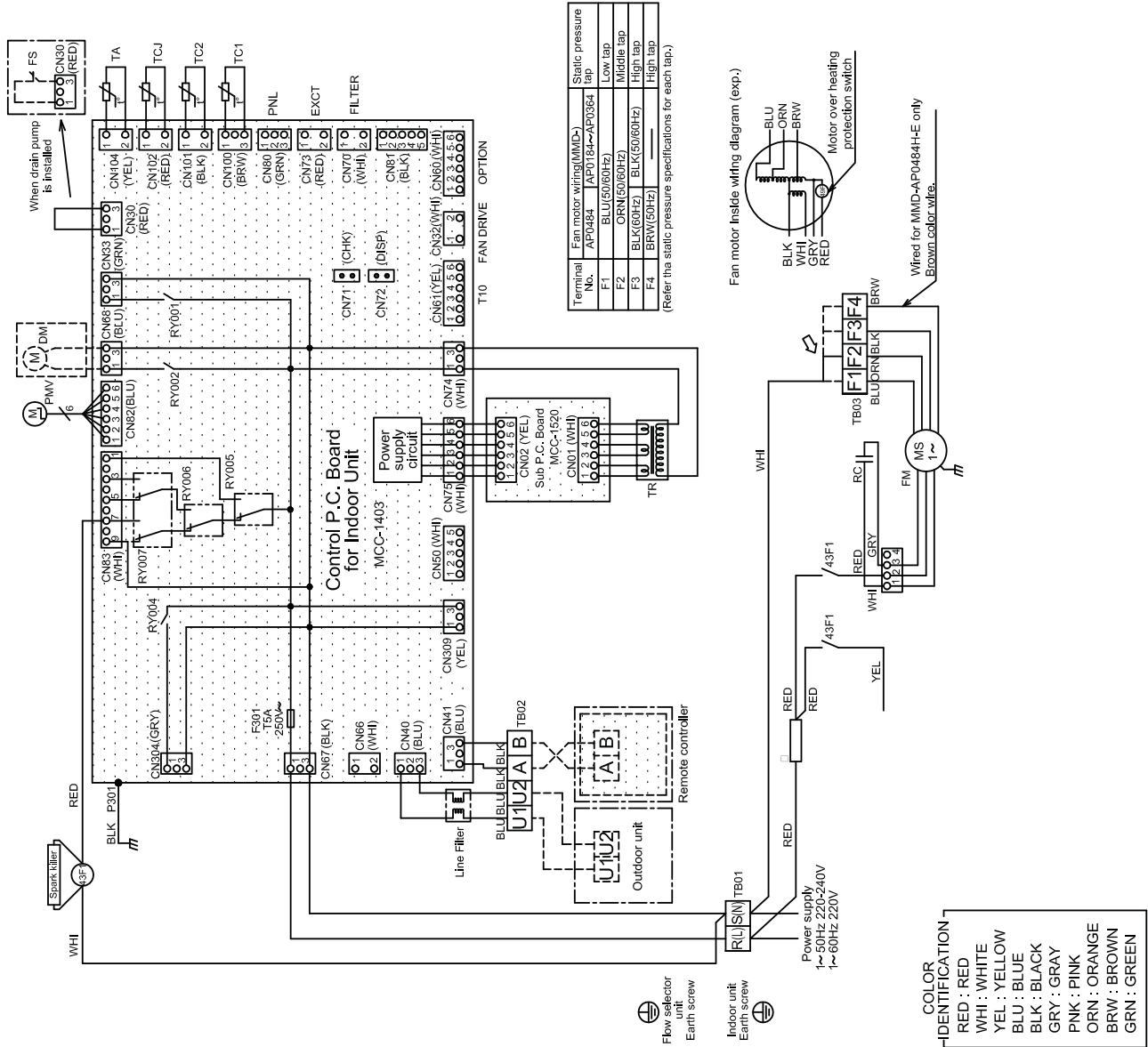
Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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



3. Wiring diagram

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



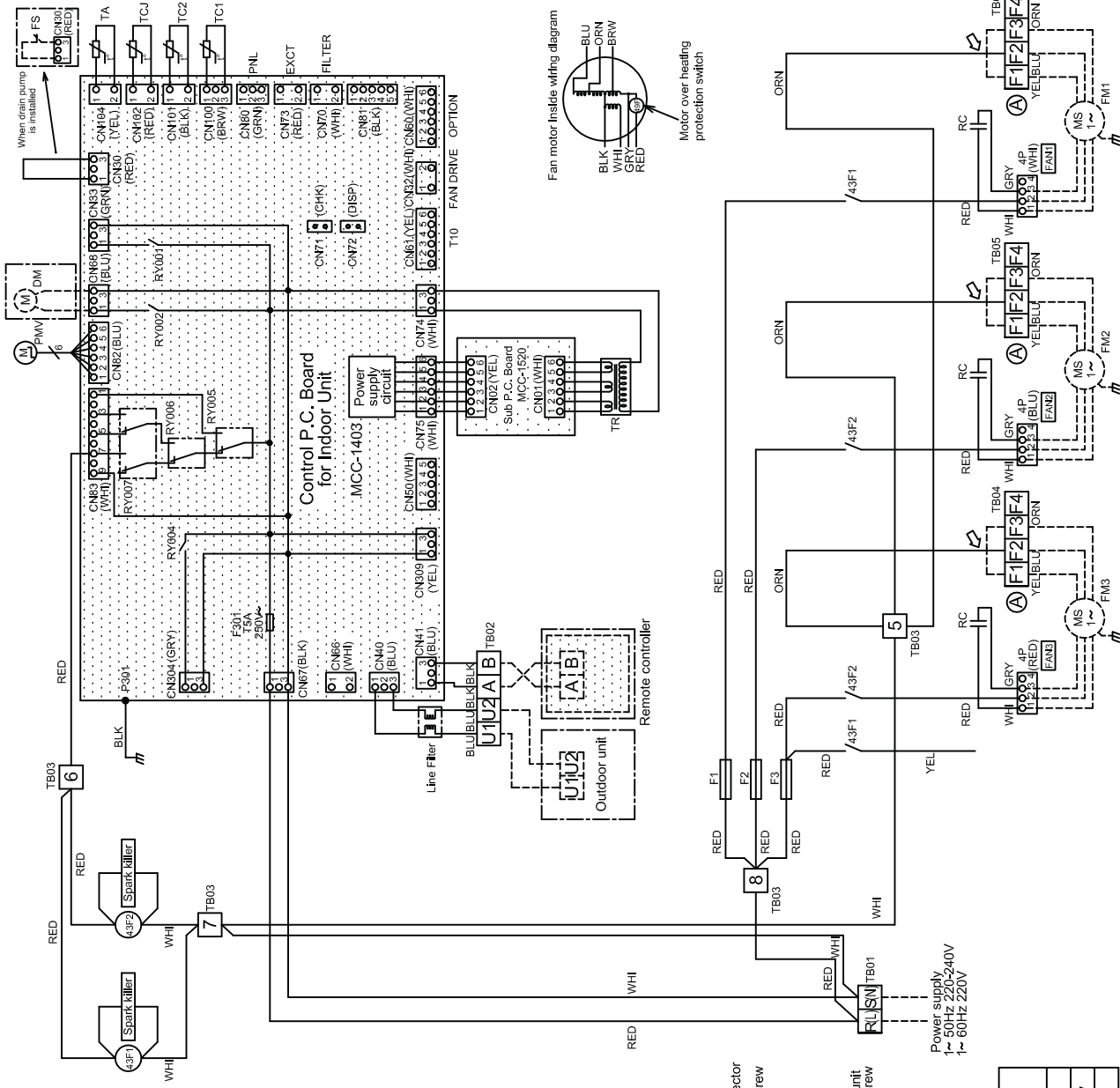
Symbol	Parts Name
43F1, F2	Fan motor Control Relay
CN**	Connector
F	Fuse
F301	Fuse
FM	Fan Motor
PMV	Pulse Motor Valve
RC	Running Capacitor
RY002	Drain Control Relay
RY005, 006, 007	Fan Motor Control Relay
TA	Indoor temp sensor
TB01, 02, 03	Terminal Block
TC1, TC2, TCJ	Temp sensor
TR	Transformer
DM	Drain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

Sold Separately

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



Symbol	Parts Name
43F1, F2	Fan motor Control Relay
CN**	Connector
F1, 2, 3	Fuse for Fan Motor
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, 04, 05, 06	Terminal Block
TC1, TC2, TCJ	Temp sensor
TR	Transformer
DM	Drain Pump Motor
FS	Float Switch

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

1. Broken line indicate the wiring at site. Long dashed short dashed line indicate the accessories.
2. [Symbol] indicates the terminal block. [Symbol] indicates the connection terminal. [Symbol] indicates the connector on the control P.C. board.
3. [Symbol] indicates the protection ground.
4. [Symbol] indicates the control P.C. board.
5. When installing the drain pump connect the float switch connector to CN30 connector.
6. [Symbol] 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.

Flow factor Earth screw
Indoor unit Earth screw

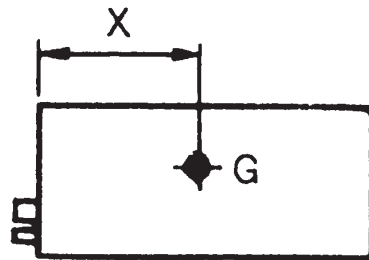
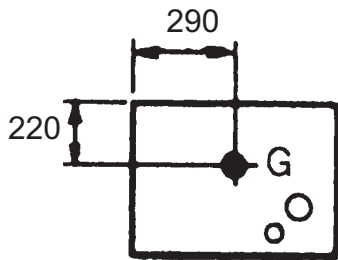
Power supply
1~ 50Hz 220-240V
1~ 60Hz 220V

Terminal No.	Fan motor wiring	Static pressure Pa(mmAq)	Note
F1	YEL	69(7)	
F2	BLU	137(14)	Setting from factory
F3	ORN	196(20)	



4. Center of gravity

Model name	X (mm)	Total weight(kg)
MMD-AP0184H-E	520	50
MMD-AP0244H-E		52
MMD-AP0274H-E		52
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)



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
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	
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	
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	
027	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)**

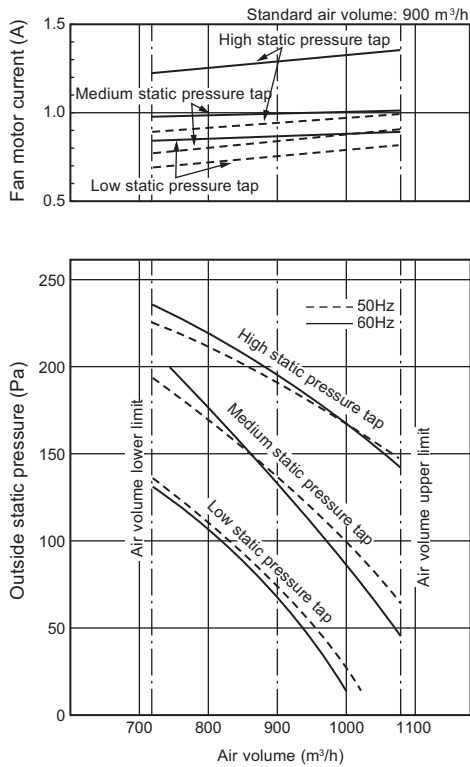
TC : Total capacity [kW] SHC : Sensible capacity [kW]

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	18.3	17.2	27.1	17.2	28.7	17.1	30.0	16.7	

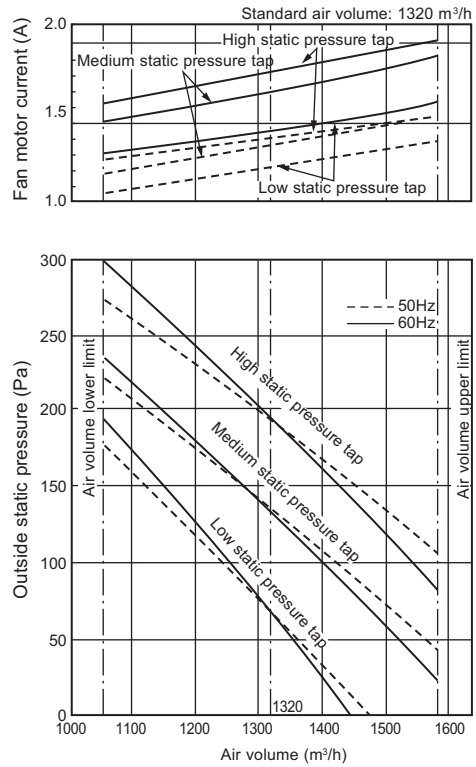


7. Fan characteristic

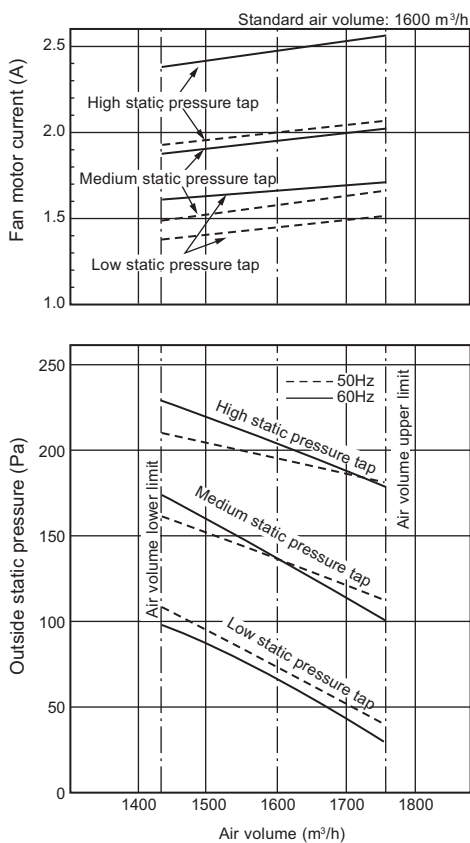
MMD-AP0184H-E



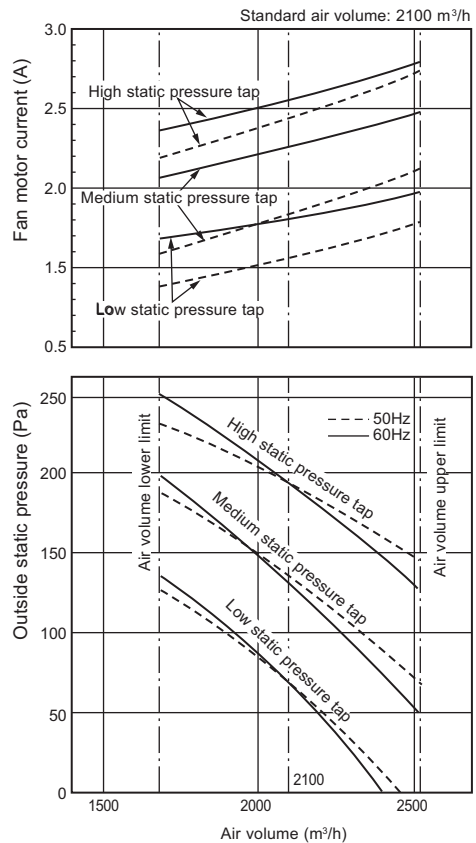
MMD-AP0244H-E, AP0274H-E



MMD-AP0364H-E

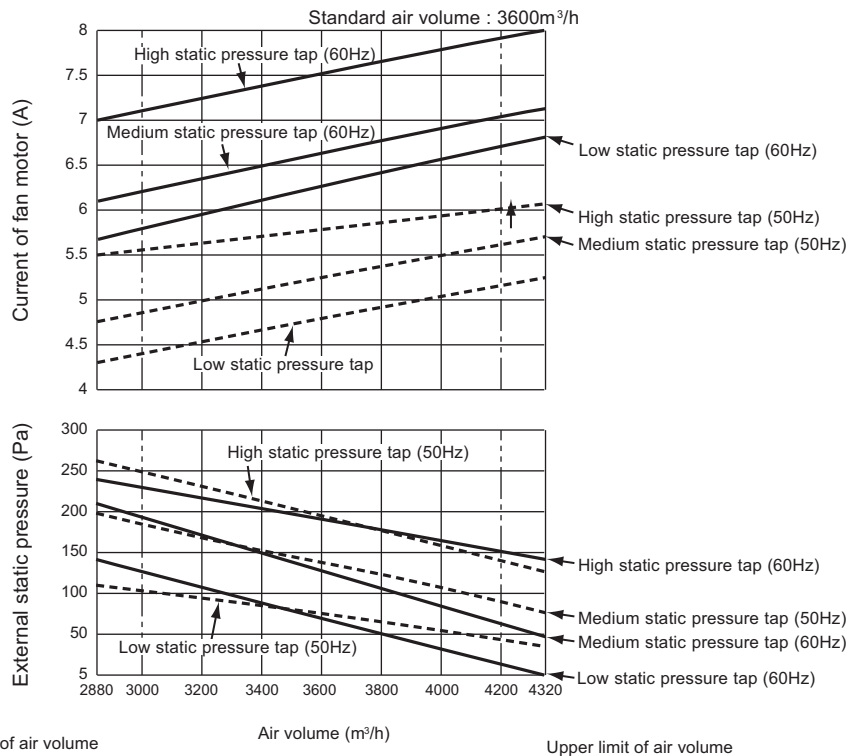


MMD-AP0484H-E

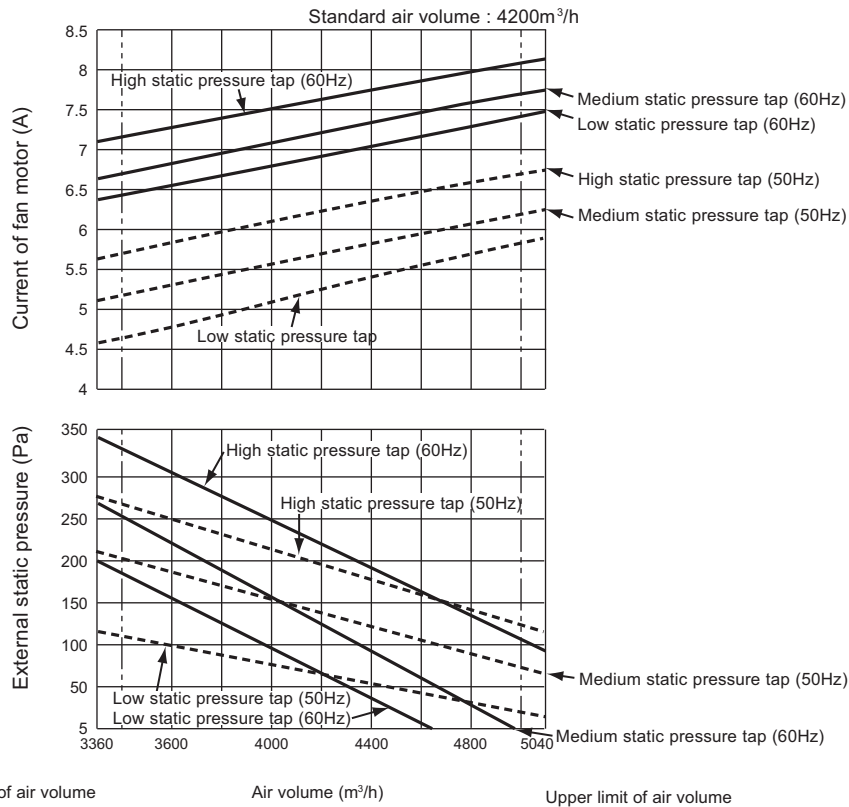




MMD-AP0724H-E



MMD-AP0964H-E



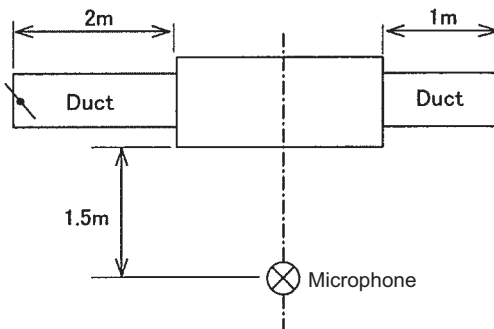
REQUIREMENT

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

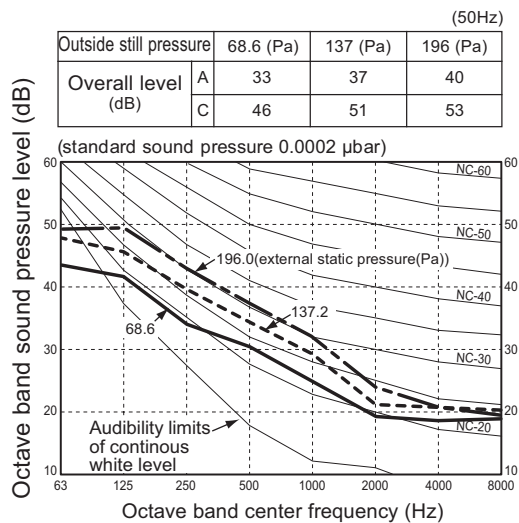


8. Sound level data (NC CURVE)

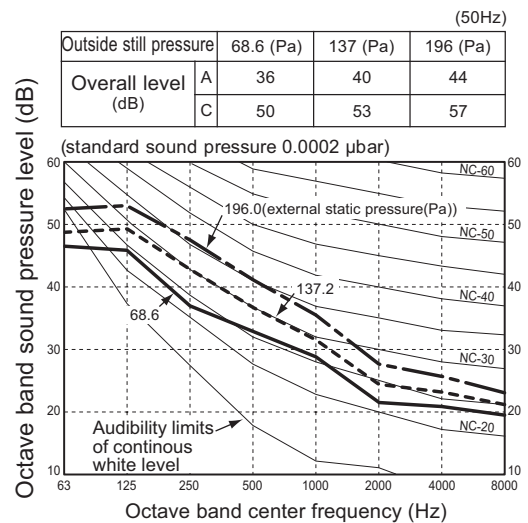
Sound level values shown are based on a measurement in a non resonant room.



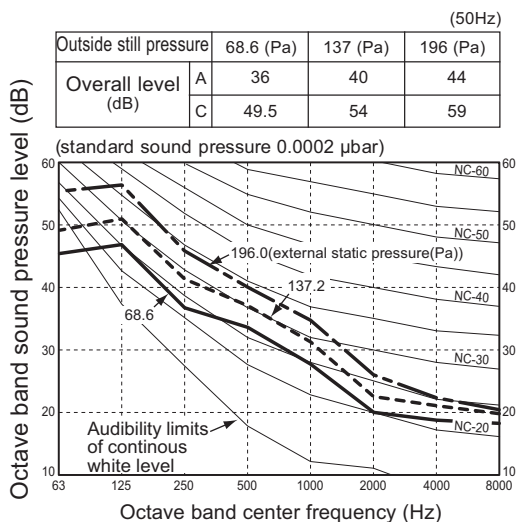
MMD-AP0184H-E



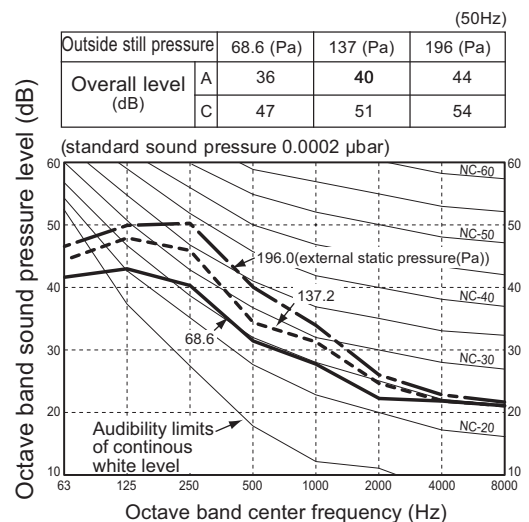
MMD-AP0244H-E, AP0274H-E



MMD-AP0364H-E



MMD-AP0484H-E

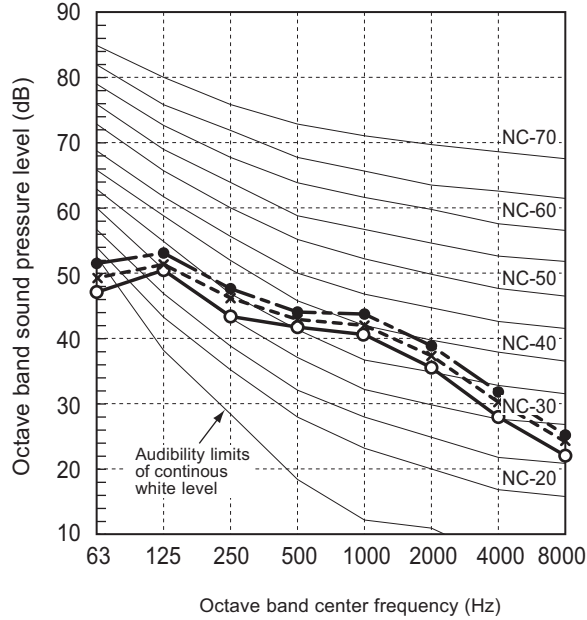




MMD-AP0724H-E

(50Hz)

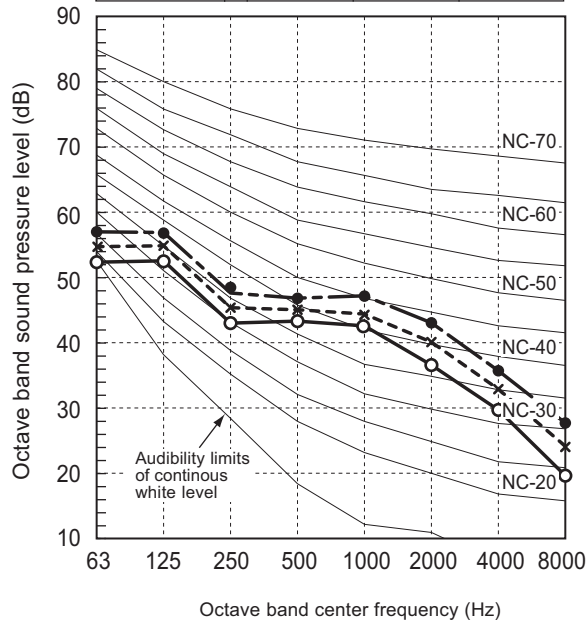
Outside still pressure		68.6 (Pa)	137 (Pa)	196 (Pa)
Overall level (dB)	A	48	49	50.5
	C	54	55	57



MMD-AP0964H-E

(50Hz)

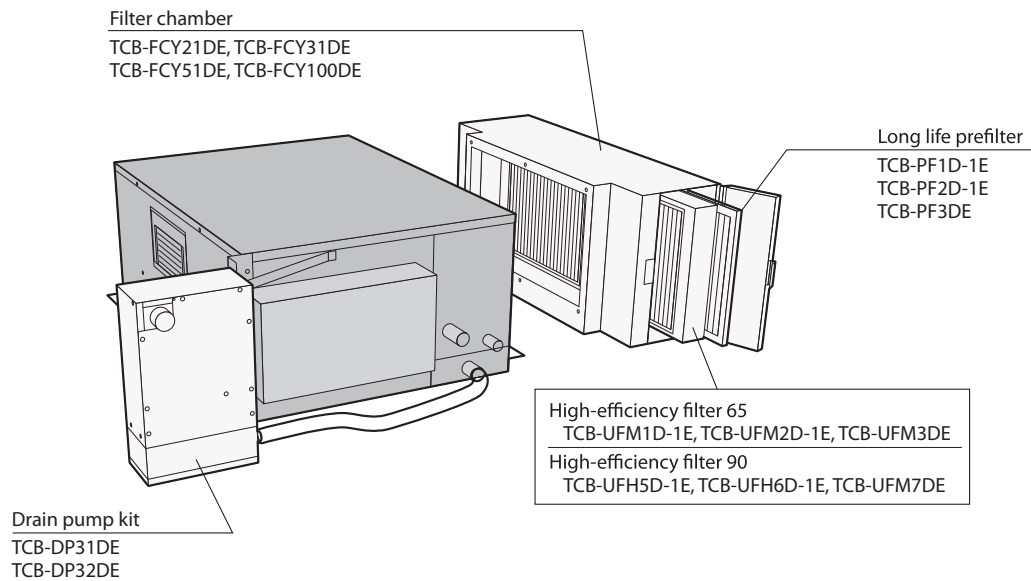
Outside still pressure		68.6 (Pa)	137 (Pa)	196 (Pa)
Overall level (dB)	A	49	50	51.5
	C	56	59	61





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





11-2-7. Slim Duct Type

Slim Duct Type

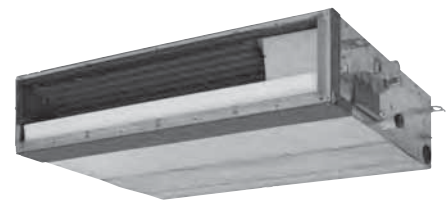
Indoor Unit

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



Contents

1. Specifications
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. Fresh air intake (Design guide)
10. Accessories



50Hz

1. Specification

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 (m ³ /h)		540		600	690	780	
	(Mid./Low) (m ³ /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.

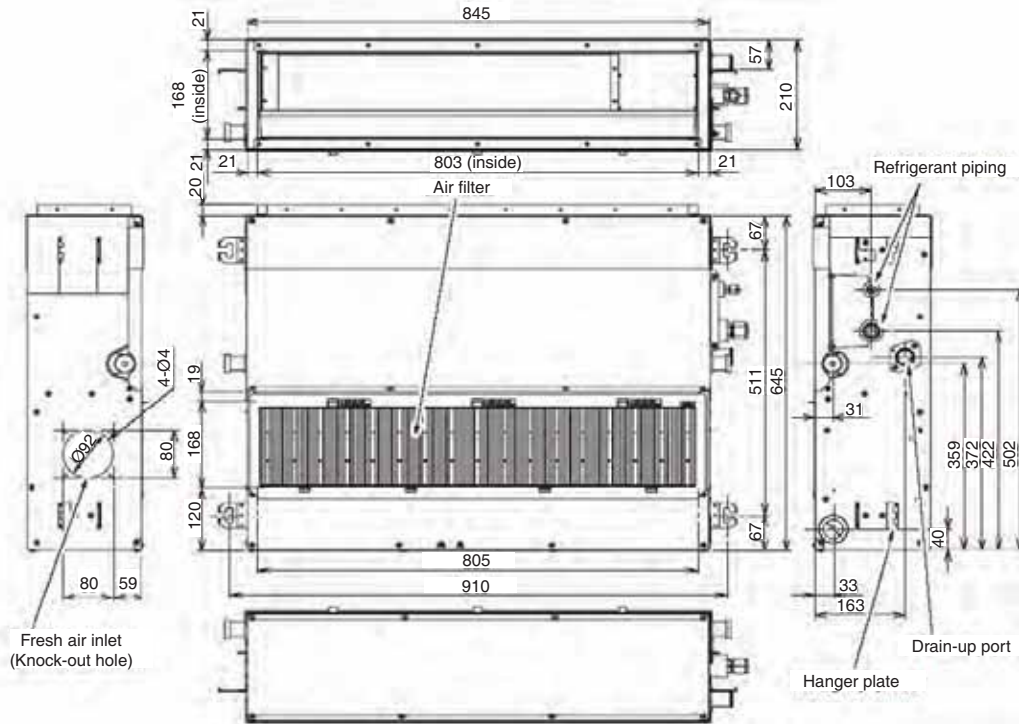
Note : Reted conditions Cooling: Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

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



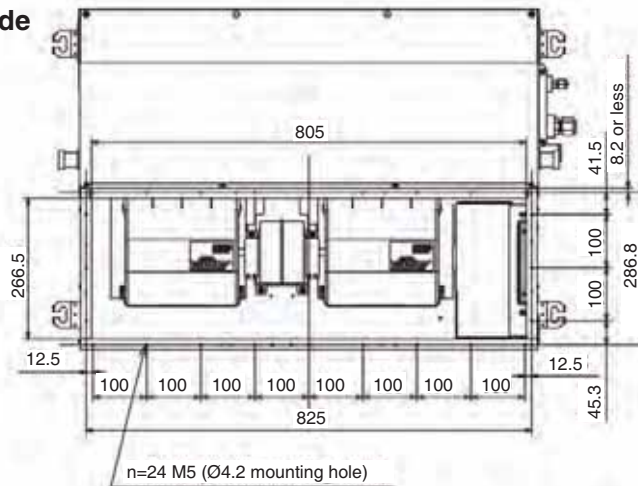
2. Dimensions

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

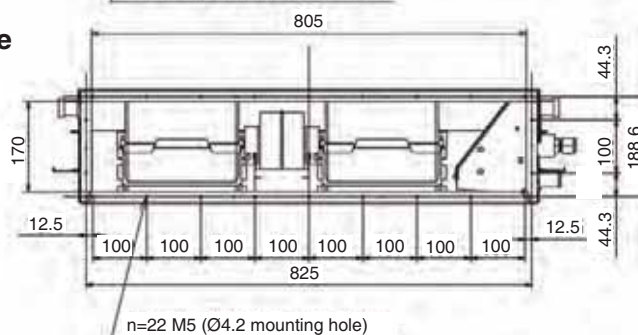


Air inlet connecting flange (Field supply)

Underside



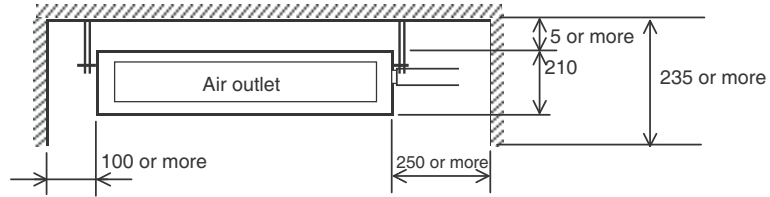
Rearside



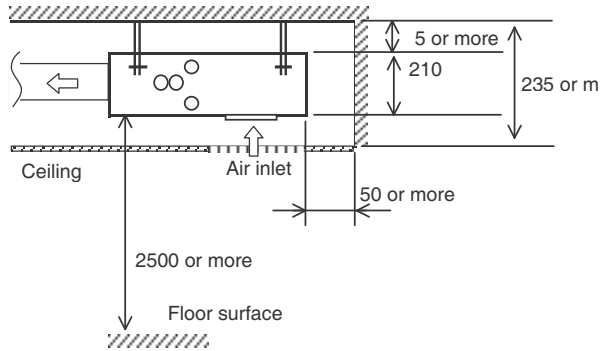


Installation space

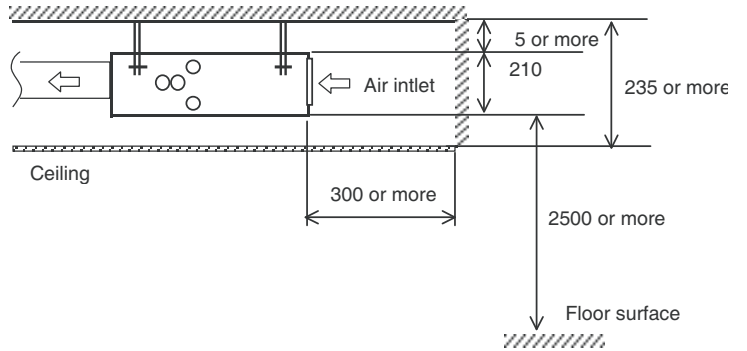
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Under air inlet

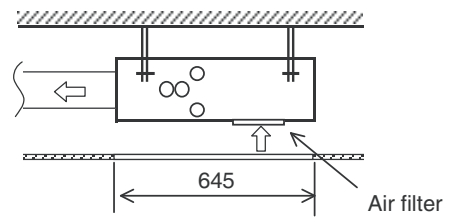
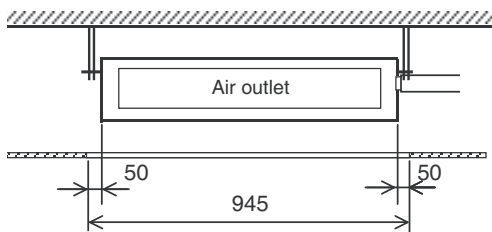


Rear air inlet

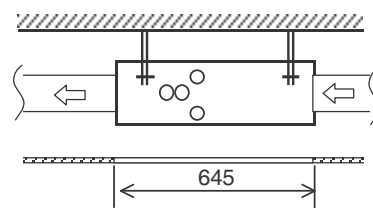
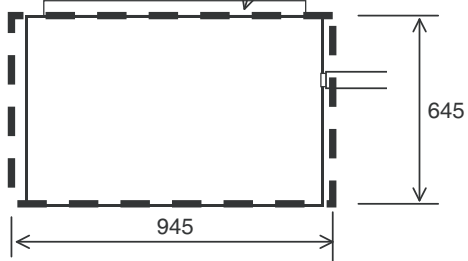


Service space

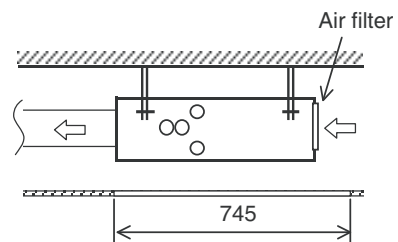
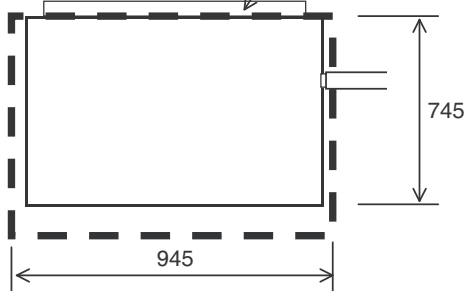
(length:mm)



Service door (Ceiling opening)



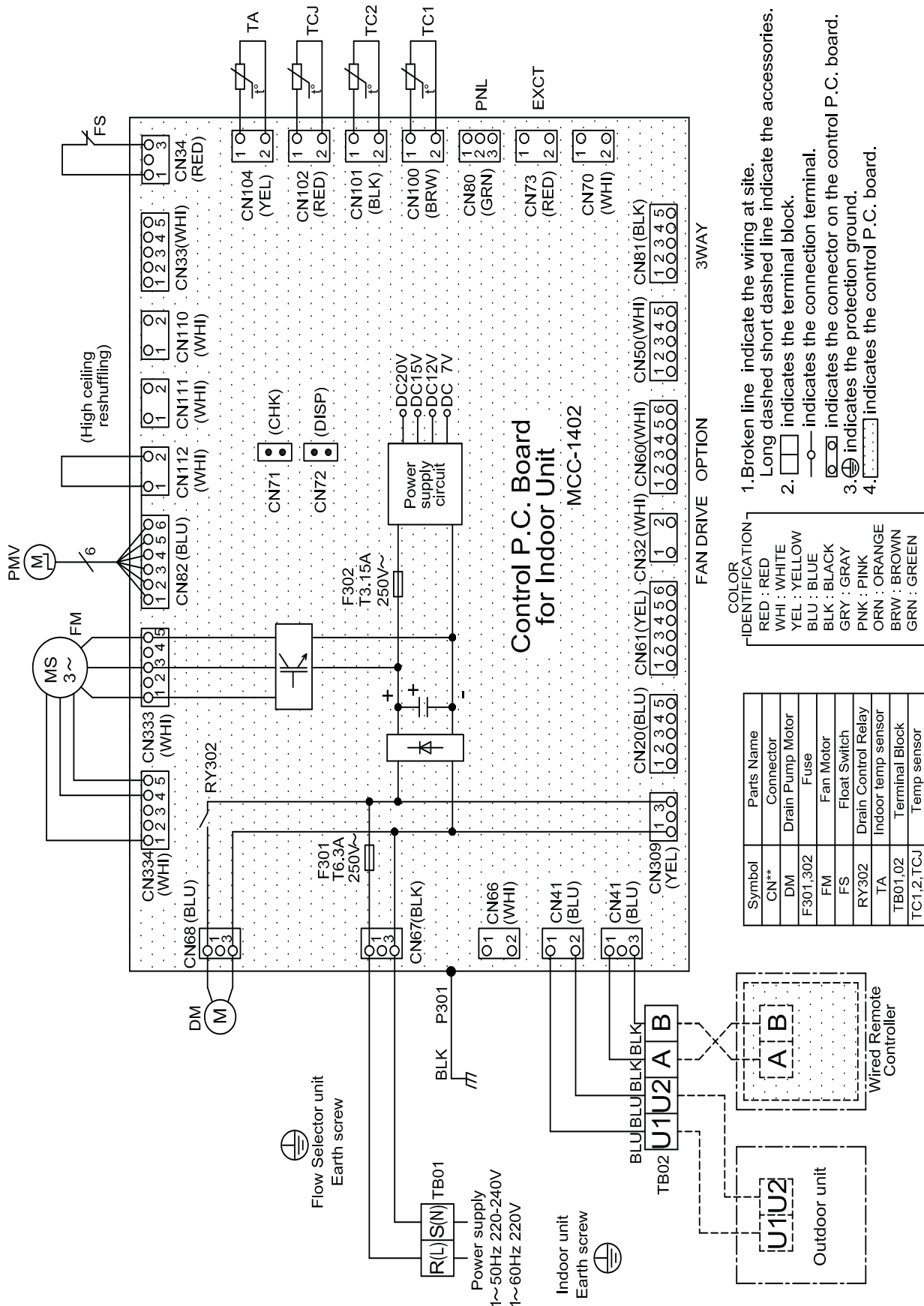
Service door (Ceiling opening)





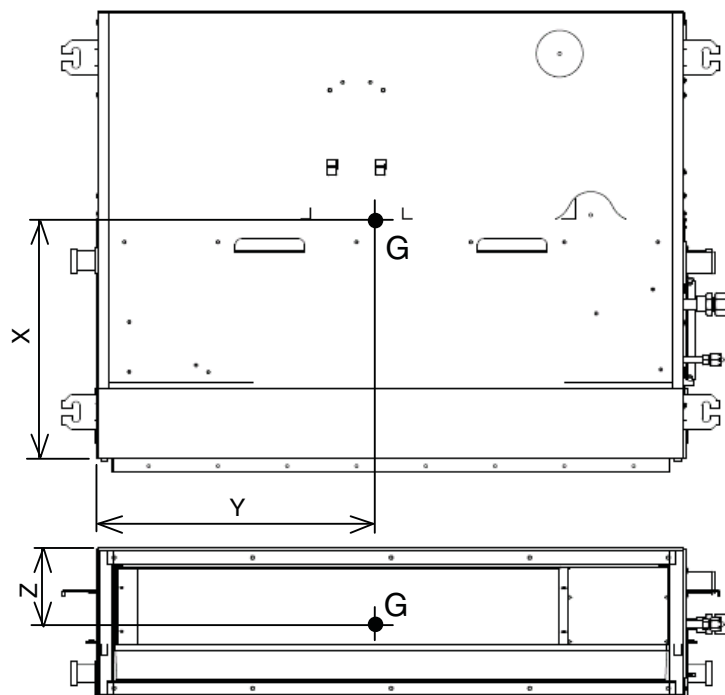
3. Wiring diagram

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

MCA : Minimum Circuit Amps FLA : Full Load Amps
 MOCP : Maximum Overcurrent Protection (Amps)



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)

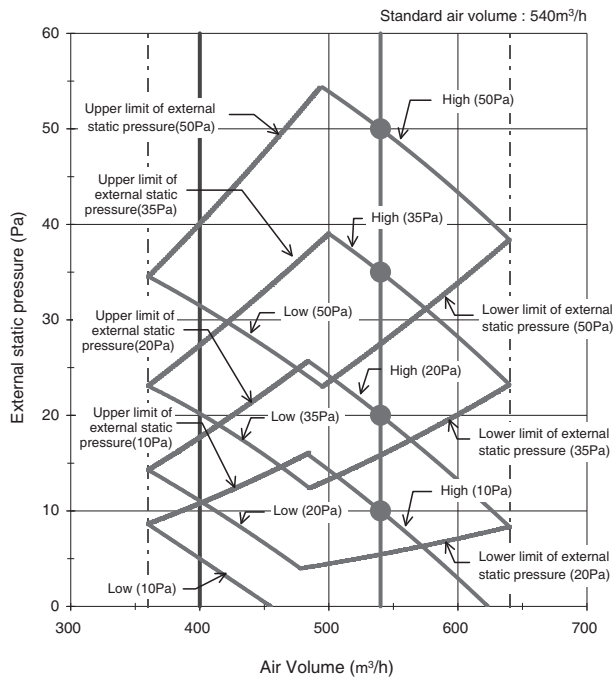
TC : Total capacity [kW] SHC : Sensible capacity [kW]

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	

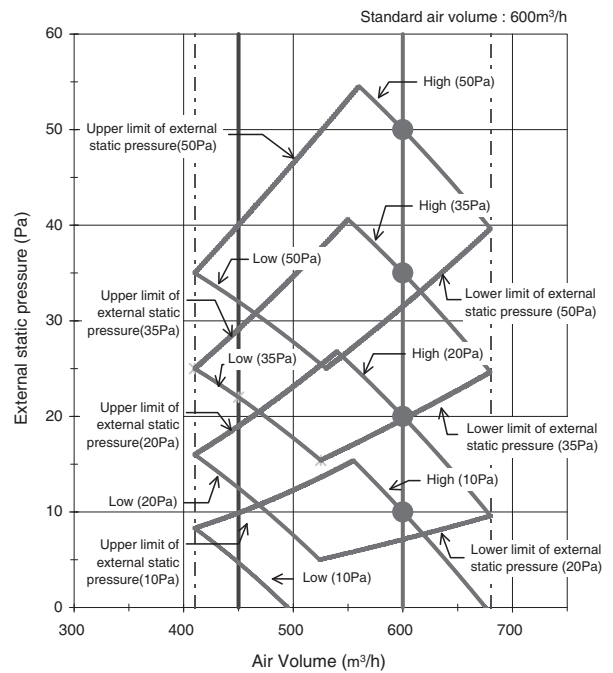


7. Fan characteristics

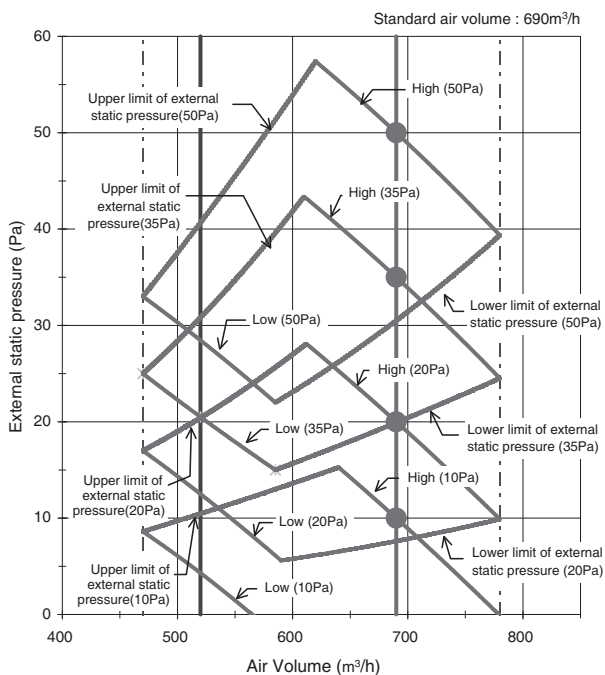
MMD-AP0074SPH-E
MMD-AP0094SPH-E



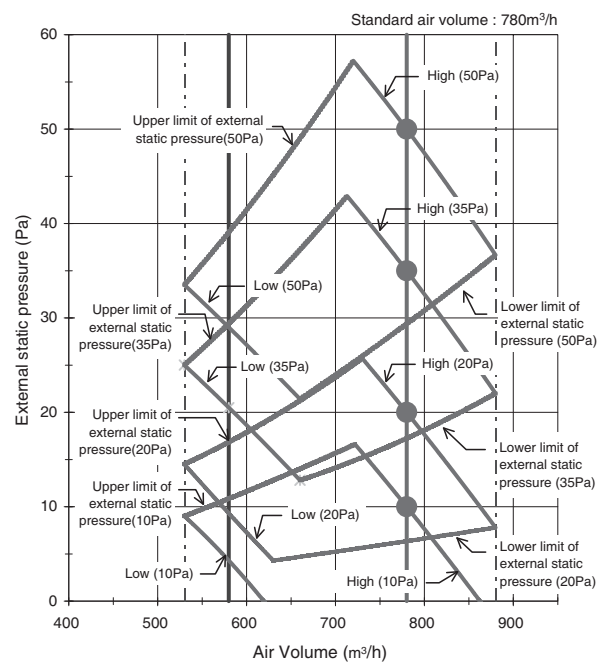
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MMD-AP0154SPH-E



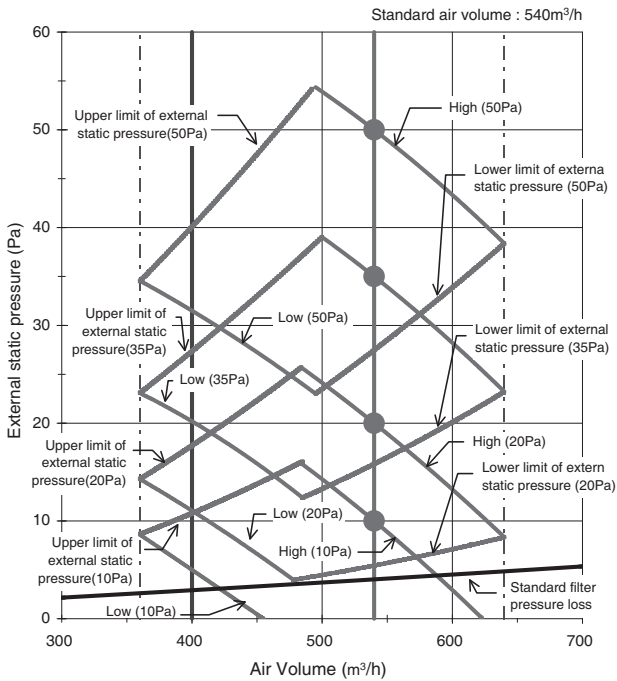
MMD-AP0184SPH-E



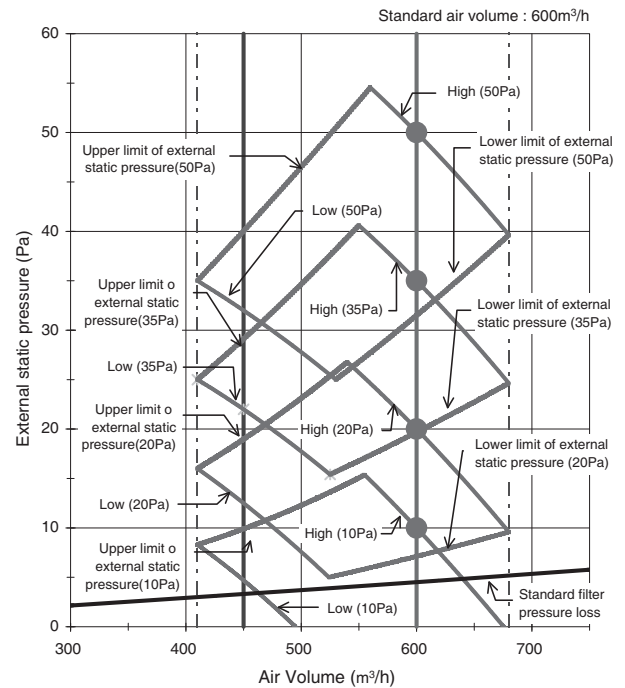


(Filter attached)

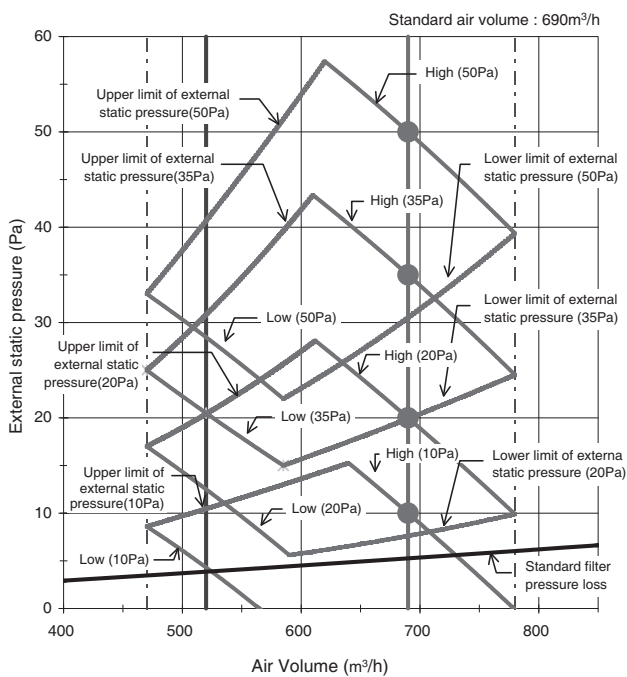
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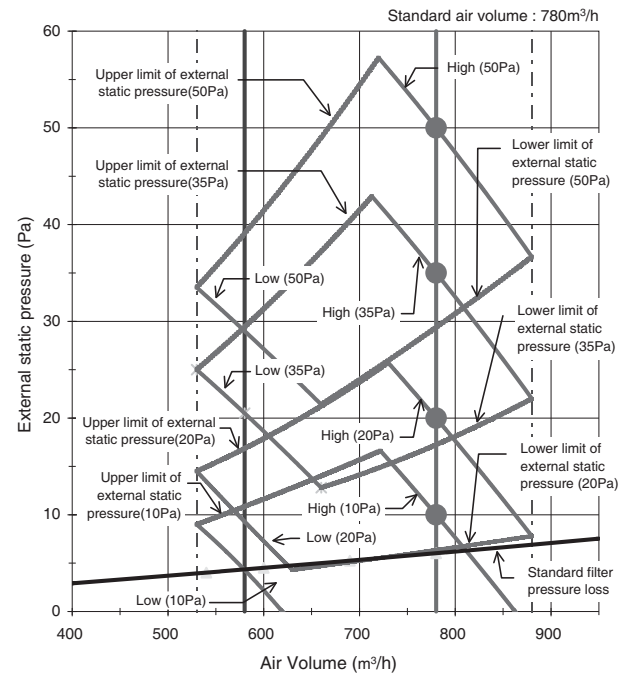
MMD-AP0124SPH-E



MMD-AP0154SPH-E



MMD-AP0184SPH-E



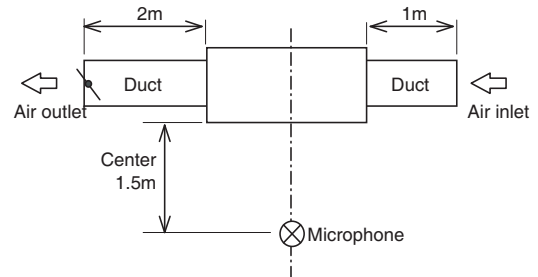


8. Sound Characteristics (NC Curve)

MMD-AP0074SPH-E
MMD-AP0094SPH-E

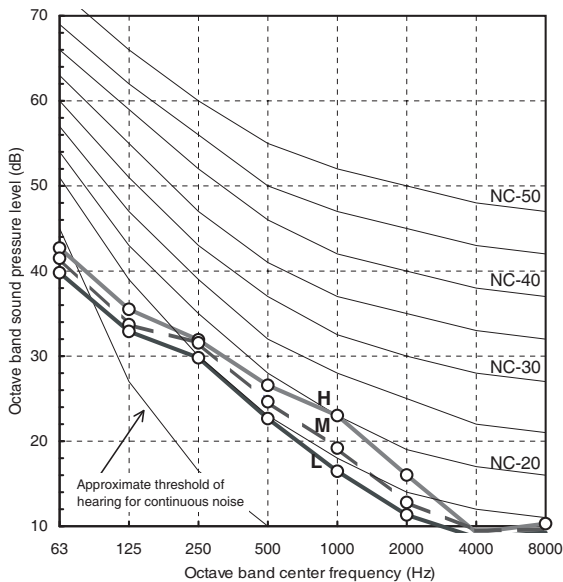
Measuring location

Rear air intake



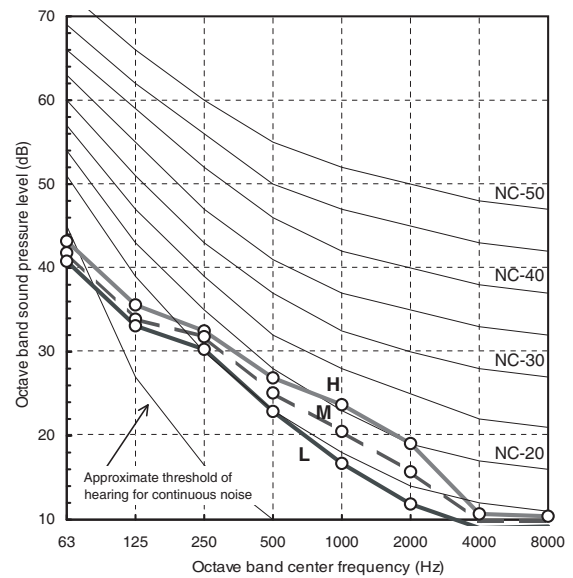
External static pressure 10Pa

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



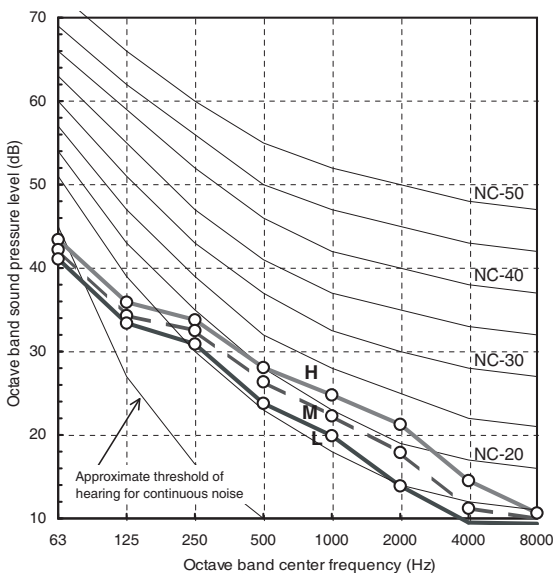
External static pressure 20Pa

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



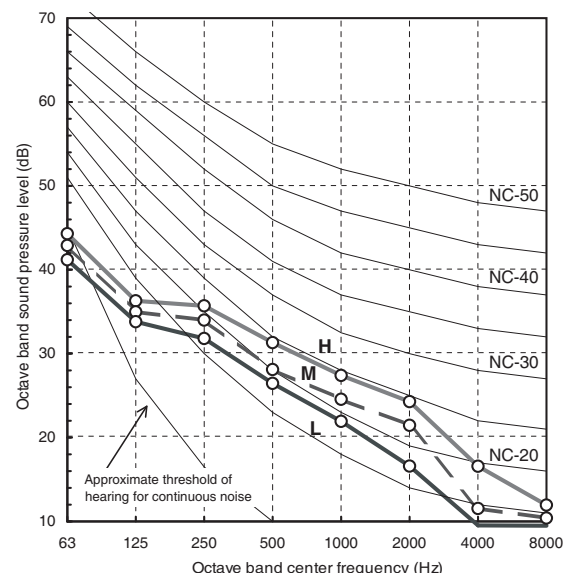
External static pressure 35Pa

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

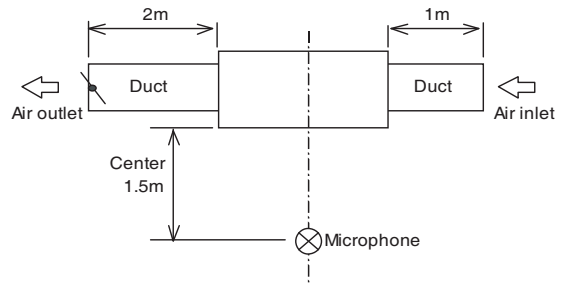




MMD-AP0124SPH-E

Measuring location

Rear air intake

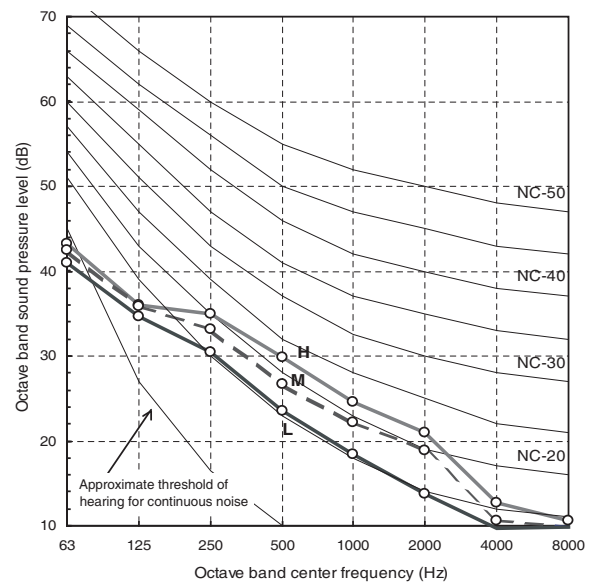
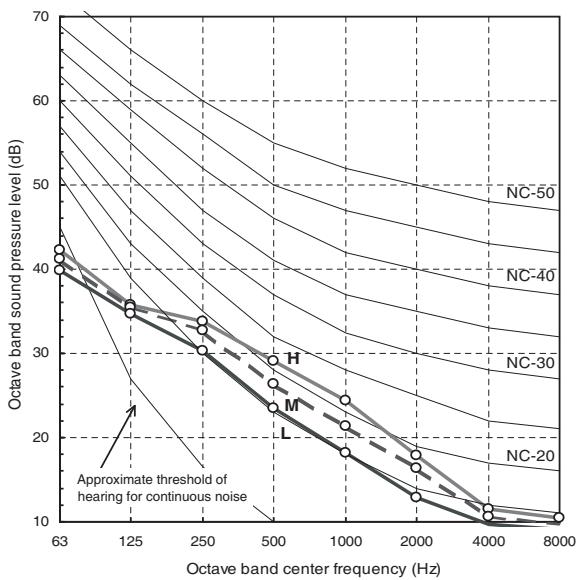


External static pressure 10Pa

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

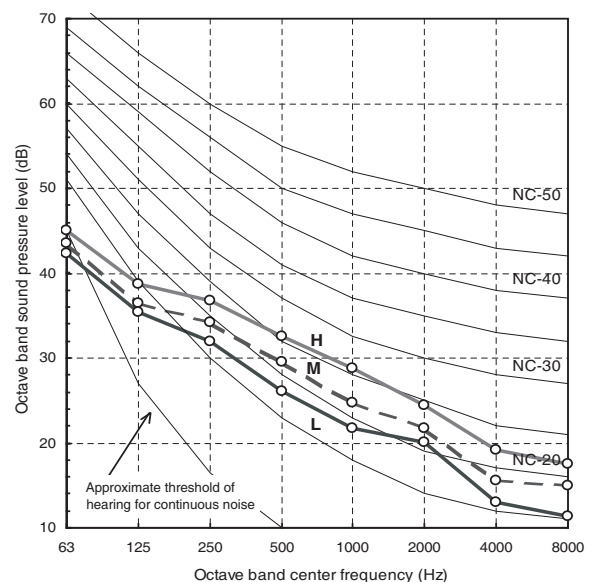
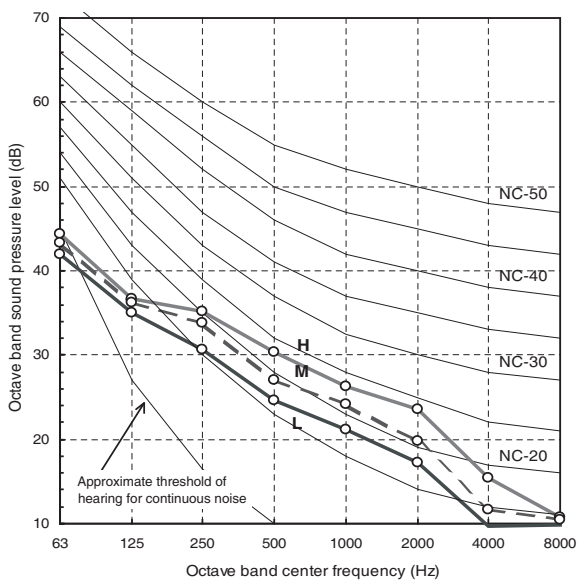


External static pressure 35Pa

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

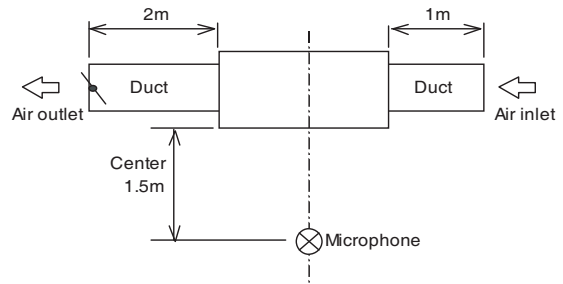




MMD-AP0154SPH-E

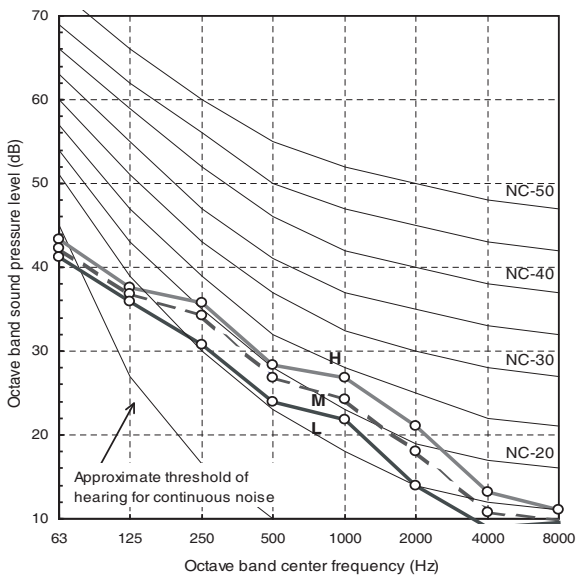
Measuring location

Rear air intake



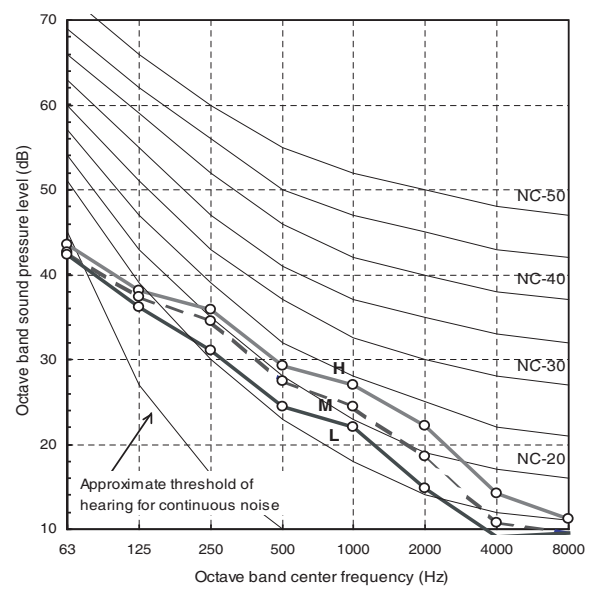
External static pressure 10Pa

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



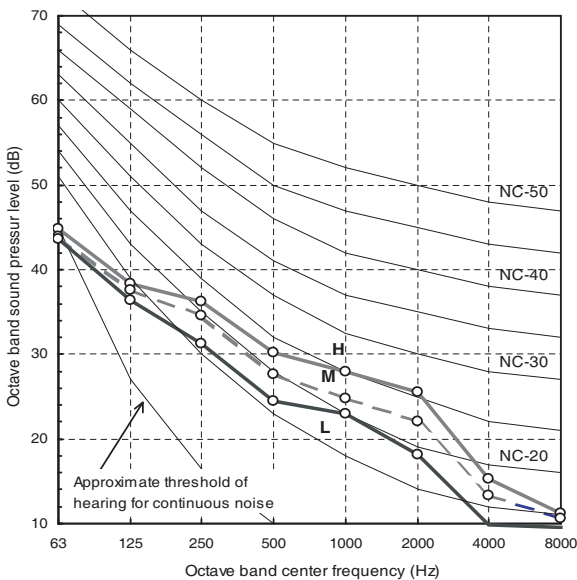
External static pressure 20Pa

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



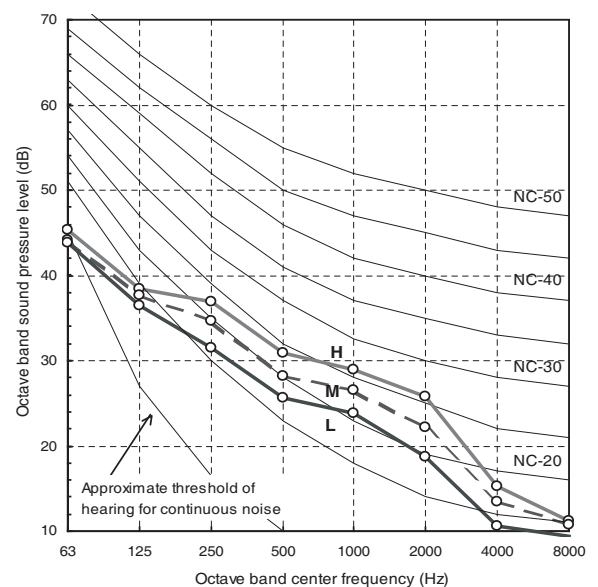
External static pressure 35Pa

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

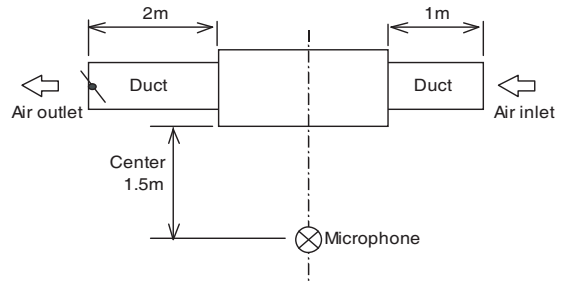




MMD-AP0184SPH-E

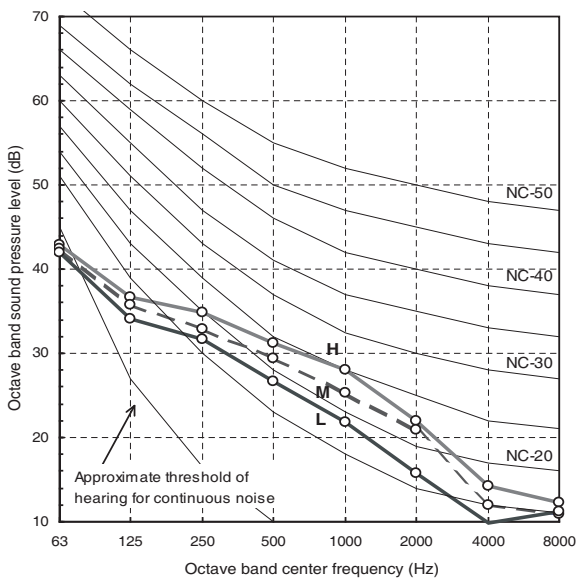
Measuring location

Rear air intake



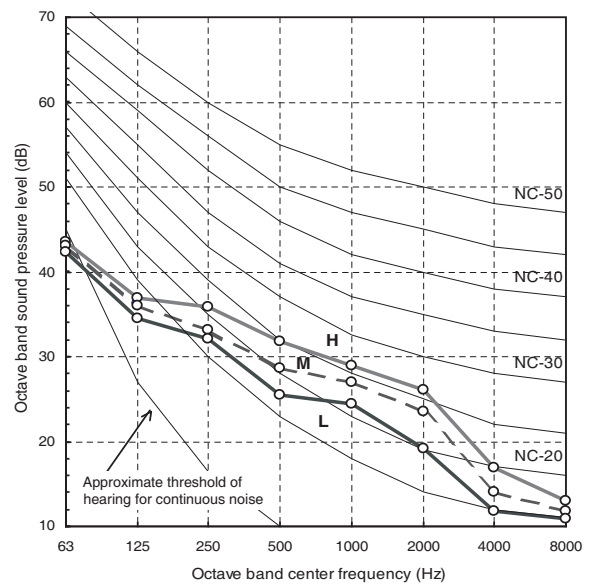
External static pressure 10Pa

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



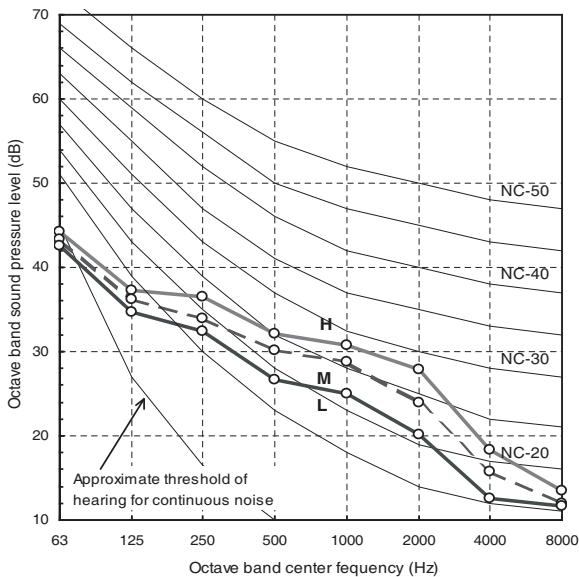
External static pressure 20Pa

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



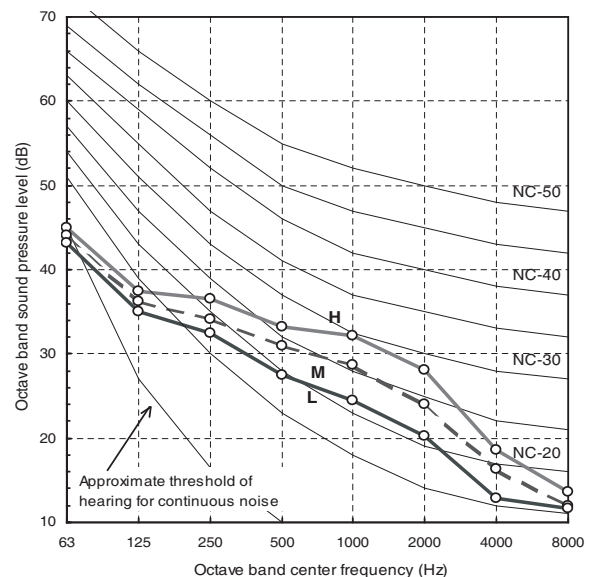
External static pressure 35Pa

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

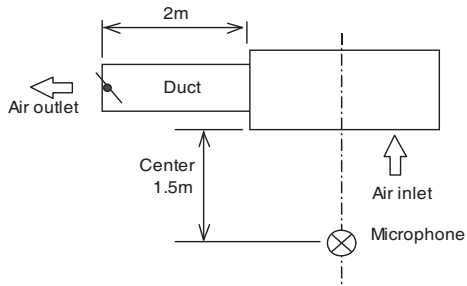




MMD-AP0074SPH-E
MMD-AP0094SPH-E

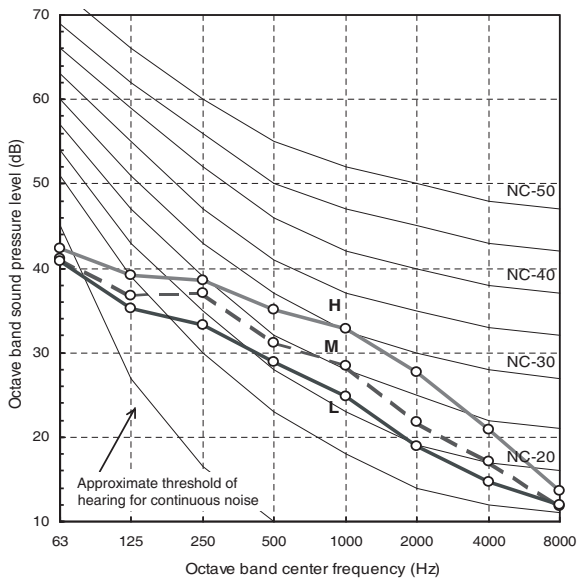
Measuring location

Under air intake



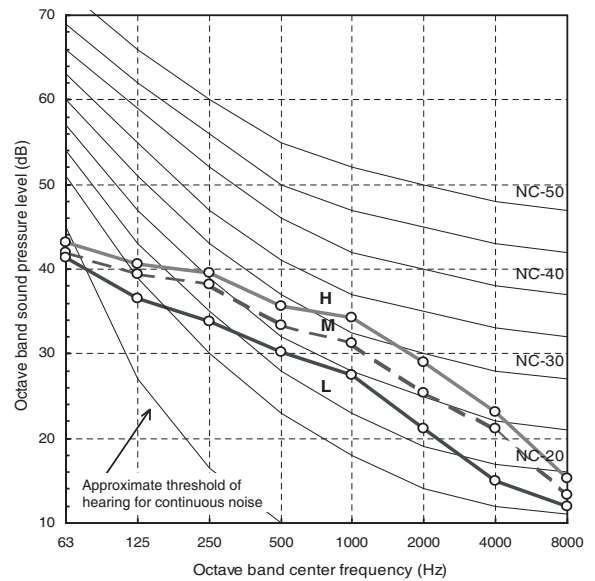
External static pressure 10Pa

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



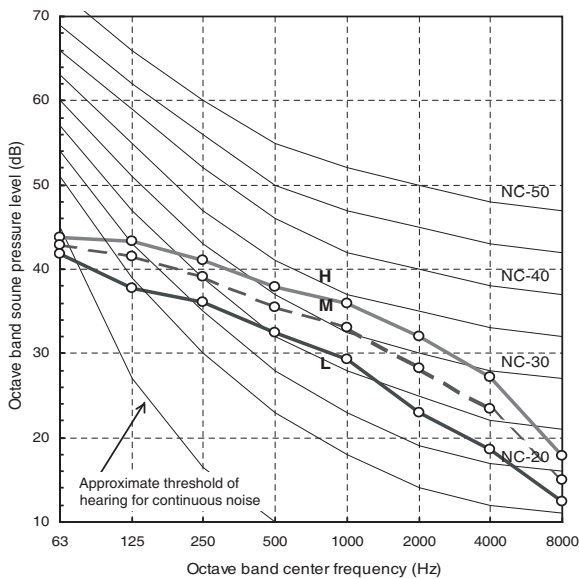
External static pressure 20Pa

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



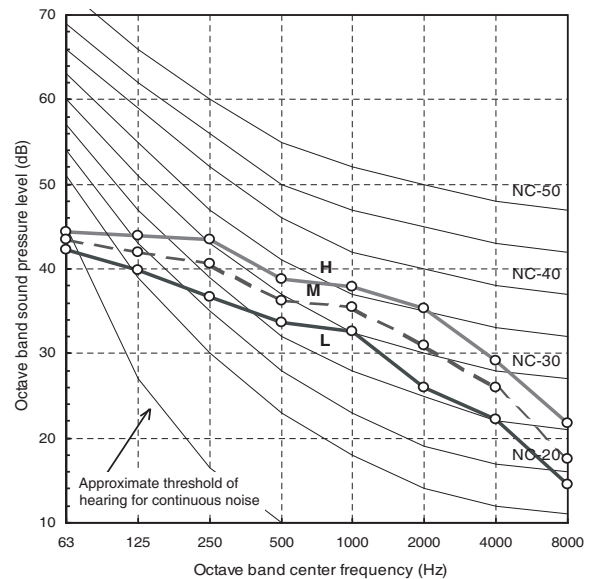
External static pressure 35Pa

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

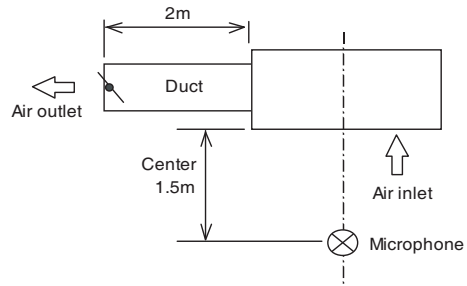




MMD-AP0124SPH-E

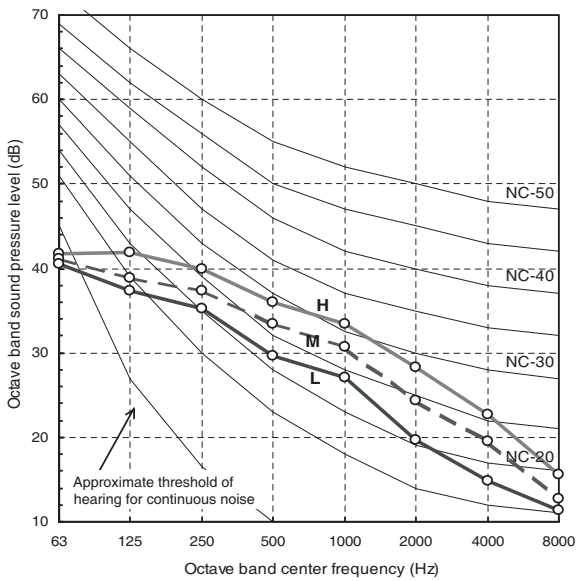
Measuring location

Under air intake



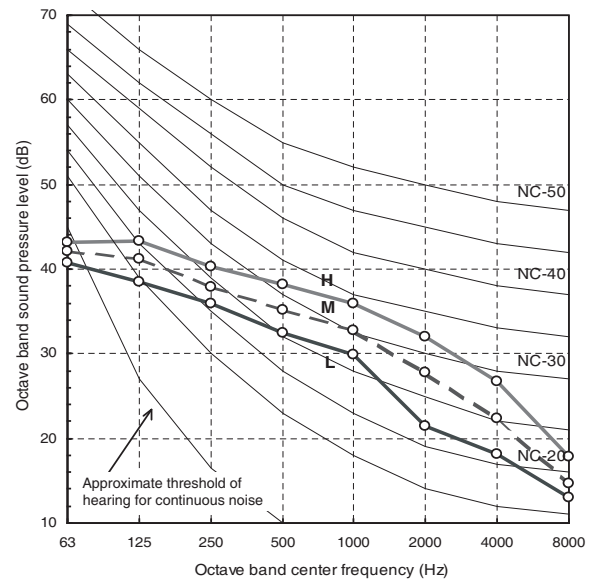
External static pressure 10Pa

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



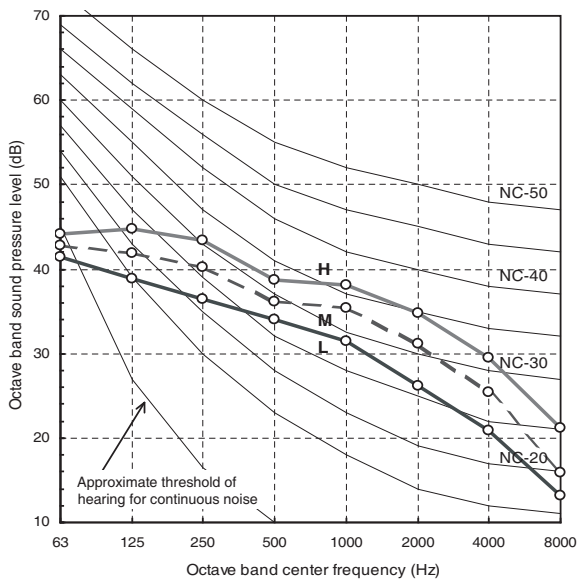
External static pressure 20Pa

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



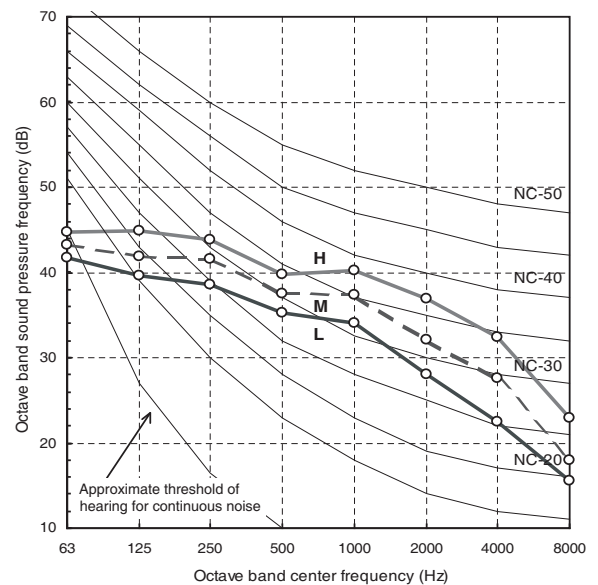
External static pressure 35Pa

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

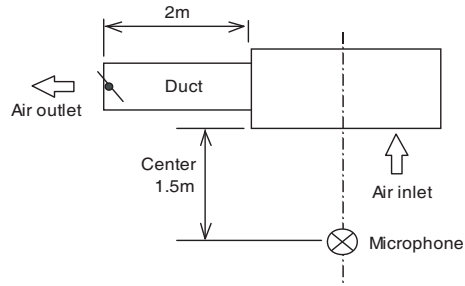




MMD-AP0154SPH-E

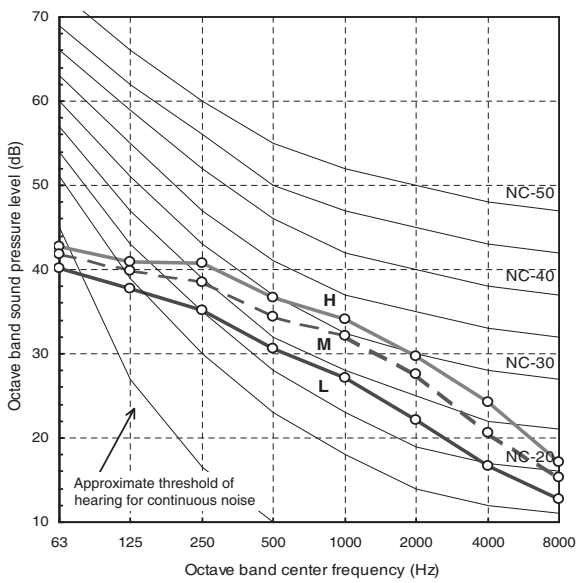
Measuring location

Under air intake



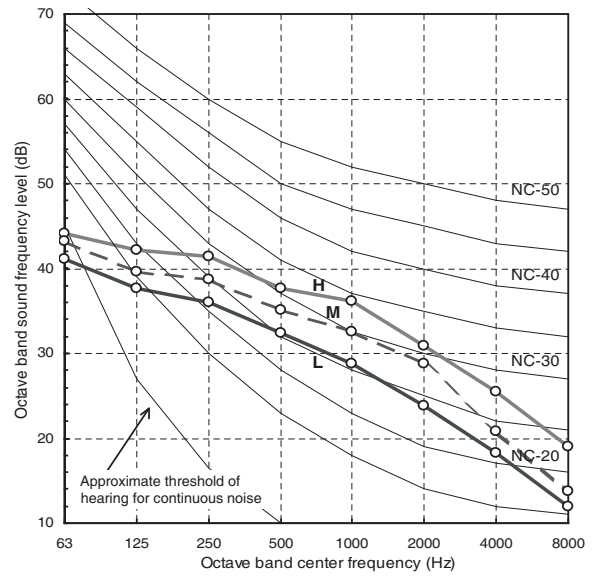
External static pressure 10Pa

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



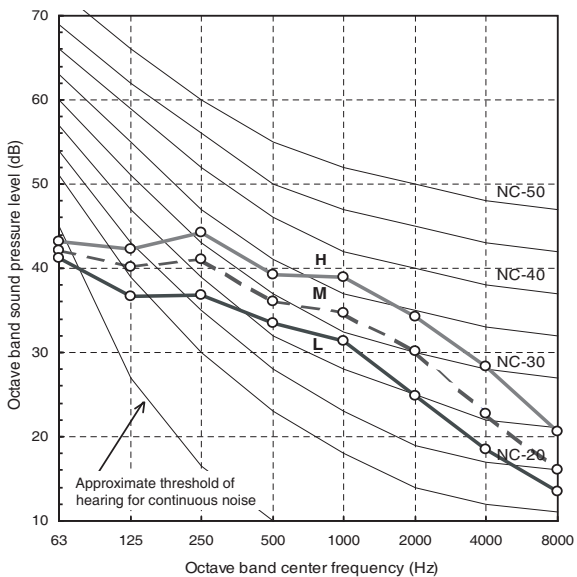
External static pressure 20Pa

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



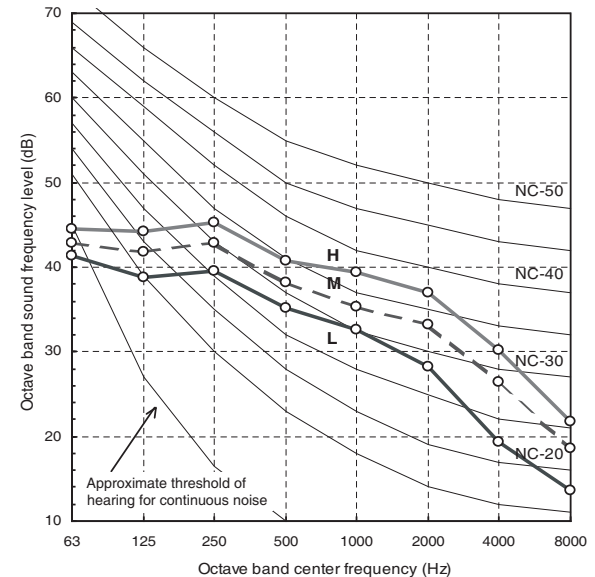
External static pressure 35Pa

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

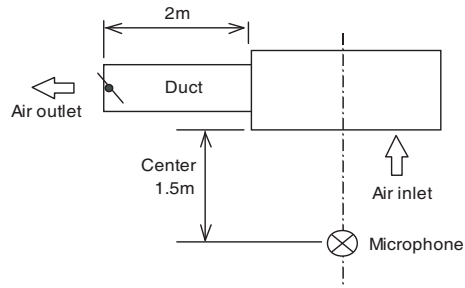




MMD-AP0184SPH-E

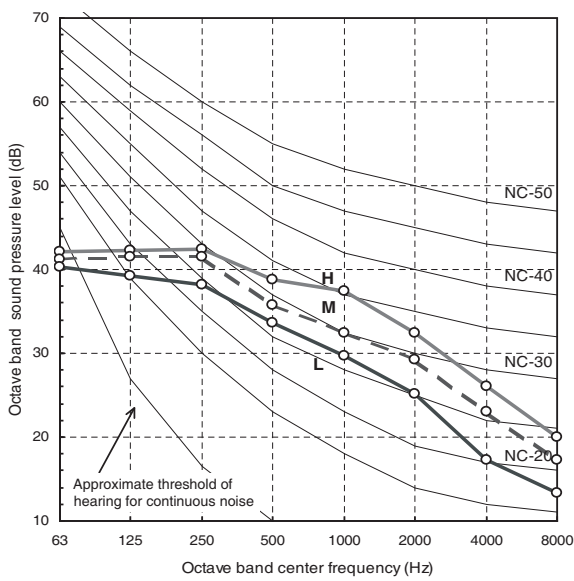
Measuring location

Under air intake



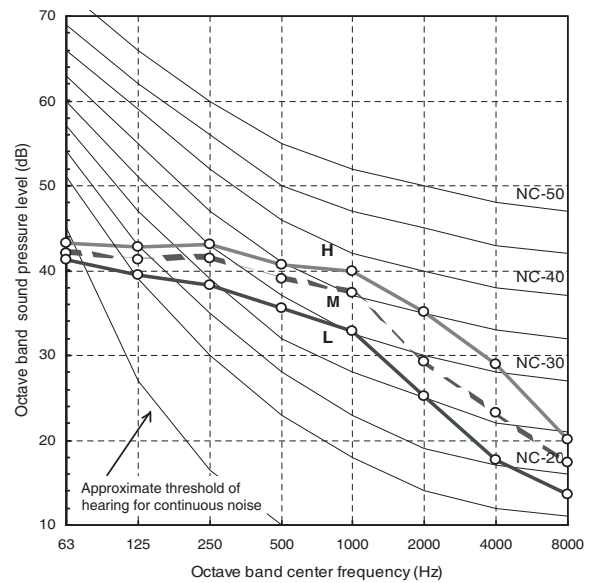
External static pressure 10Pa

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



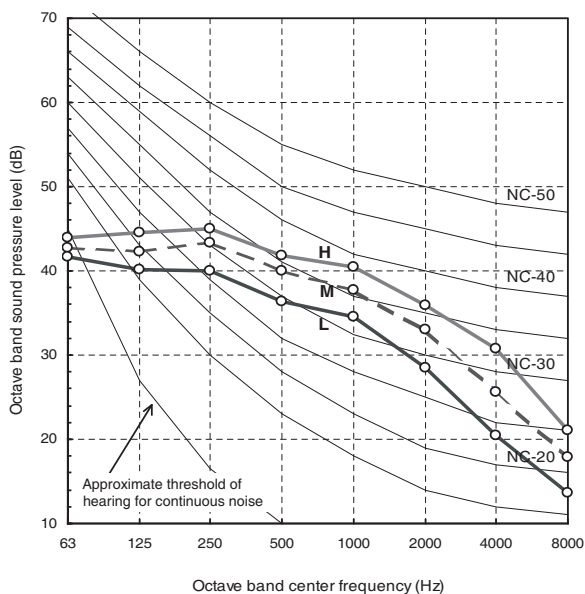
External static pressure 20Pa

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



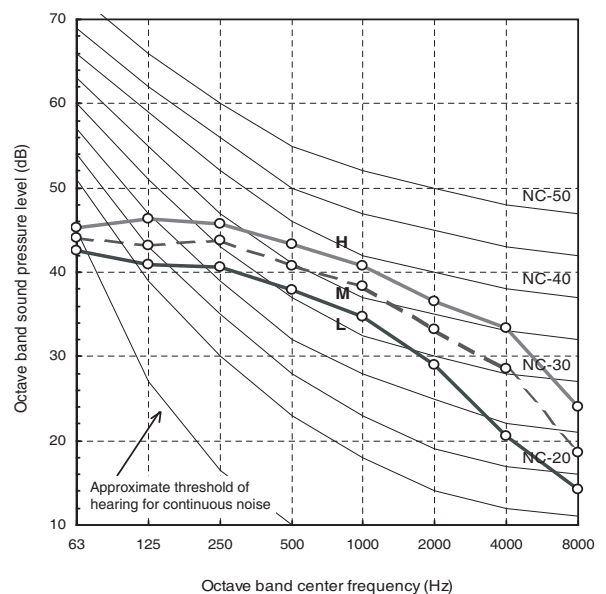
External static pressure 35Pa

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.

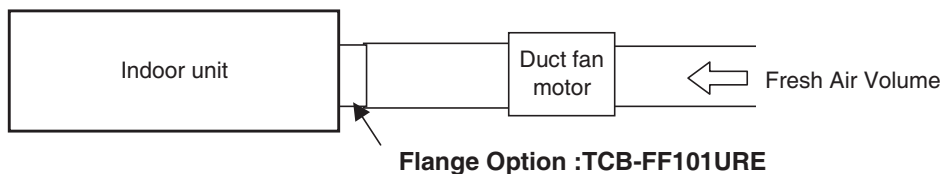
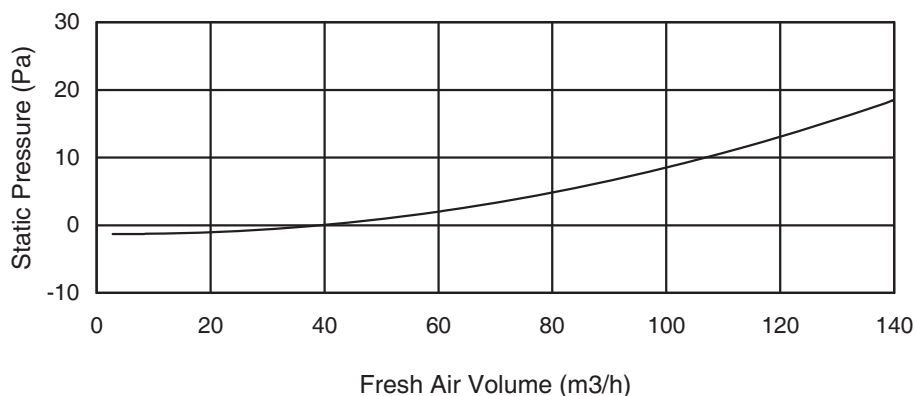
Model name	MMD-	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E
Standard air flow	(m ³ /h)	540	540	600

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.

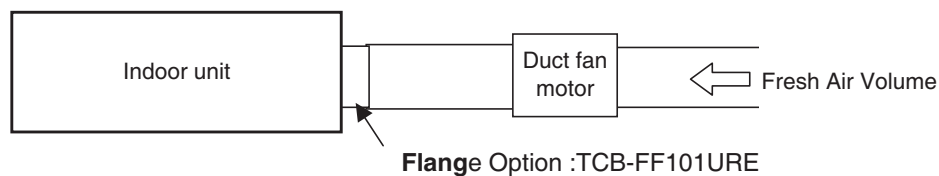
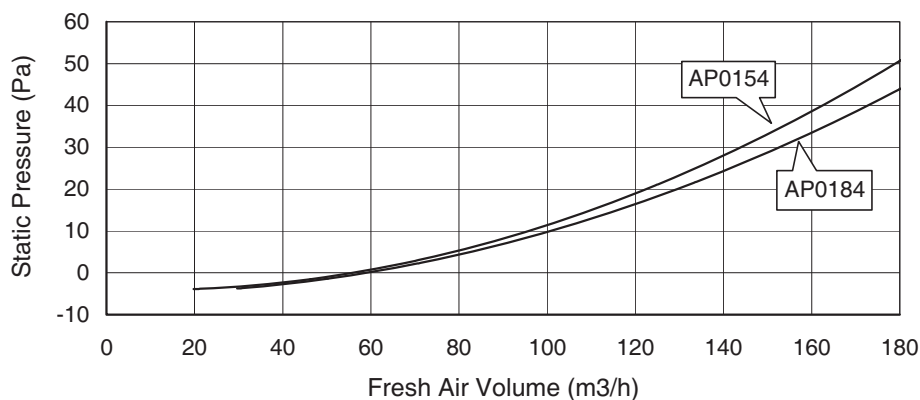
Model name	MMD-	AP0154SPH-E	AP0184SPH-E
Standard air flow	(m ³ /h)	690	780

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.)

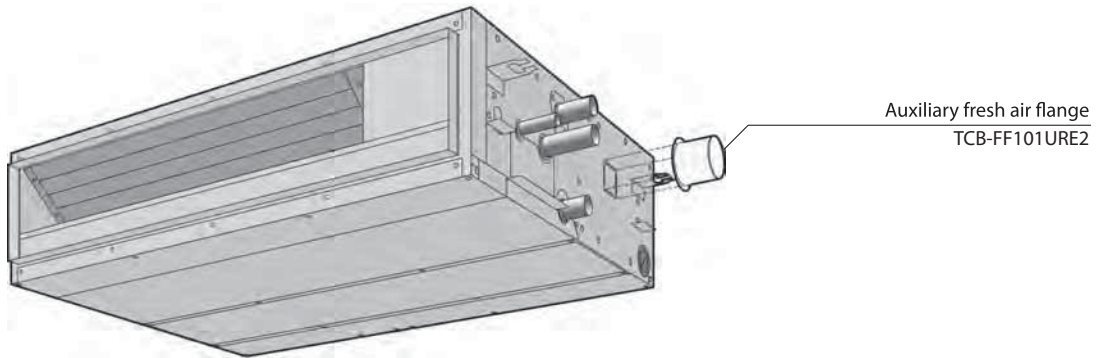
After installation, carry out a trial operation to check that the duct fan of the indoor unit start/stop simultaneously.

(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***4SPHE	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)	(m ³ /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.

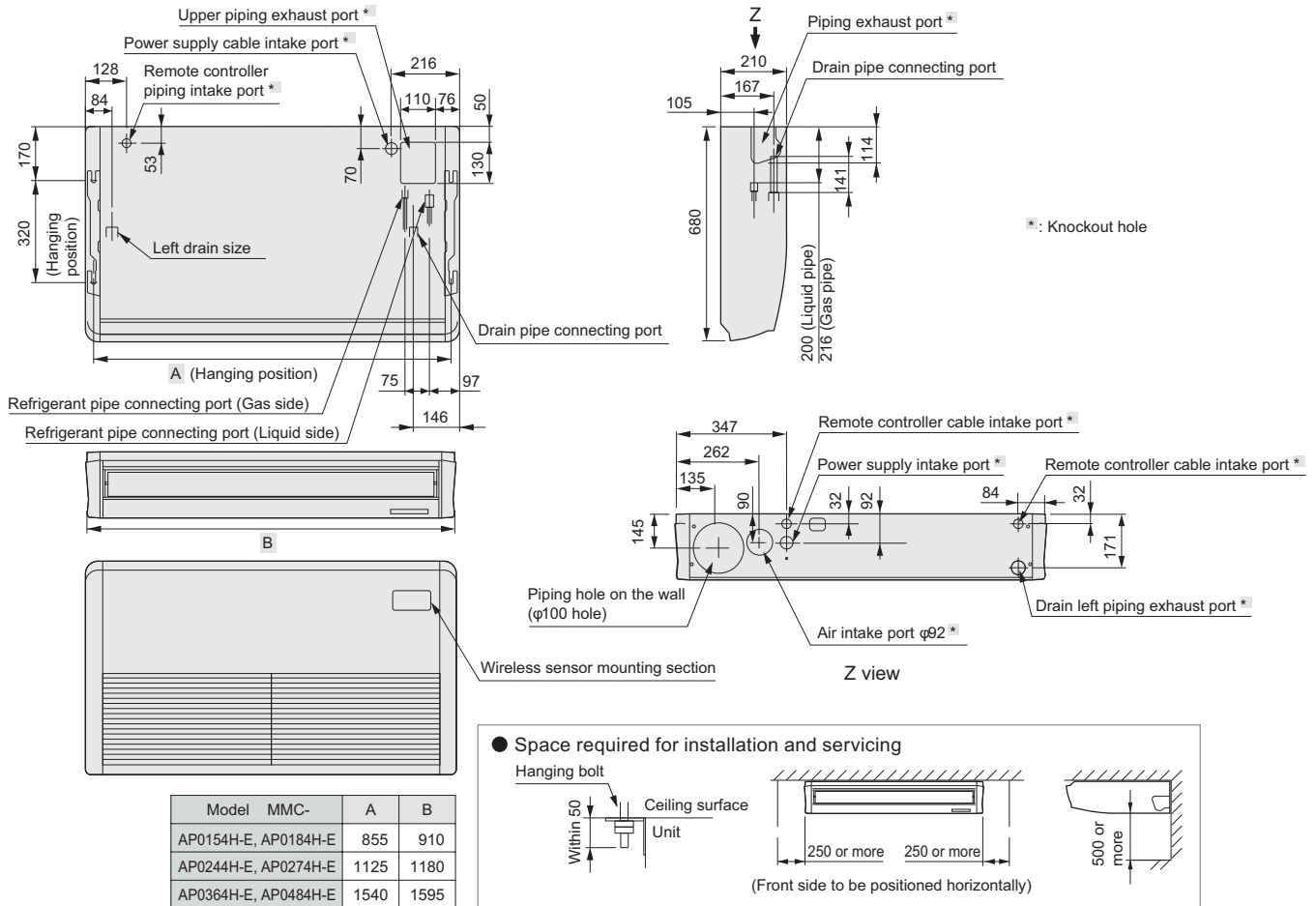
Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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



2. Dimension

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

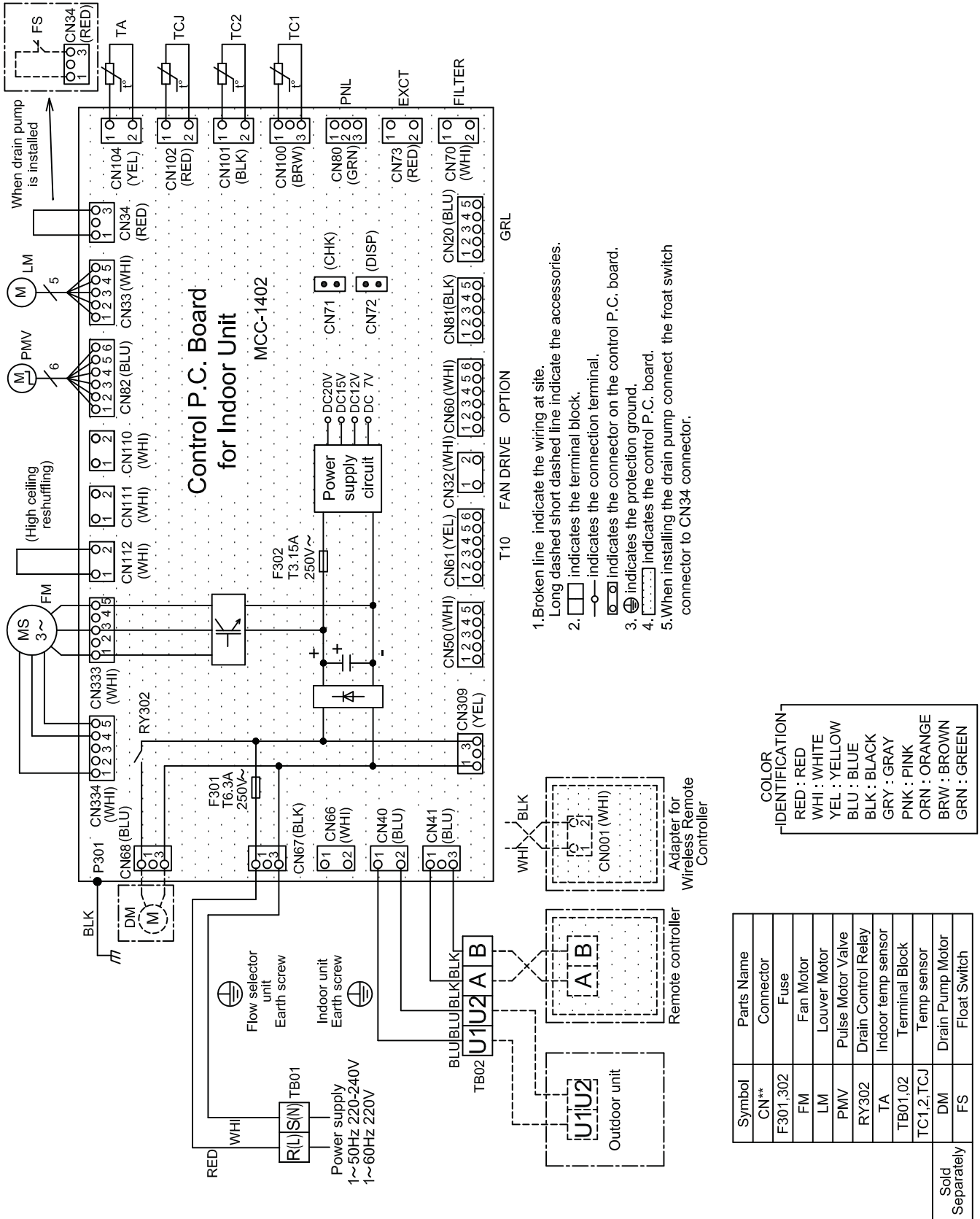


(Unit: mm)



3. Wiring diagram

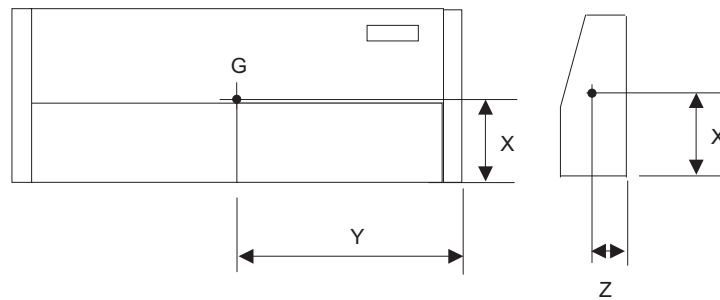
MMC-AP0154H-E, AP0184H-E, AP0244H-E, AP0274H-E, AP0364H-E, AP0484H-E





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)



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	20°CDB	23°CDB	23°CDB	26°CDB	26°CDB	27°CDB	27°CDB	28°CDB	28°CDB	30°CDB	30°CDB	32°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	
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	
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	
37.0	5.6	4.4	6.2	4.7	6.7	5.0	6.9	4.9	7.1	4.9	7.5	4.9	7.8	4.8	
39.0	5.5	4.3	6.1	4.5	6.5	4.8	6.7	4.8	6.9	4.8	7.3	4.8	7.6	4.6	
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)**

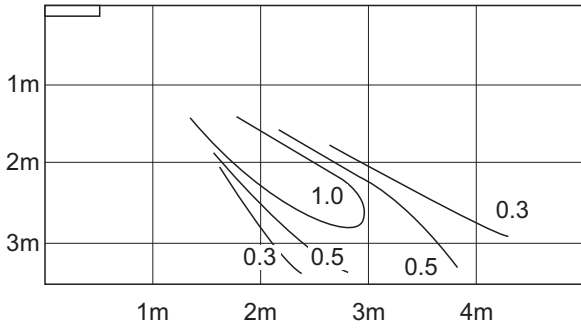
TC : Total capacity [kW] SHC : Sensible capacity [kW]

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	
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	
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	
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	

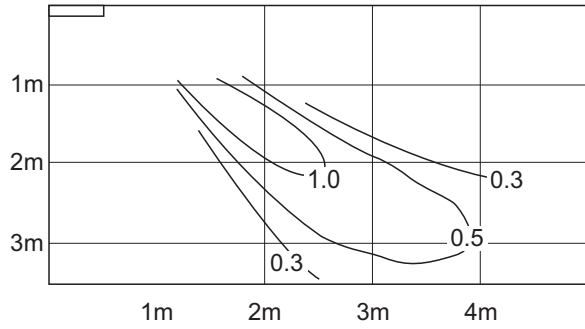


7. Air throw distance chart

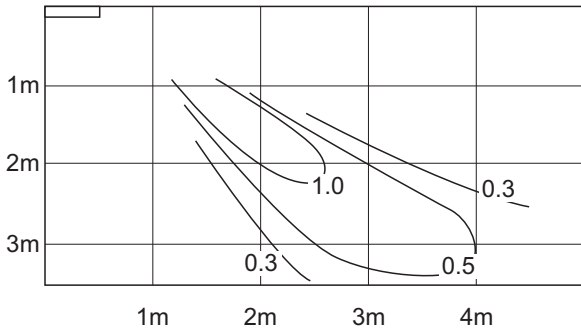
MMC-AP0184H-E, AP0484H-E



MMC-AP0364H-E



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

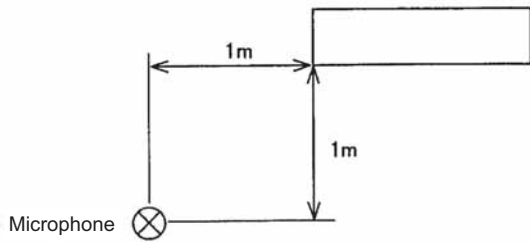


unit : [m/s]



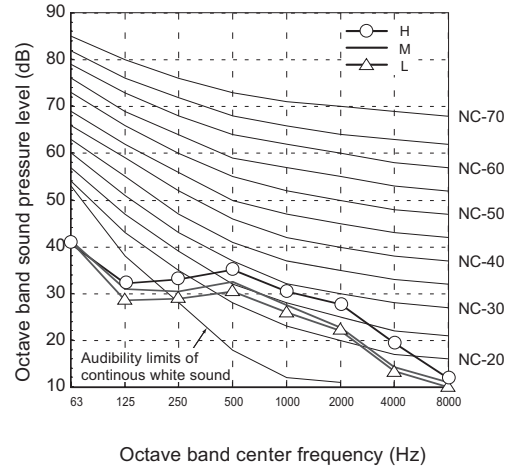
8. Sound level data (NC CURVE)

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



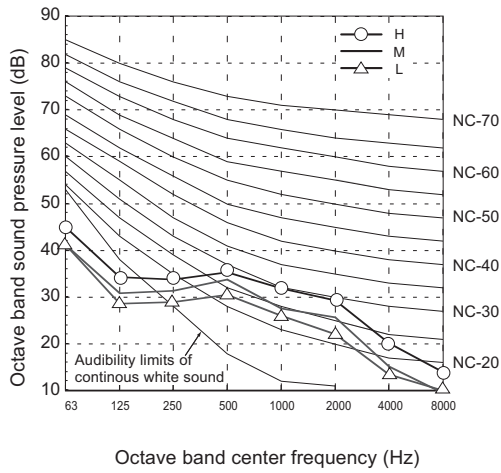
MMC-AP0154H-E

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



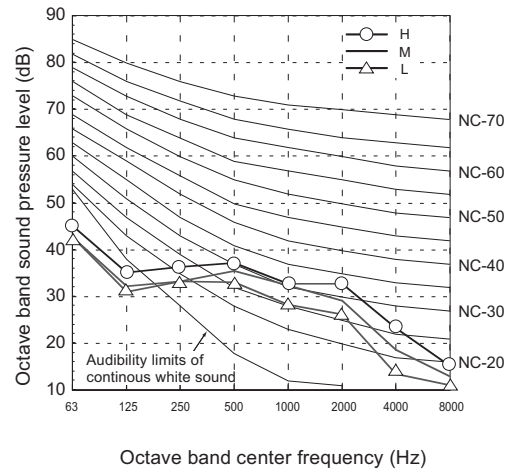
MMC-AP0184H-E

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



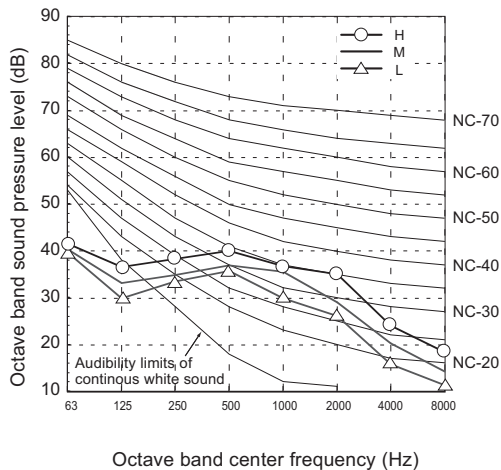
MMC-AP0244H-E, AP0274H-E

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



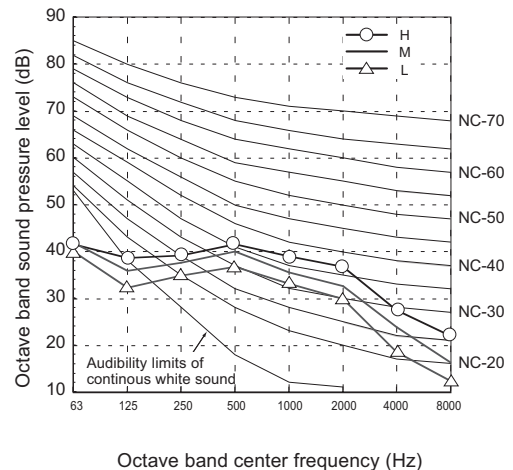
MMC-AP0364H-E

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



MMC-AP0484H-E

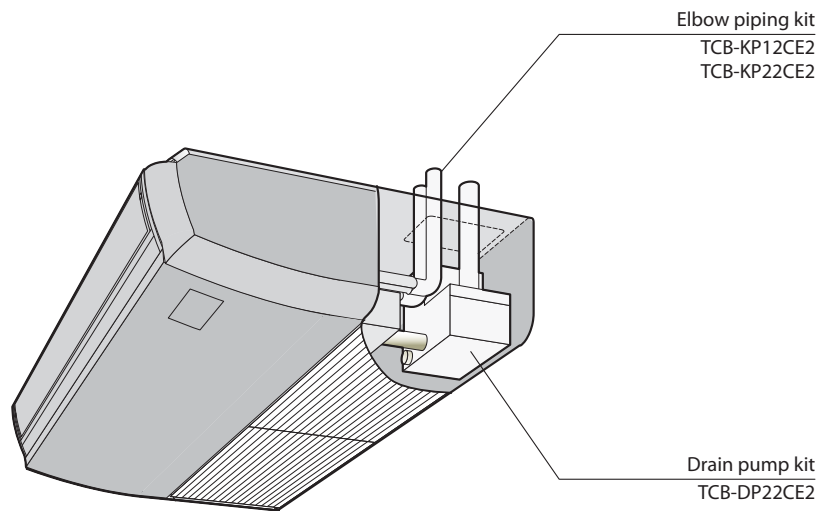
Fan Tap	H	M	L
Sound pressure level(dB(A))	43	40	37





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.

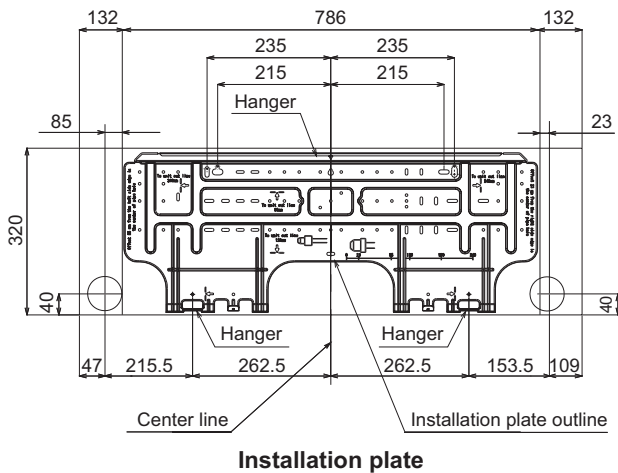
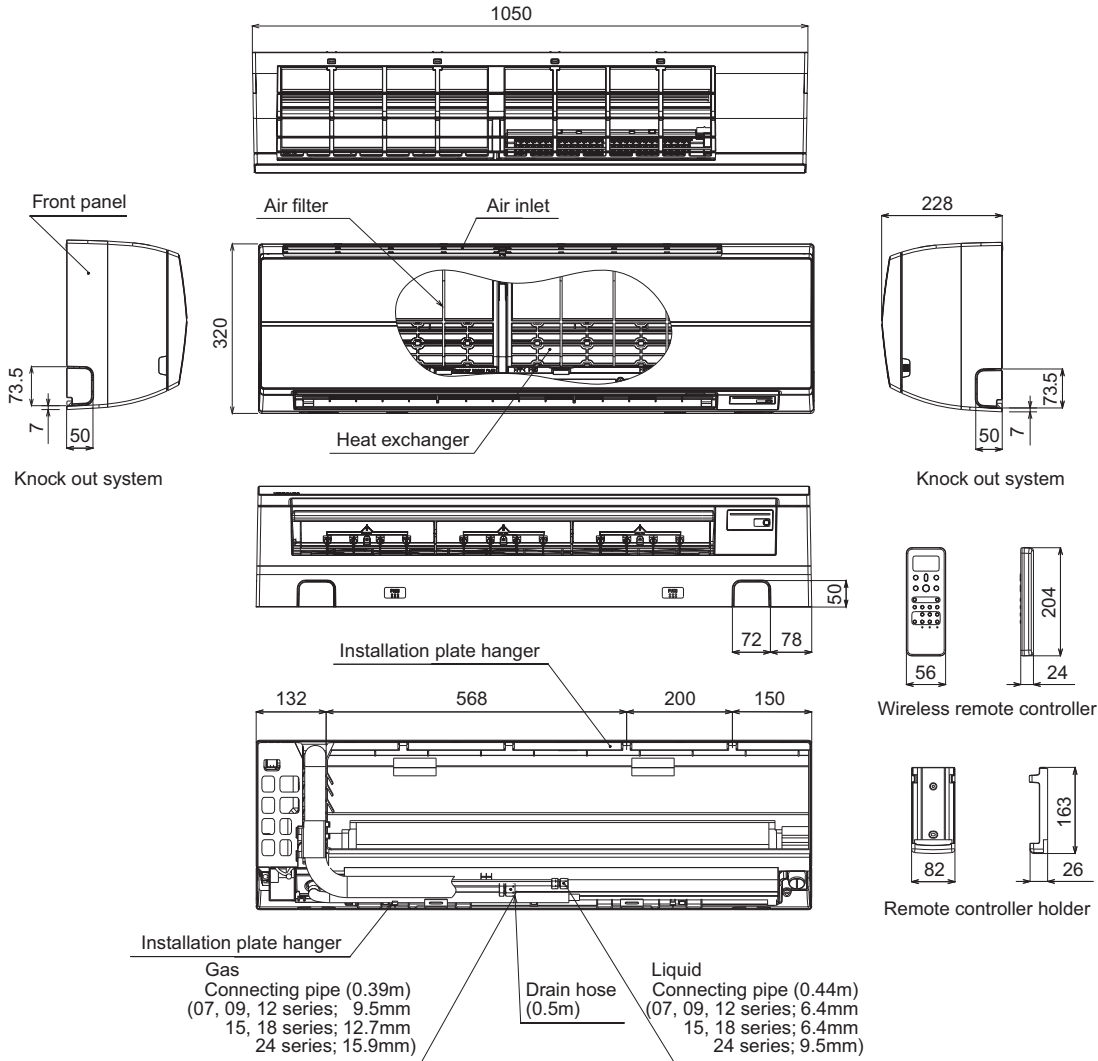
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

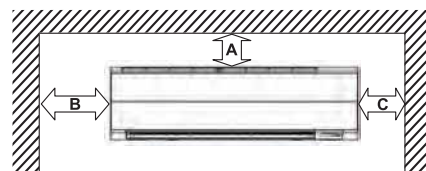


2 Dimensions

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



Space required for installation and servicing

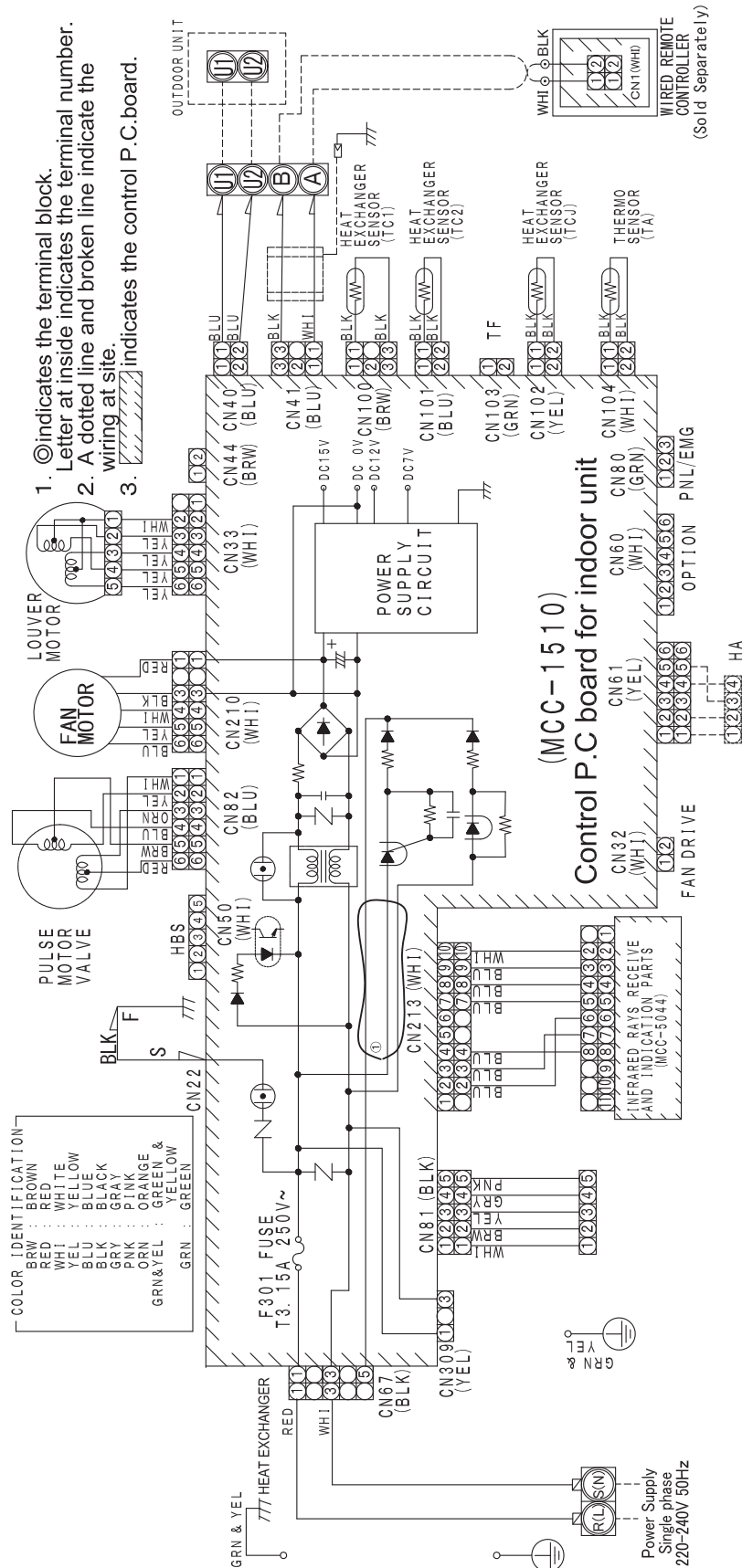


Distance	Comments
A	110 or more
B	850 or more
C	170 or more



3 Wiring diagram

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

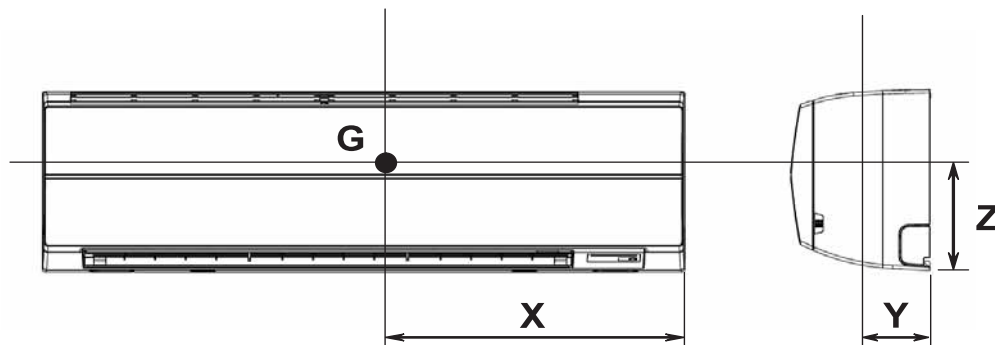




4 Center of gravity

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)



6 Sensible capacity table

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
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	

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



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

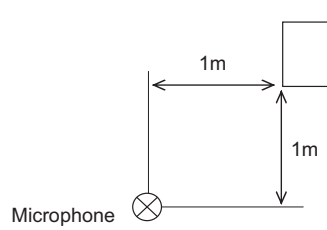
unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	10.0	3.7	2.6	4.1	2.7	4.4	2.9	4.5	2.9	4.6	2.9	4.9	2.9	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	

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



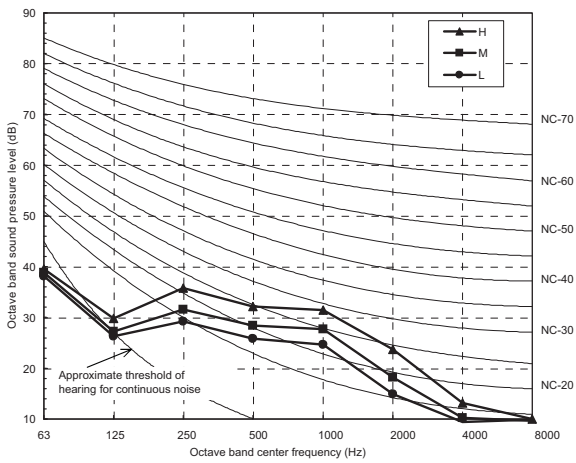
8 Sound characteristics (NC Curve)

High Wall Type (3 series)



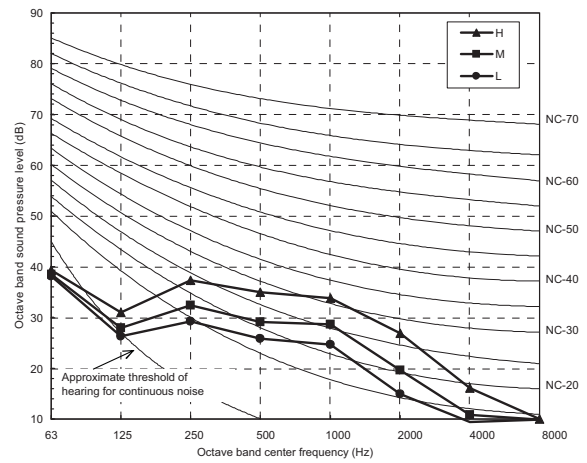
MMK-AP0073H

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



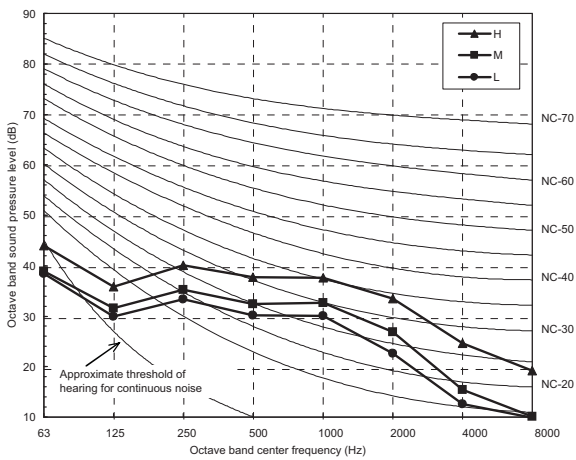
MMK-AP0093H/AP0123H

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



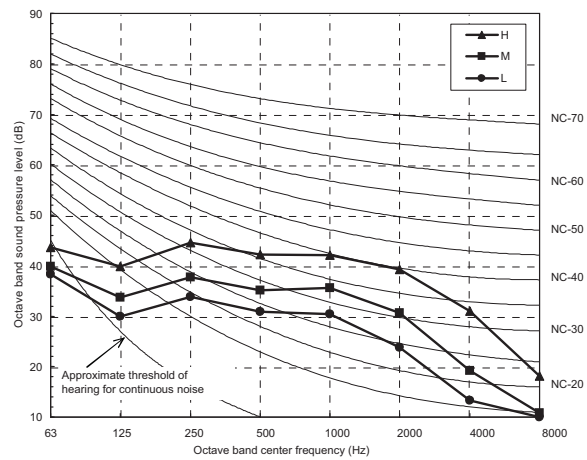
MMK-AP0153H/AP0183H

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



MMK-AP0243H

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







9 Accessories

Remote controller

Packed with the indoor unit

Name	Model name	Appearance	Application	Function
Wireless remote controller	WH-L11SE			<ul style="list-style-type: none"> • Start / Stop • Changing mode • Temperature setting • Air flow changing (5 steps) • Louver setting • Clock • Timer function <ul style="list-style-type: none"> - ON/OFF timer (10 min. step) - Everyday timer - Sleep timer - COMFORT SLEEP timer • High power mode • QUIET mode • One-touch pre-set memory



11-2-10. High-wall Type (4 series)

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.

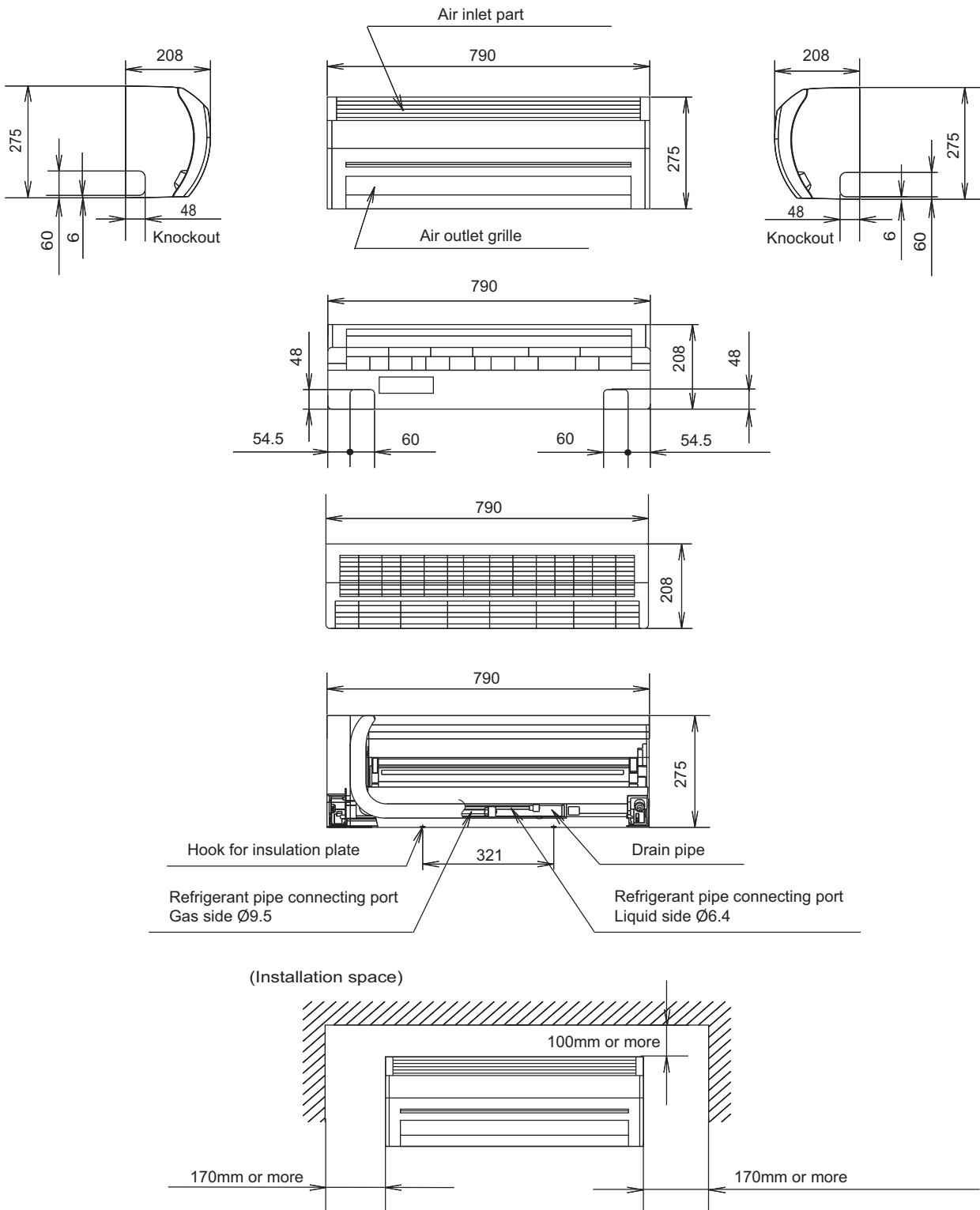
Note 3 : Wireless remote controller is packed with indoor unit.
Wired remote controller can be also connected.

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

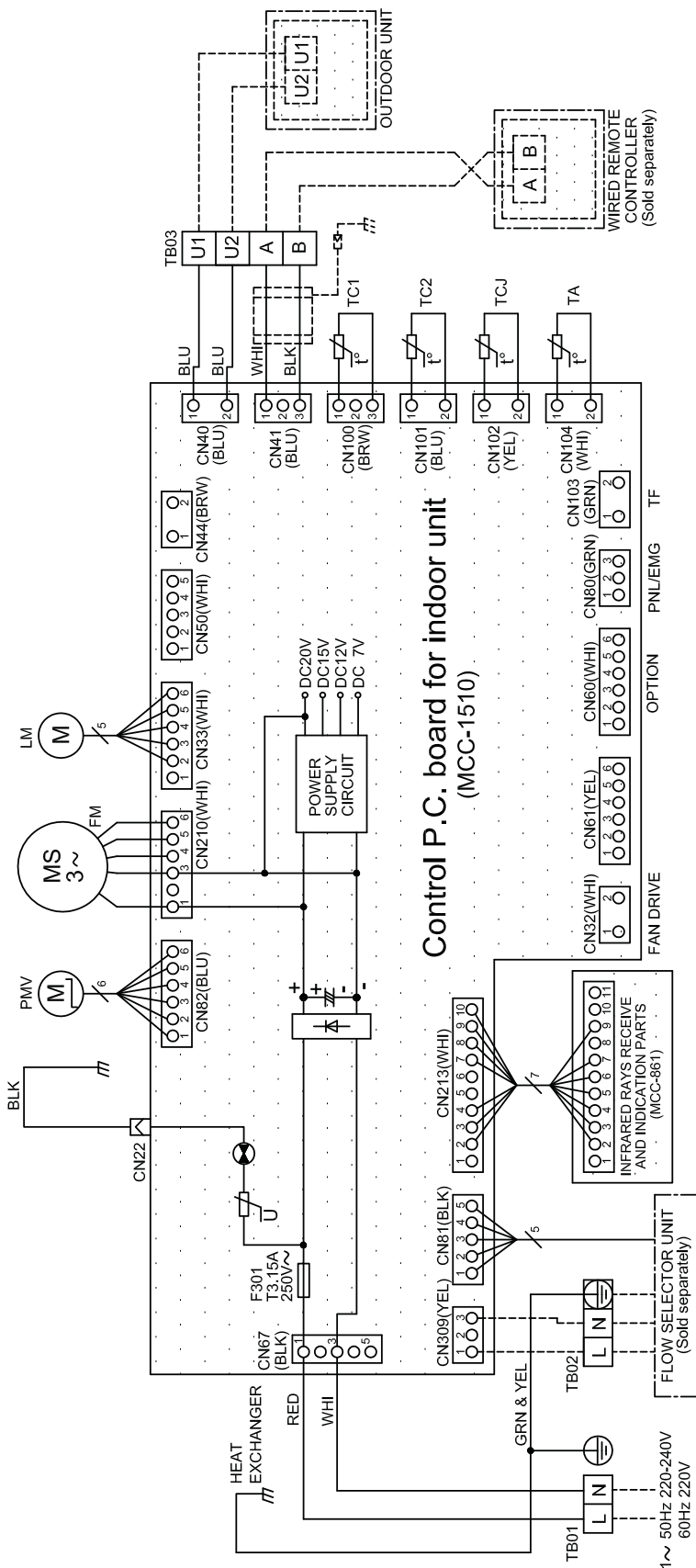


Note : All dimensions are in mm.



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 connection terminal.
4. ⊠ indicates the connector on the control P.C. board.

COLOR IDENTIFICATION

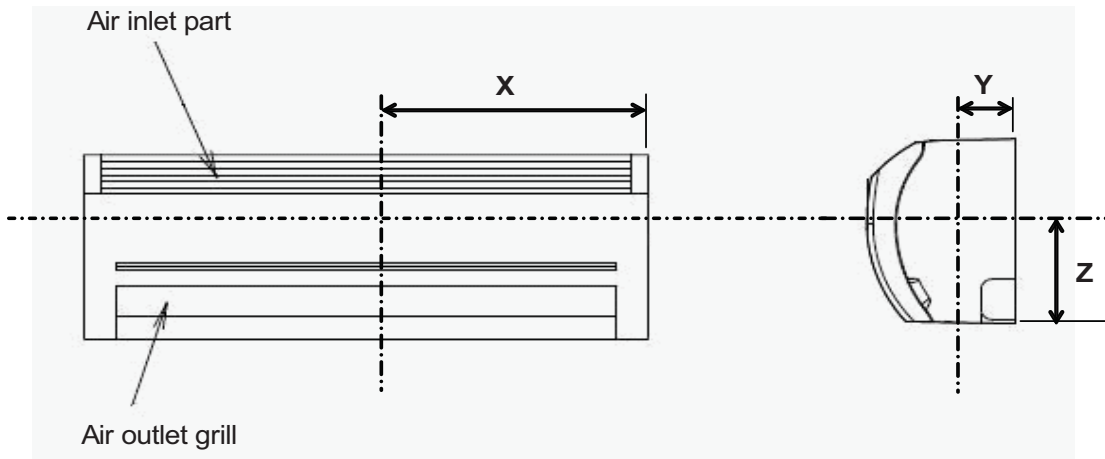
RED	: RED
WHI	: WHITE
YEL	: YELLOW
BLU	: BLUE
BLK	: BLACK
GRY	: GRAY
PNK	: PINK
ORN	: ORANGE
BRW	: BROWN
GRN	: GREEN
GRN&YEL	: GREEN&YELLOW

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]

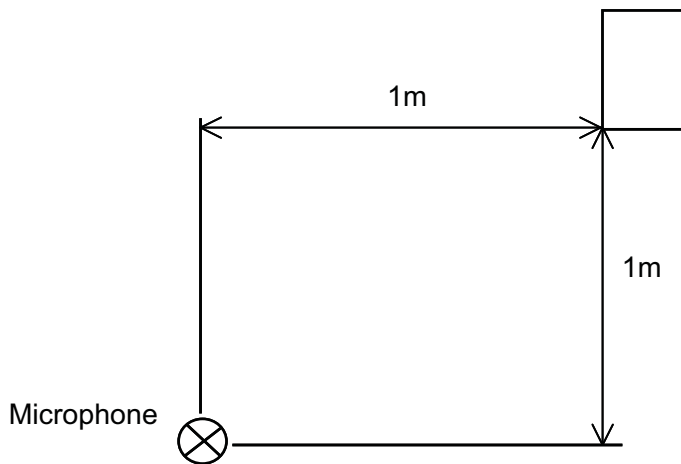
unit size	outdoor air temp. CDB	Indoor Air Temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	10.0	1.8	1.5	2.0	1.6	2.1	1.7	2.2	1.7	2.3	1.7	2.4	1.7	2.5	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
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	



8. Sound Characteristics (NC curve)

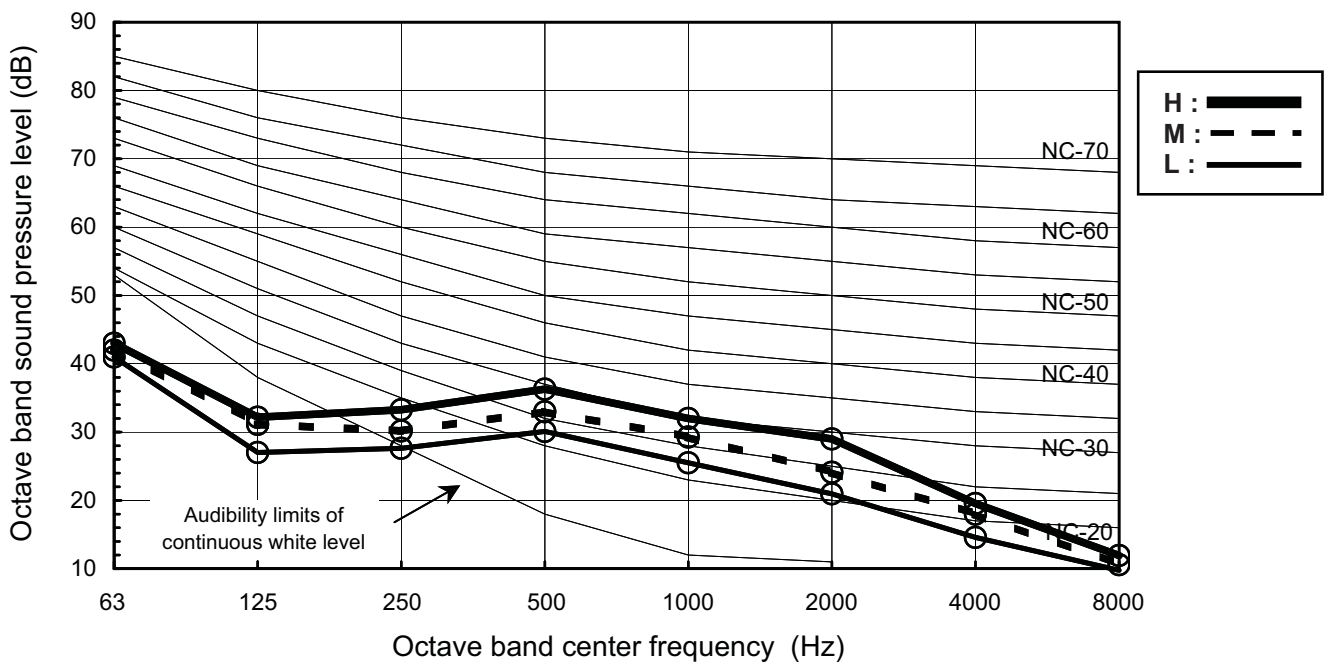
High-wall Type (4 series)

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



MMK-AP0074MH-E

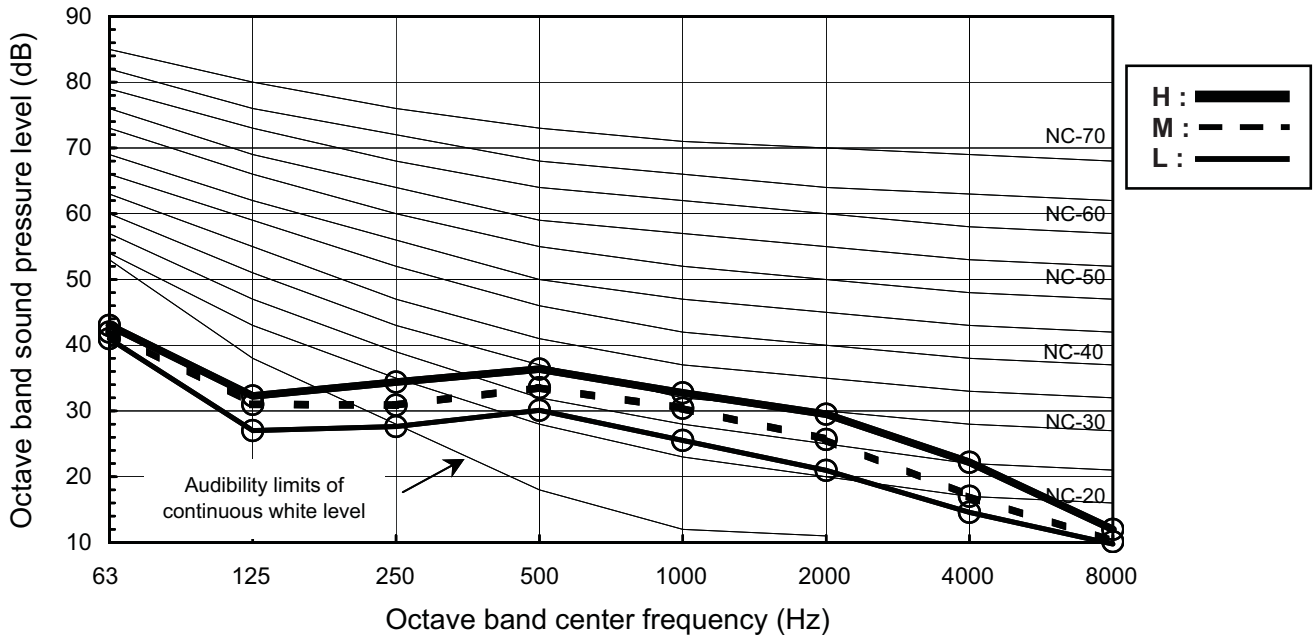
Fan tap	H	M	L
Sound pressure level (dB(A))	35	32	29





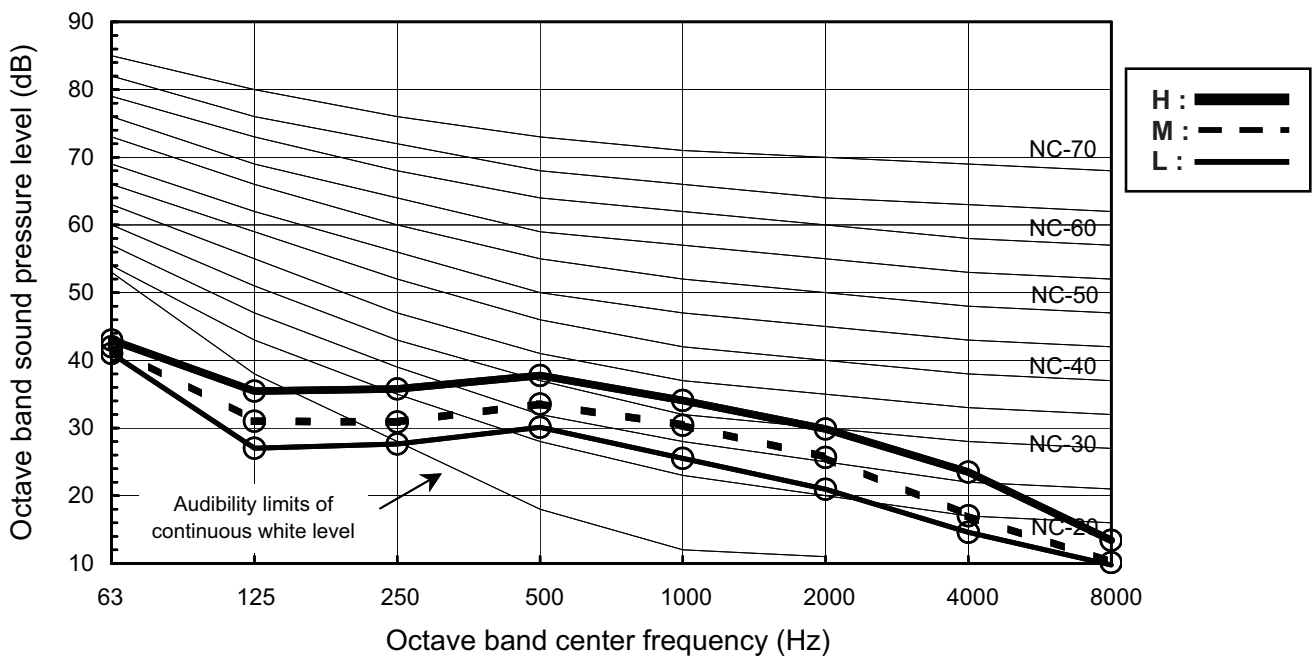
MMK-AP0094MH-E

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)

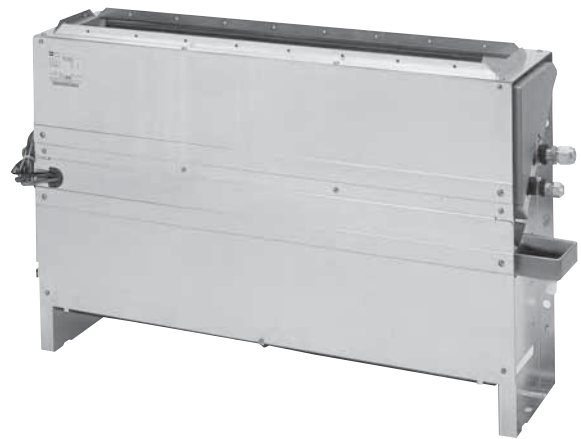
(Note.1) SMMS-i cannot accept "AUTO" mode, Super HRM can accept "AUTO" mode.



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)	(m ³ /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.

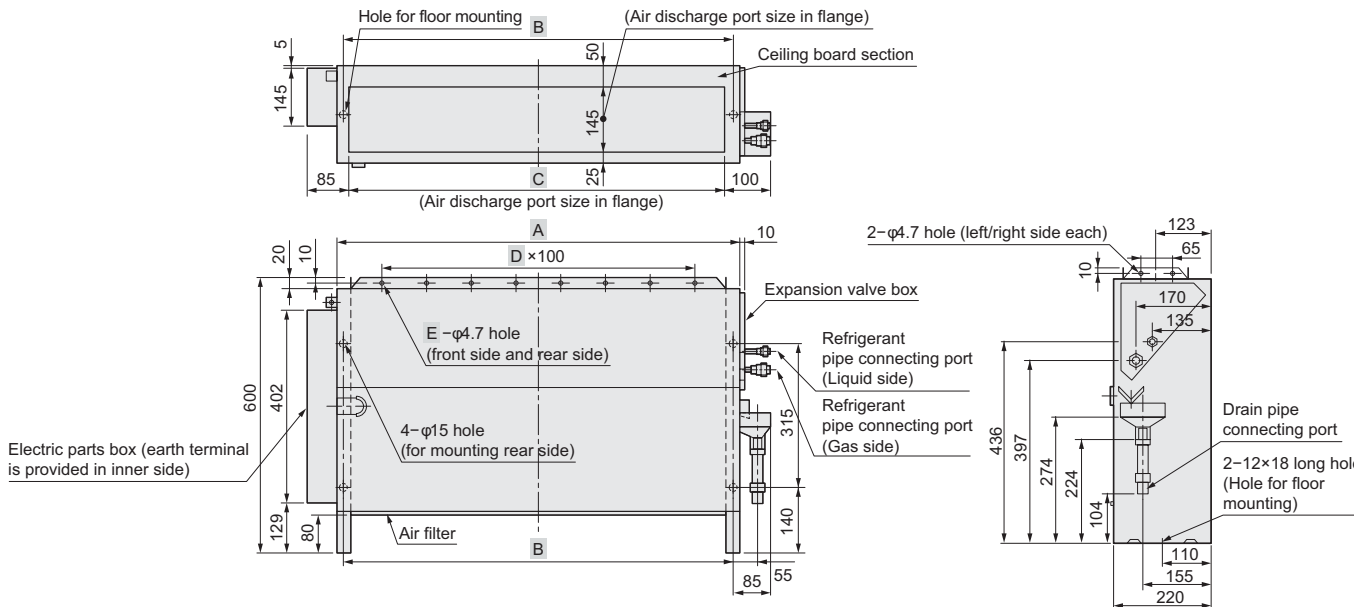
Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

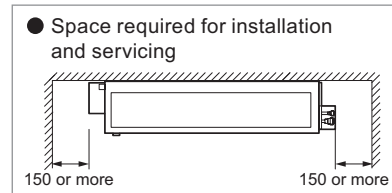


2. Dimension

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

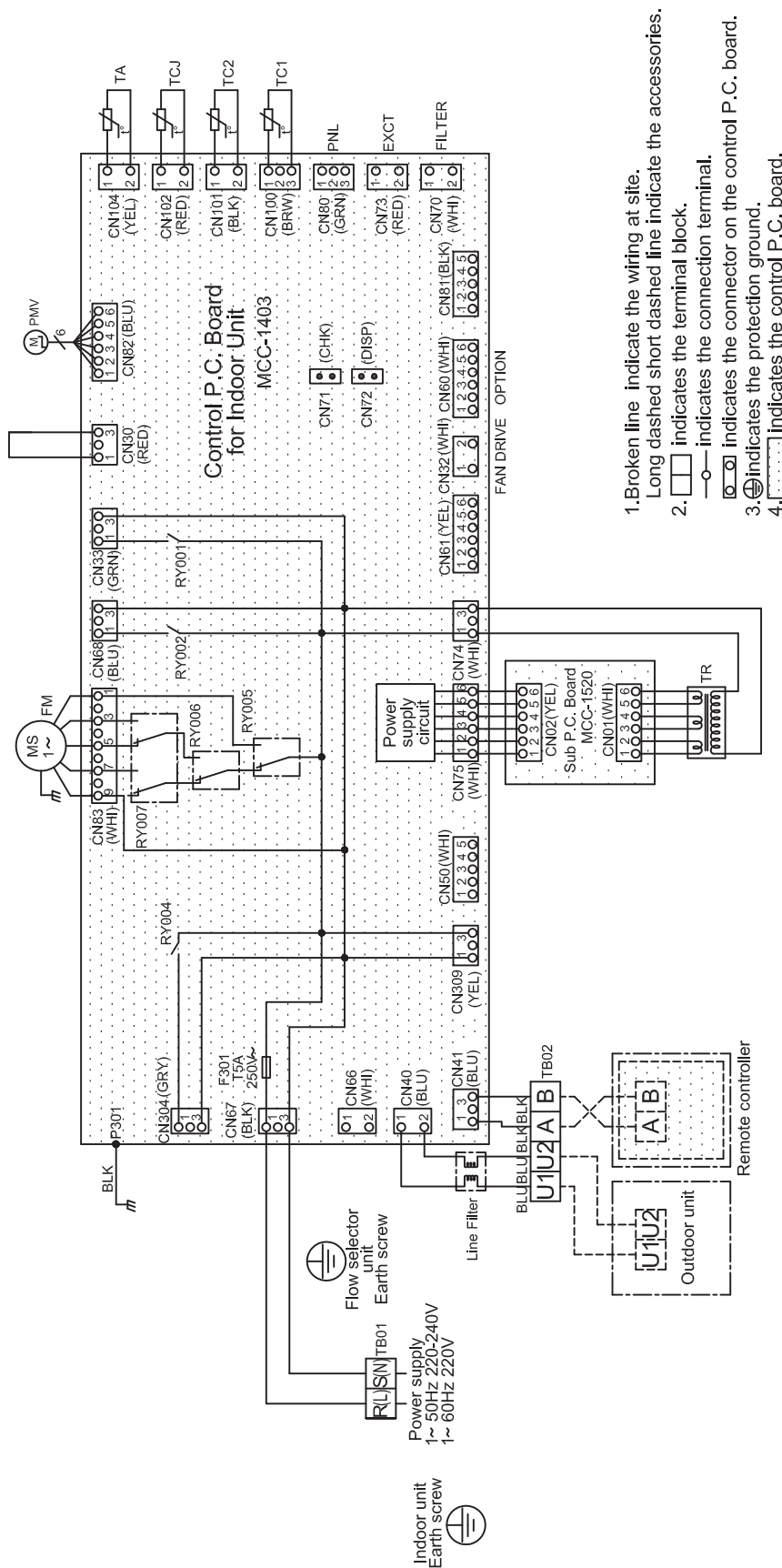


(Unit: mm)



3. Wiring diagram

MML-AP0074BH-E, AP0094BH-E, AP0124BH-E, AP0154BH-E, AP0184BH-E, AP0244BH-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 protection ground.
4. indicates the control P.C. board.

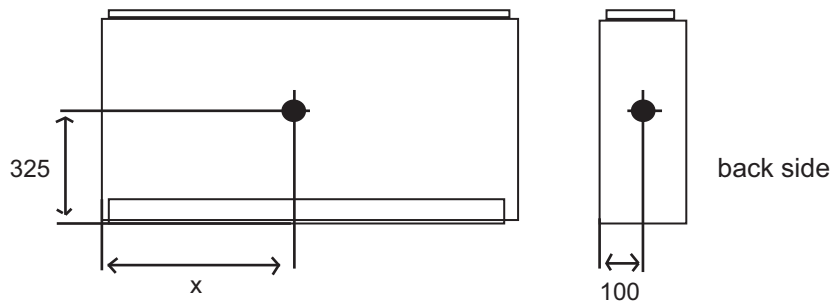
Symbol	Parts Name
CN**	Connector
F301	Fuse
FM	Fan Motor
PMV	Pulse Motor Valve
RC	Running Capacitor
RY005,006,007	Fan Motor Control Relay
TA	Indoor temp sensor
TB01,02,03	Terminal Block
TC1,TC2,TCJ	Temp sensor
TR	Transformer

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



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 0074 BH-E	230-1-50	198	264	0.019	0.29	0.36	15
	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)



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
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	
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
	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	
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
	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	
015	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	



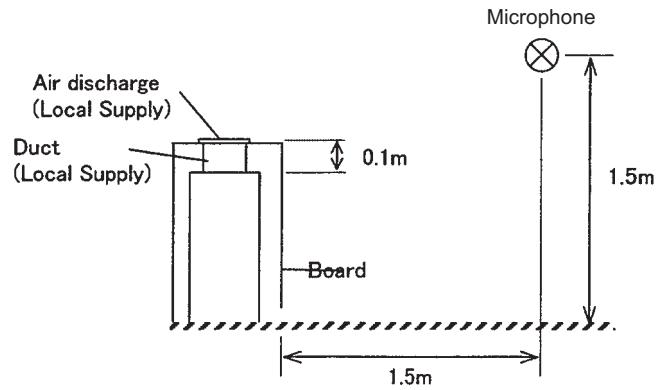
Floor Standing Concealed Type (MML-AP*4BH-E)** TC : Total capacity [kW] SHC : Sensible capacity [kW]

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	
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	
024	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	

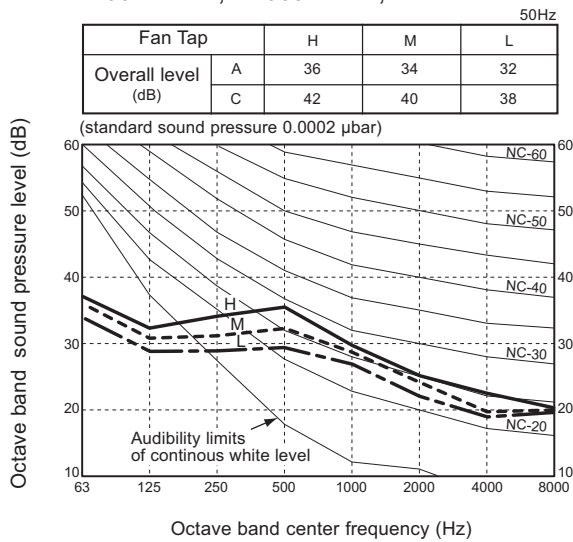


7. Sound level data (NC CURVE)

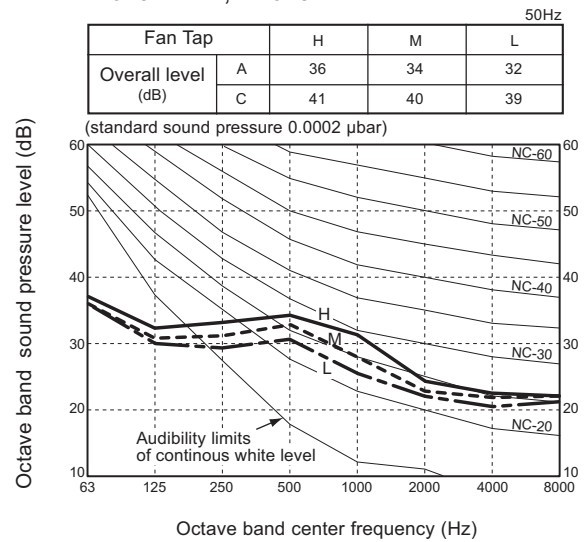
Sound level values shown are based on a measurement in a non resonant room.



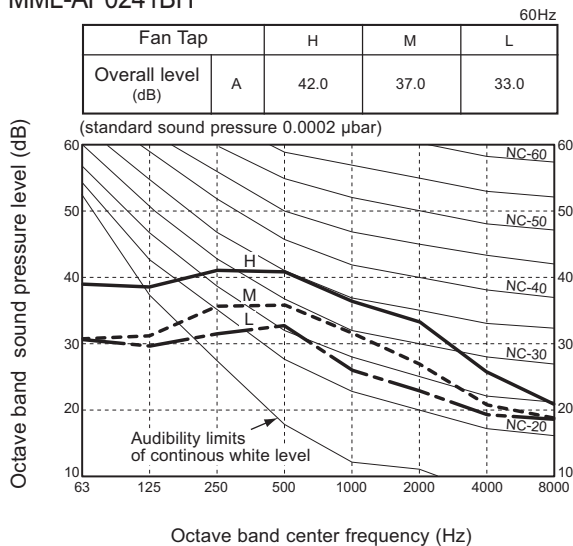
MML-AP0074BH-E, AP0094BH-E, AP124BH-E



MML-AP0154BH-E, AP0184BH-E



MML-AP0241BH





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)	(m ³ /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.

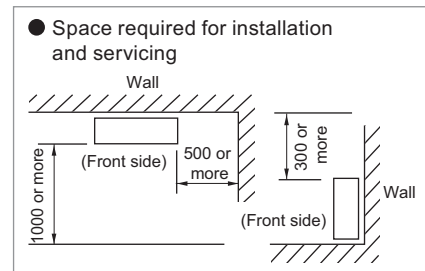
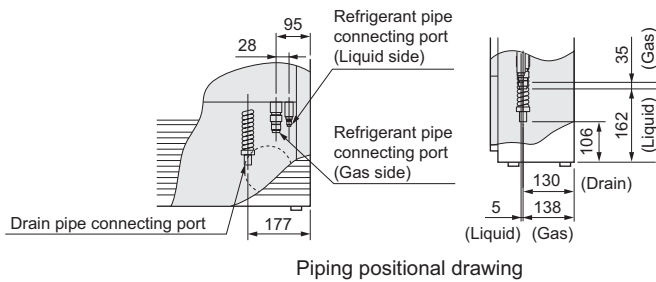
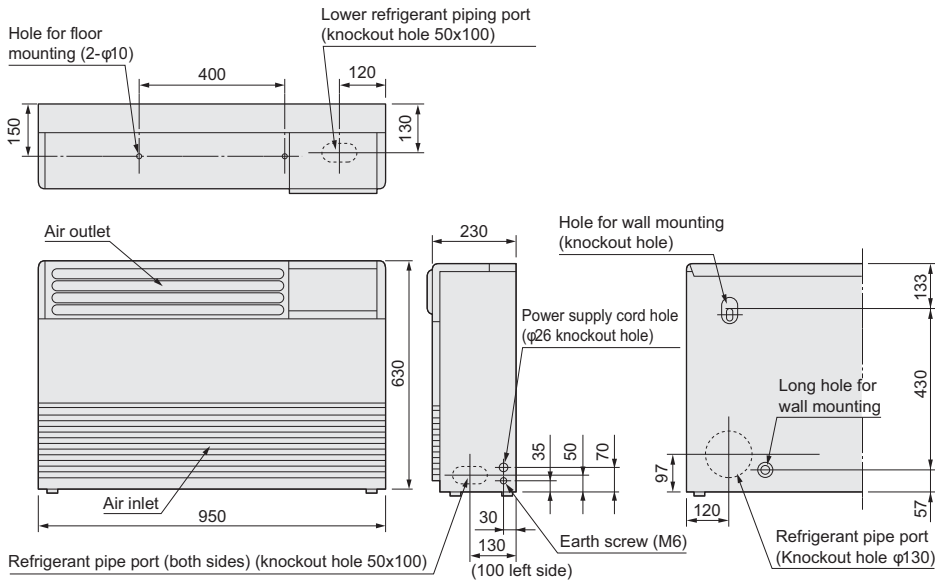
Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

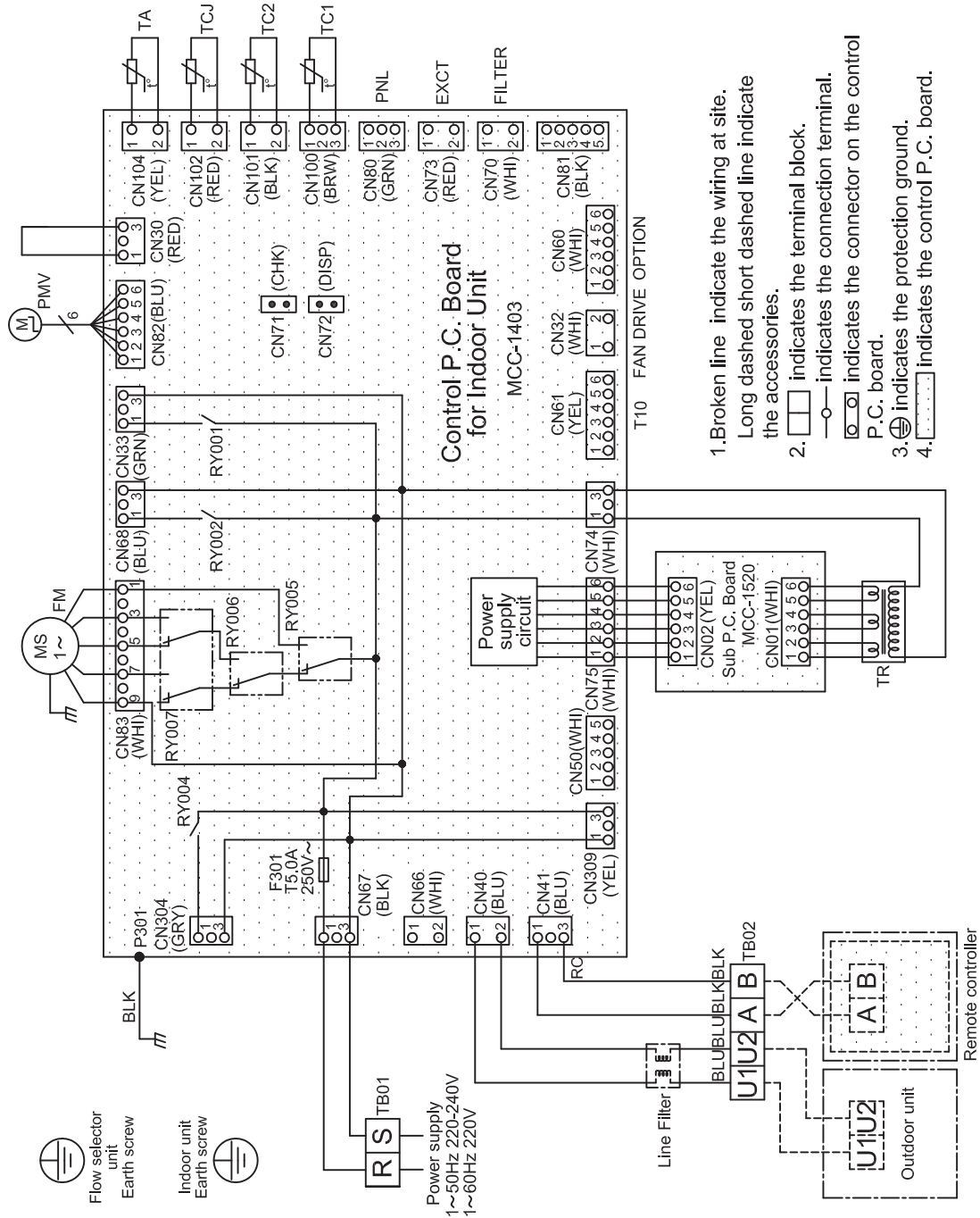


(Unit: mm)



3. Wiring diagram

MML-AP0074H-E, AP0094H-E, AP0124H-E, AP0154H-E, AP0184H-E, AP0244H-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 protection ground.
4. □ indicates the control P.C. board.

COLOR IDENTIFICATION

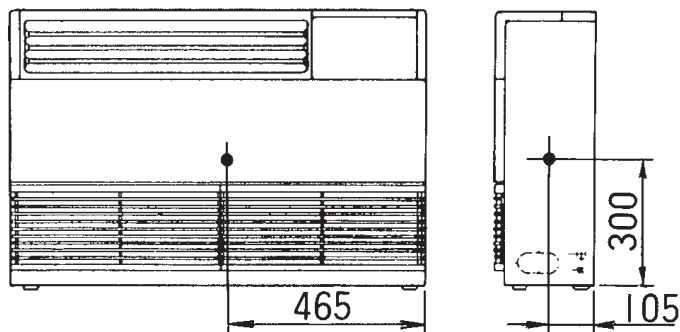
RED	: RED
WHI	: WHITE
YEL	: YELLOW
BLU	: BLUE
BLK	: BLACK
GRY	: GRAY
PNK	: PINK
ORN	: ORANGE
BRW	: BROWN
GRN	: GREEN

Symbol	Parts Name
CN**	Connector
F301	Fuse
FM	Fan Motor
PMV	Pulse Motor Valve
RC	Running Capacitor
RY005,006,007	Fan Motor Control Relay
TA	Indoor temp sensor
TB01,02	Terminal Block
TC1,TC2,TCJ	Temp sensor
TR	Transformer



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)



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
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	
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	
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
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	
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
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	
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]

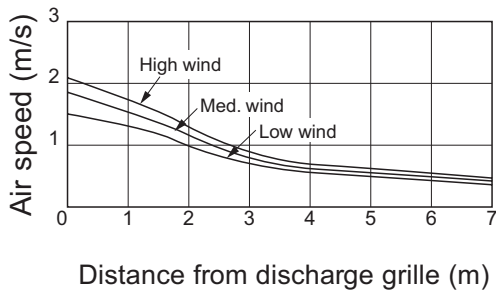
SHC : Sensible capacity [kW]

unit size	outdoor air temp. °CDB	indoor air temp.													
		14.0°CWB		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
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	
024	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	

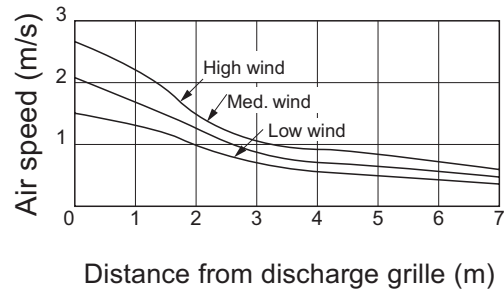


7. Air throw distance chart

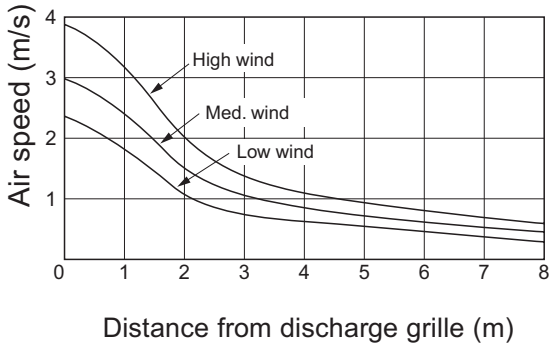
MML-AP0074H-E, AP0094H-E



MML-AP0124H-E, AP0154H-E



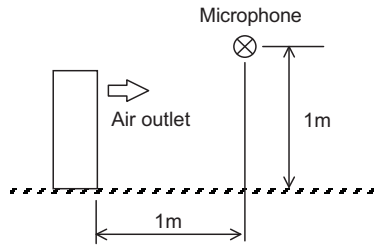
MML-AP0184H-E, AP0244H-E





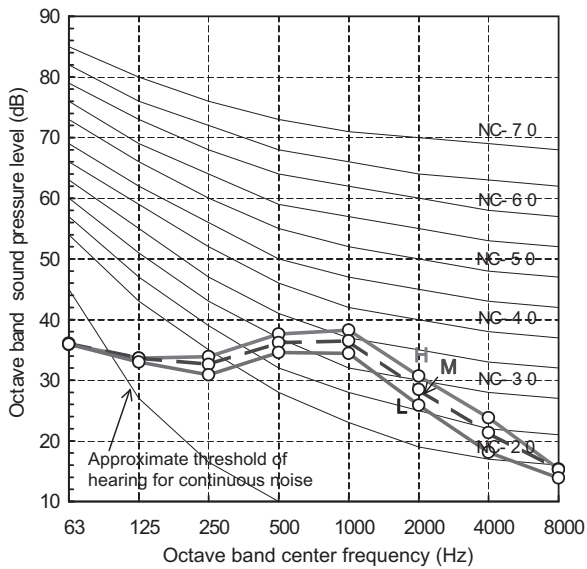
8. Sound characteristics (NC-Curve)

[Measuring location]



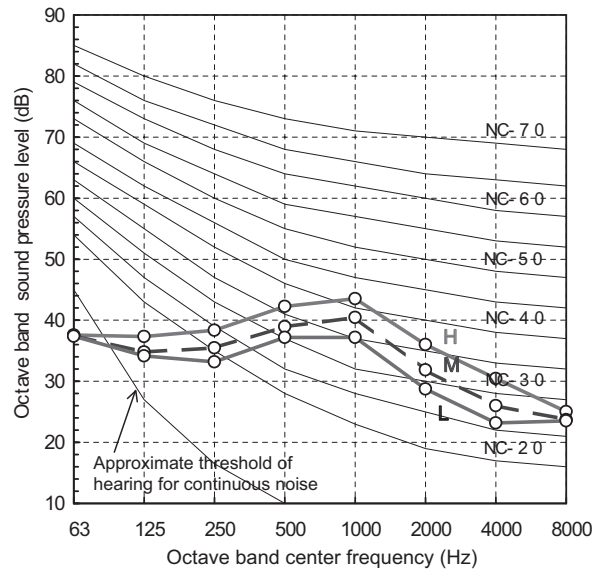
MML-AP0074H-E, AP0094H-E

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



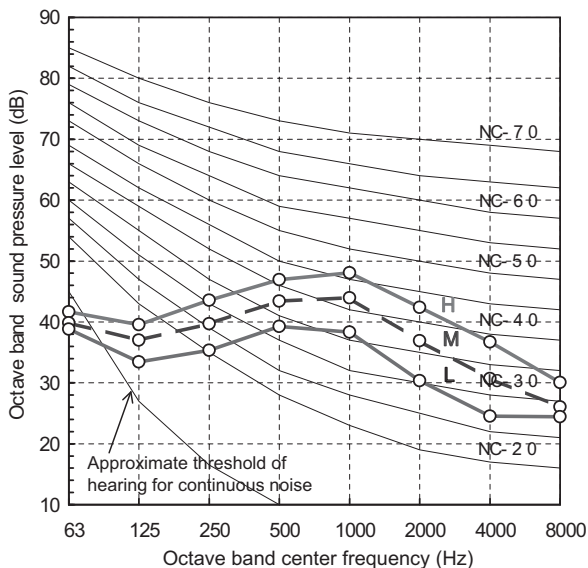
MML-AP0124H-E, AP0154H-E

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		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)	(m ³ /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)	∅ 12.7		∅ 15.9				
	Liquid side	(mm)	∅ 6.4		∅ 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.

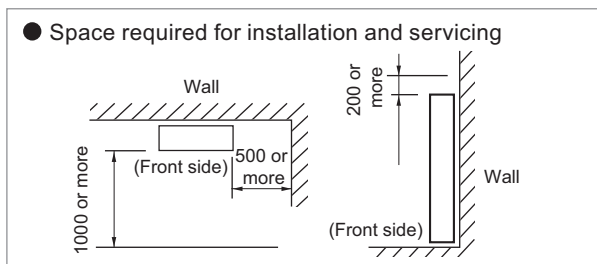
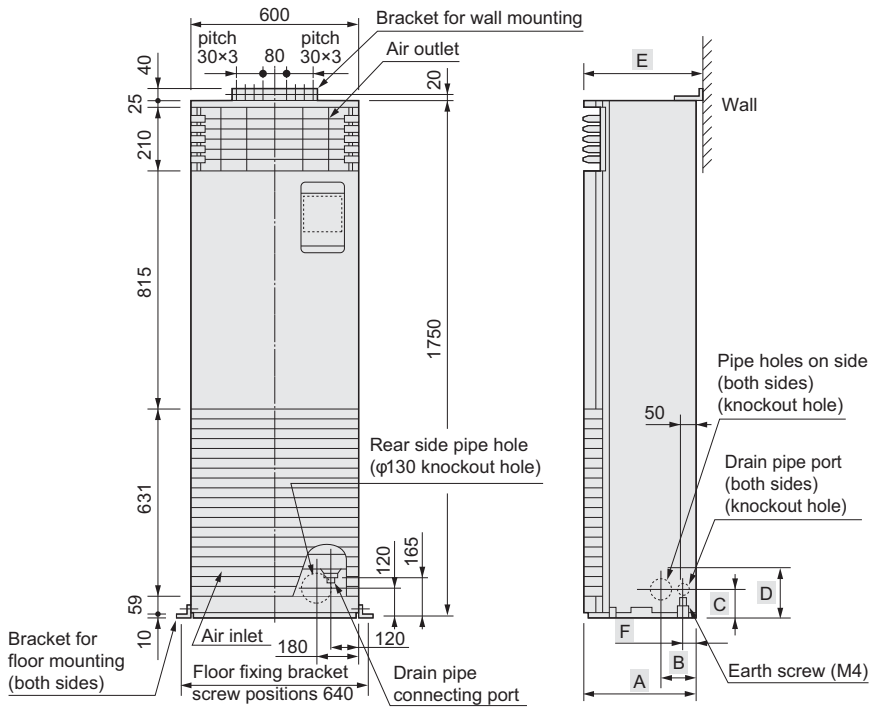
Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B8616. Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

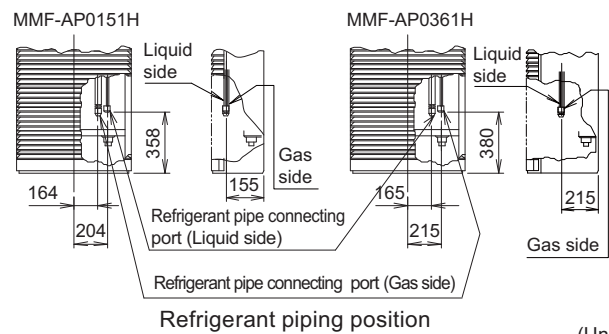


2. Dimension

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

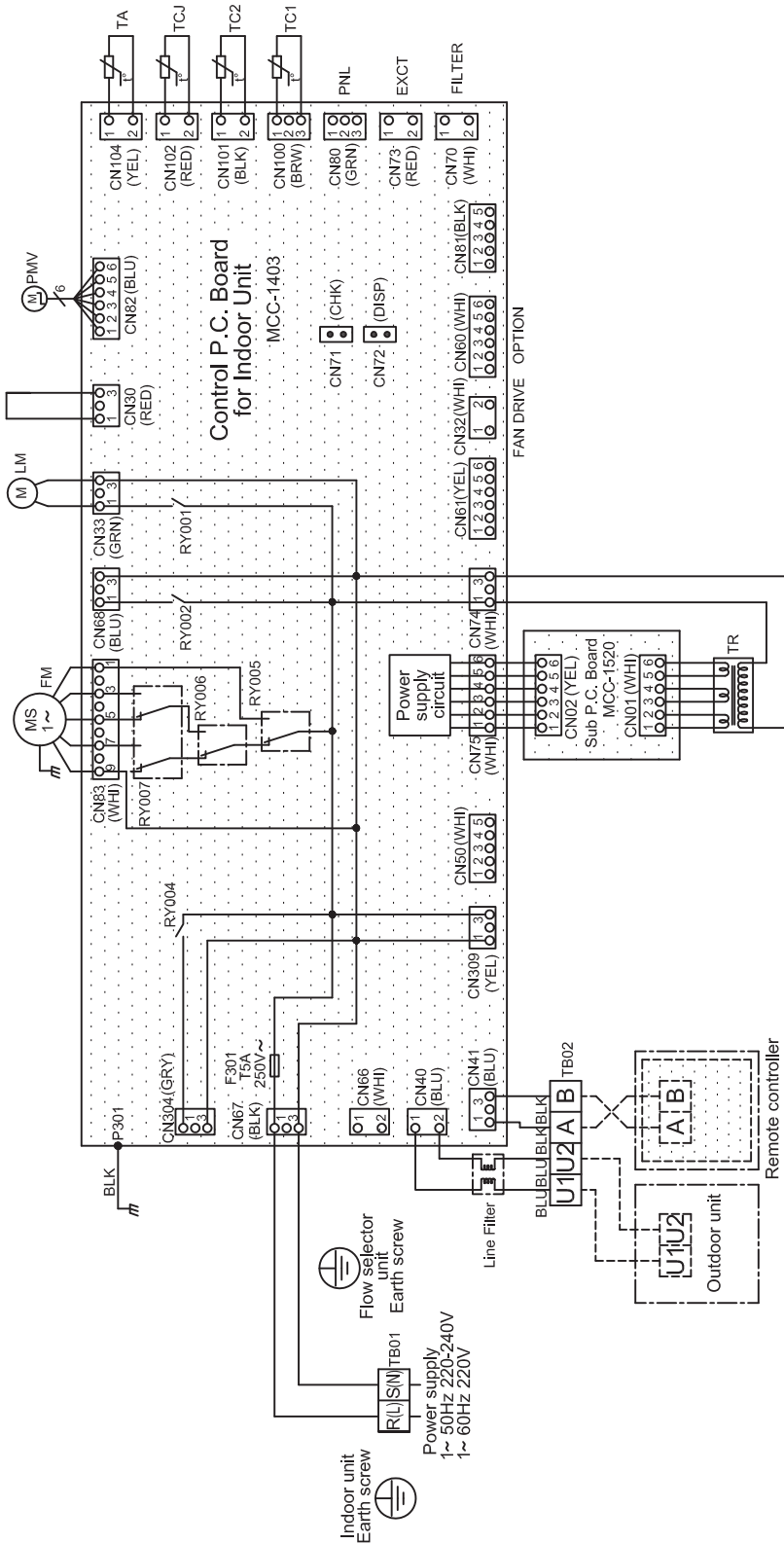


(Unit: mm)



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.
4. indicates the control P.C. board.

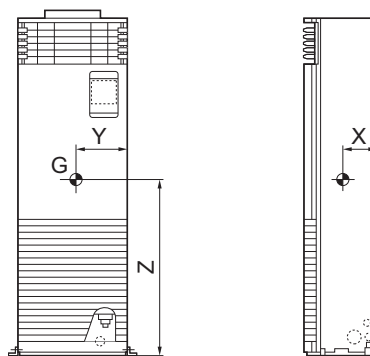
Symbol	Parts Name
CN**	Connector
LM	Lower Motor
F301	Fuse
FM	Fan Motor
PMV	Pulse Motor Valve
RC	Running Capacitor
RY001	Lower Control Relay
RY005,006,007	Fan Motor Control Relay
TA	Indoor temp sensor
TB01,02,03	Terminal Block
TC1,TC2,TCJ	Temp sensor
TR	Transformer

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



4. Center of Gravity

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)



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		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	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	
37.0	3.6	2.9	4.0	3.1	4.2	3.3	4.4	3.3	4.5	3.3	4.7	3.3	5.0	3.2	
39.0	3.5	2.8	3.8	3.0	4.1	3.2	4.2	3.2	4.4	3.2	4.6	3.2	4.8	3.1	
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	
37.0	4.5	3.5	4.9	3.7	5.3	4.0	5.4	4.0	5.6	4.0	5.9	3.9	6.2	3.8	
39.0	4.3	3.4	4.8	3.6	5.1	3.9	5.3	3.9	5.4	3.9	5.7	3.8	6.0	3.7	
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	
37.0	5.6	4.5	6.2	4.8	6.7	5.1	6.9	5.1	7.1	5.1	7.5	5.1	7.8	5.0	
39.0	5.5	4.4	6.1	4.7	6.5	5.0	6.7	5.0	6.9	5.0	7.3	4.9	7.6	4.8	
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)**

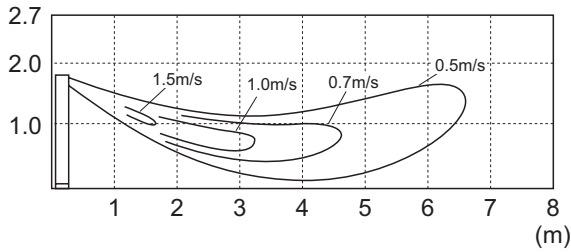
TC : Total capacity [kW] SHC : Sensible capacity [kW]

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
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	
048	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
	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	
056	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	

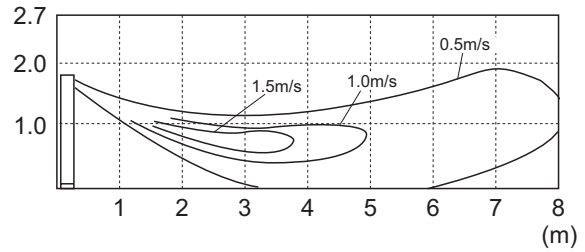


7. Air throw distance chart

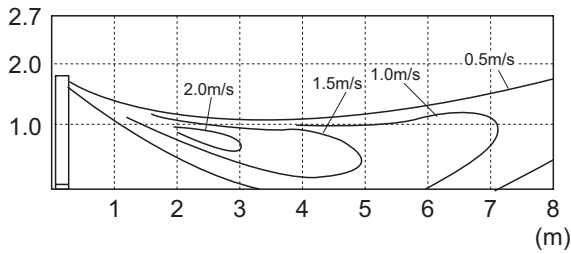
(m) MMF-AP0154H-E, AP0184H-E



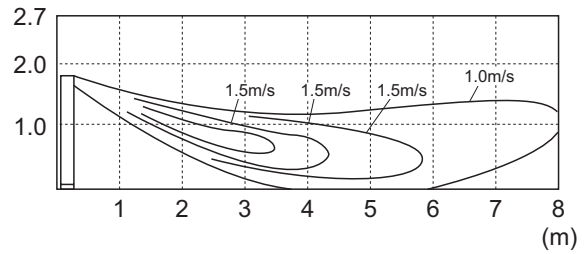
(m) MMF-AP0244H-E, AP0274H-E



(m) MMF-AP0364H-E



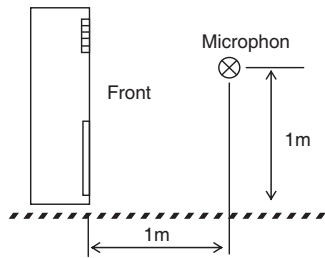
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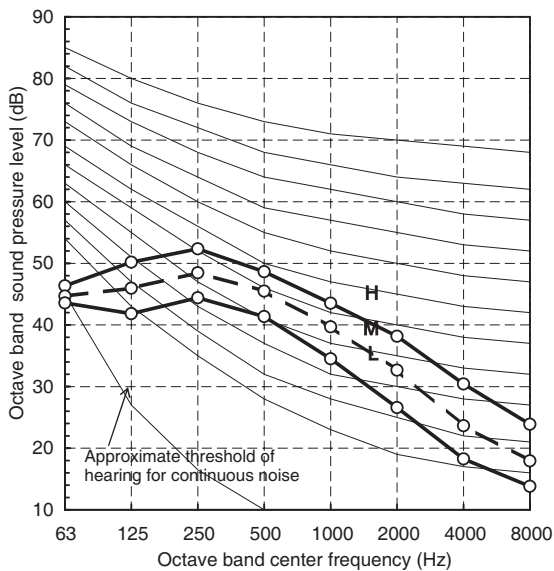
8. Sound characteristics (NC Curve)

Measuring location



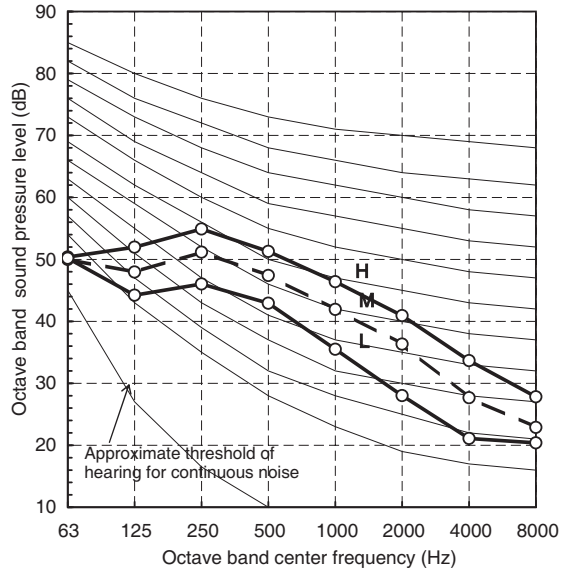
MMF-AP0154H-E, AP0184H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	46	43	38



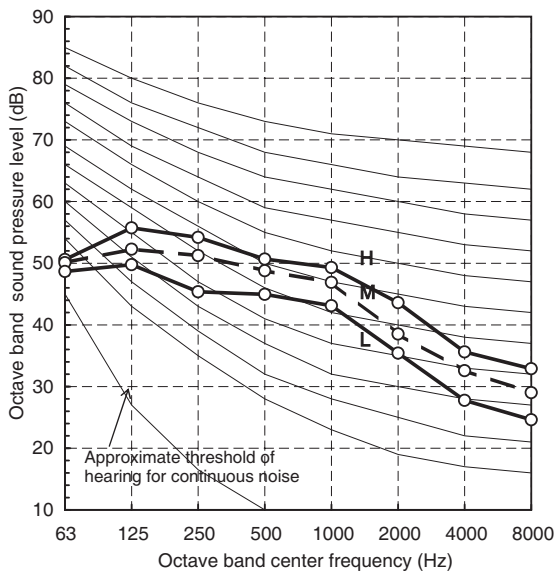
MMF-AP0244H-E, AP0274H-E

Fan tap	H	M	L
Sound pressure level (dB(A))	49	45	40



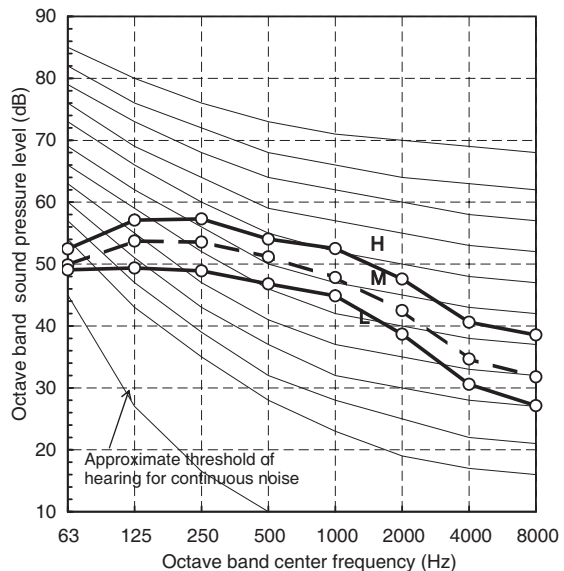
MML-AP0364H-E

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. 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. 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

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)	(m ³ /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

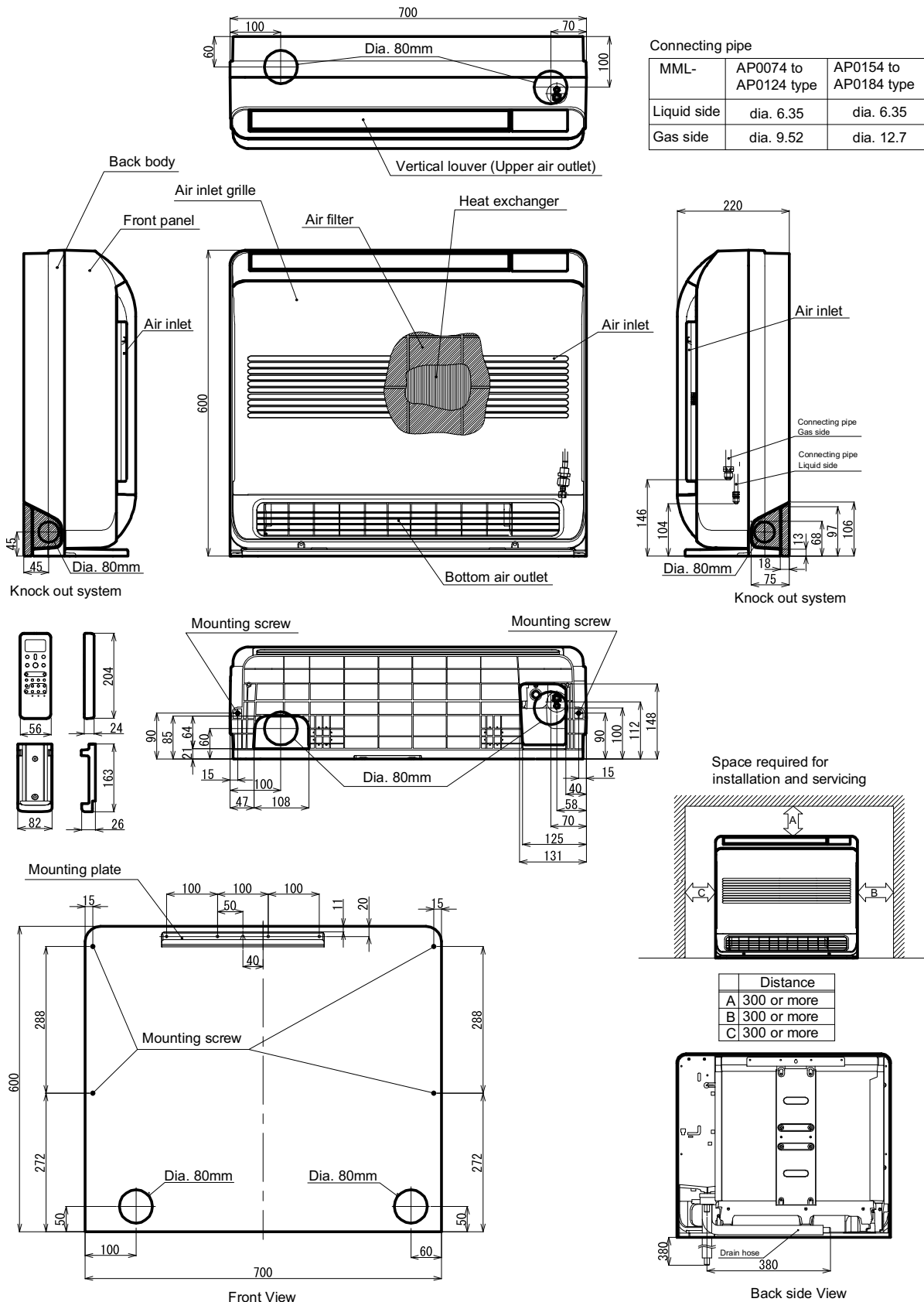
* : Mini-SMMS only



2. Dimension

MML-AP0074NH-E, AP0094NH-E, AP0124NH-E, AP0154NH-E, AP0184NH-E

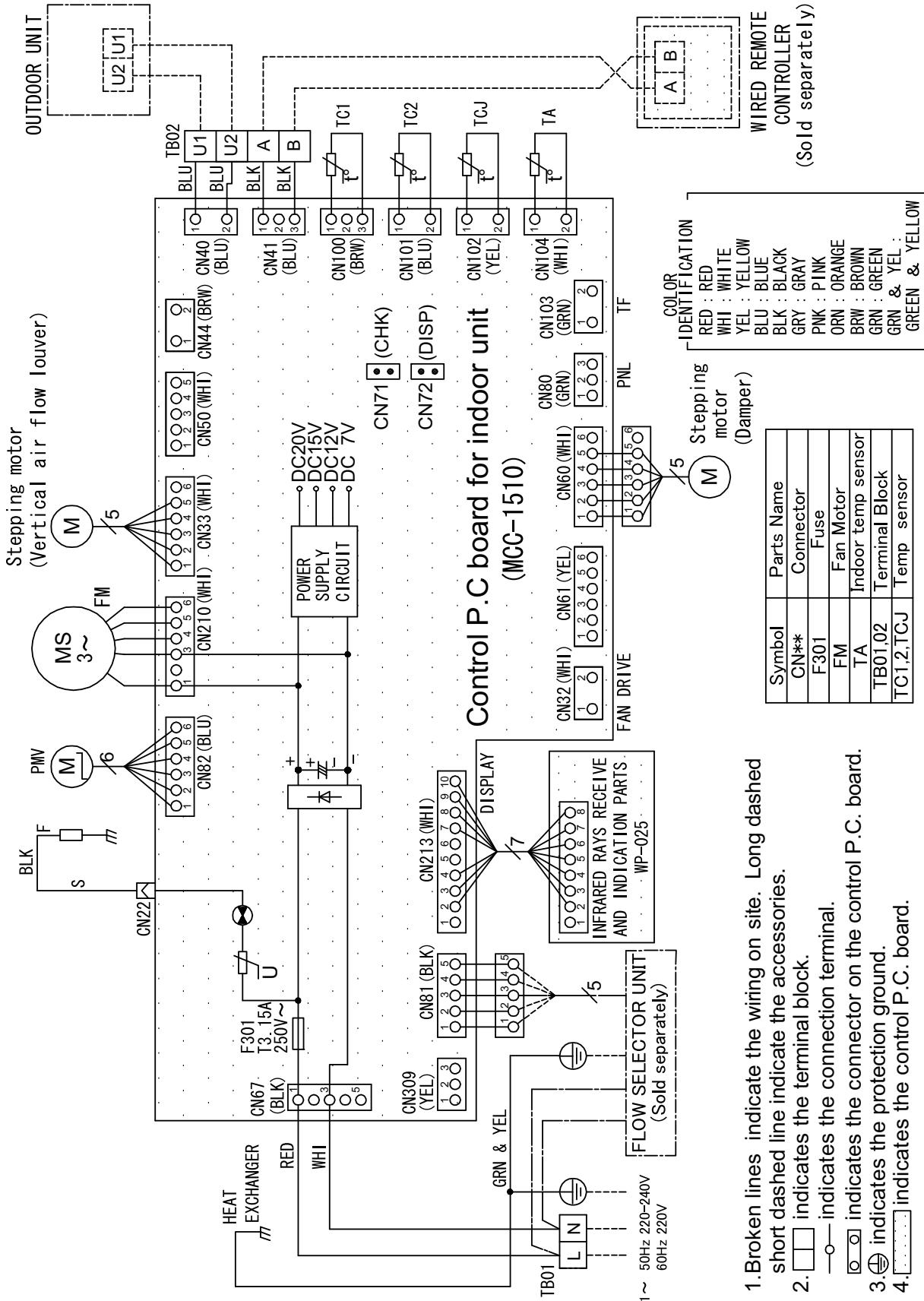
unit:mm





3. Wiring diagram

MML-AP0074NH-E, AP0094NH-E, AP0124NH-E, AP0154NH-E, AP0184NH-E



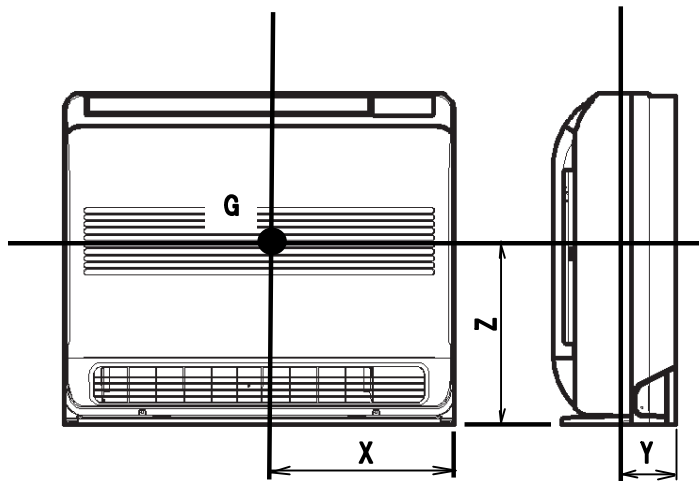
1. Broken lines indicate the wiring on site. Long dashed short dashed line indicate the accessories.
2. □ □ indicates the terminal block.
3. ○ — indicates the connection terminal.
4. □ □ □ indicates the connector on the control P.C. board. □ □ □ indicates the protection ground.
4. □ □ □ □ indicates the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



4. 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





5. 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)



6. 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	
		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	



6. 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
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	

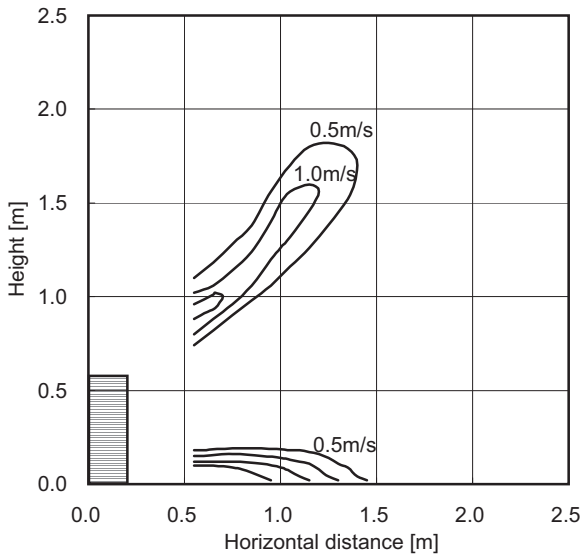


7. Air throw distance chart

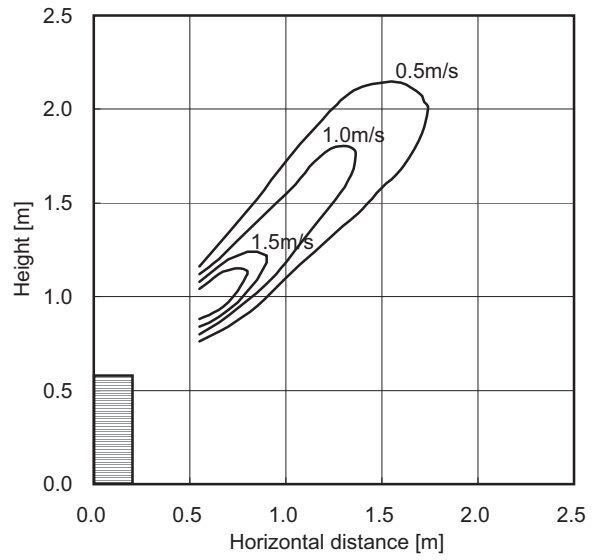
Console Type

MML-AP0074NH-E, AP0094NH-E

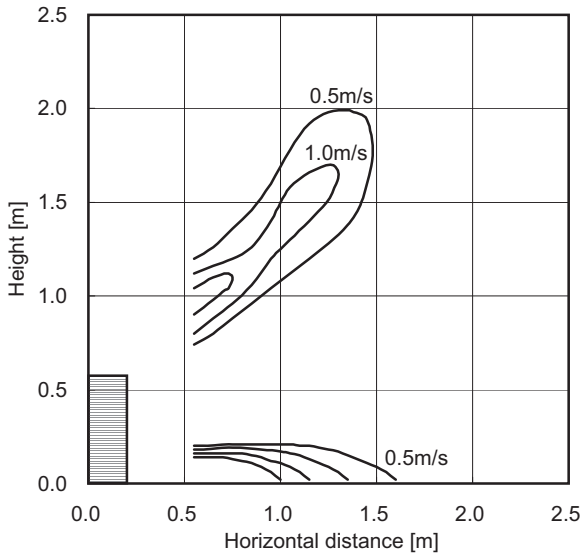
Cooling - Upper & Lower



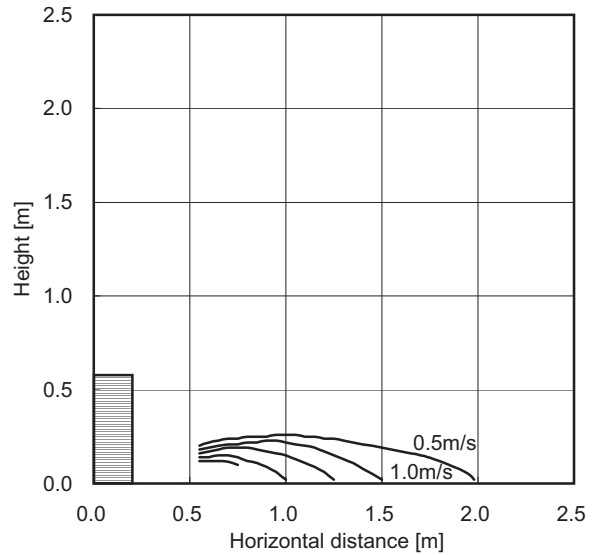
Cooling - Upper



Heating - Upper & Lower



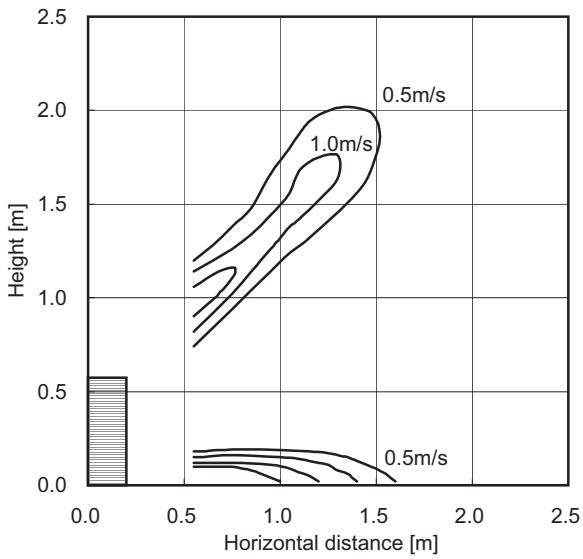
Heating - Lower



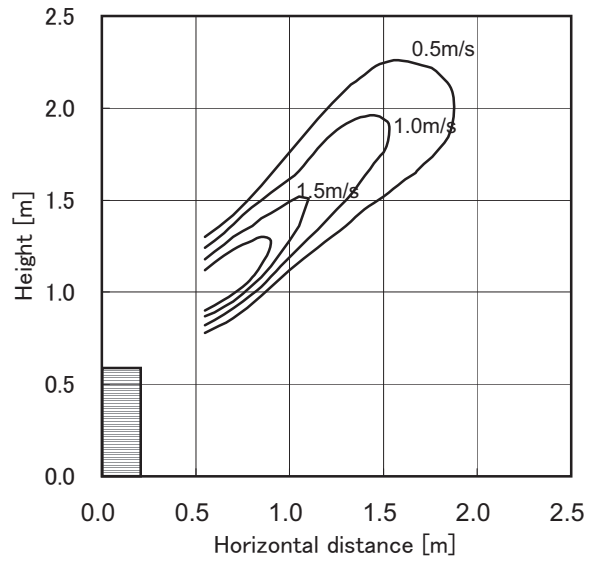


MML-AP0124NH-E

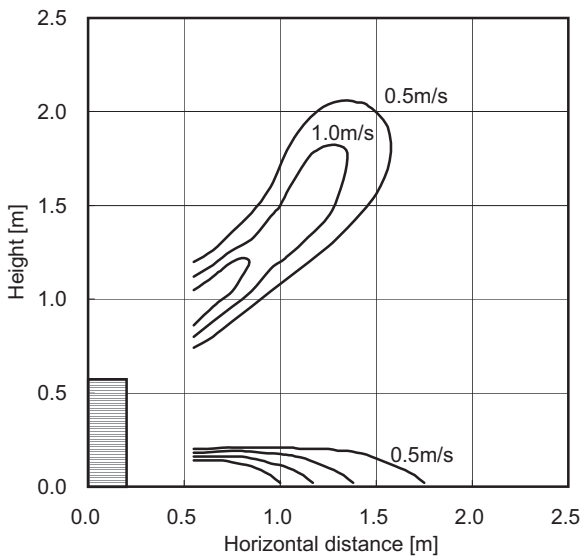
Cooling - Upper & Lower



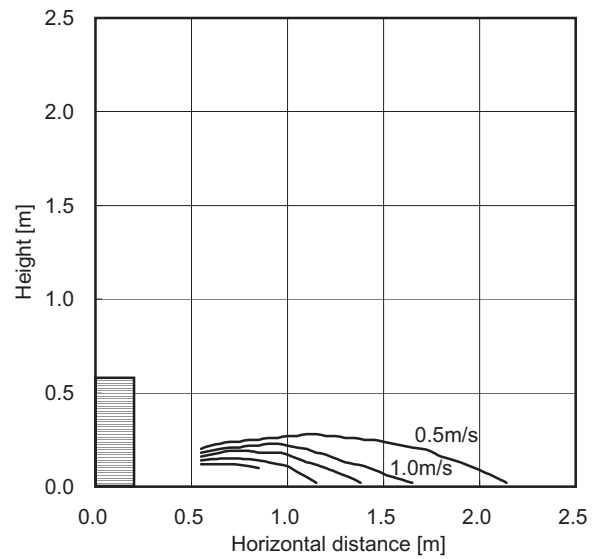
Cooling - Upper



Heating - Upper & Lower



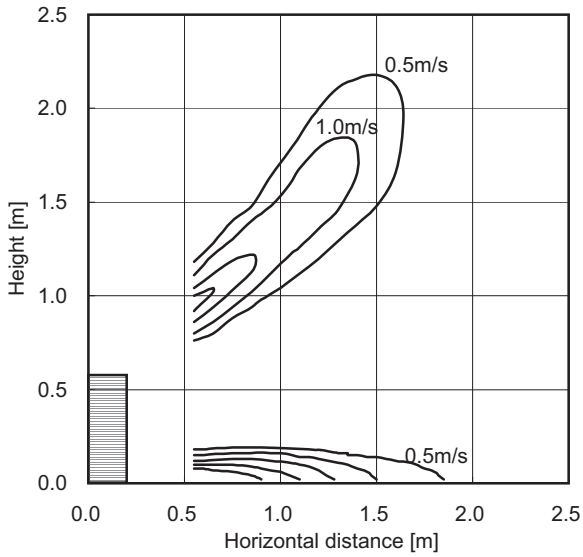
Heating - Lower



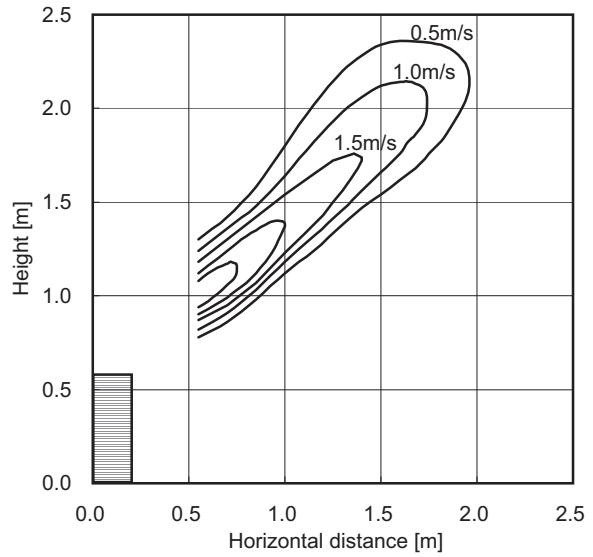


MML-AP0154NH-E

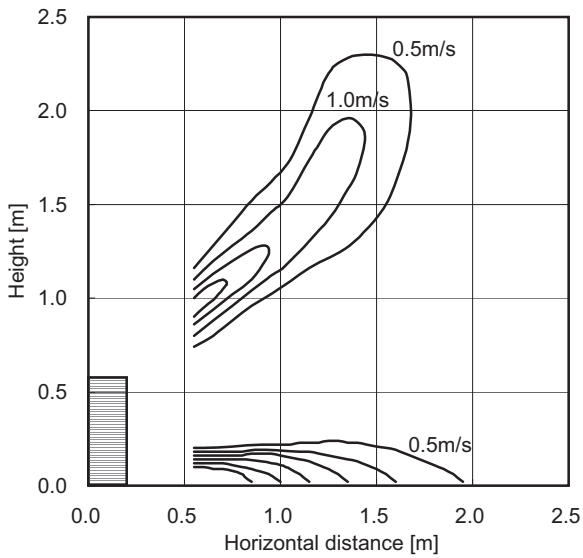
Cooling - Upper & Lower



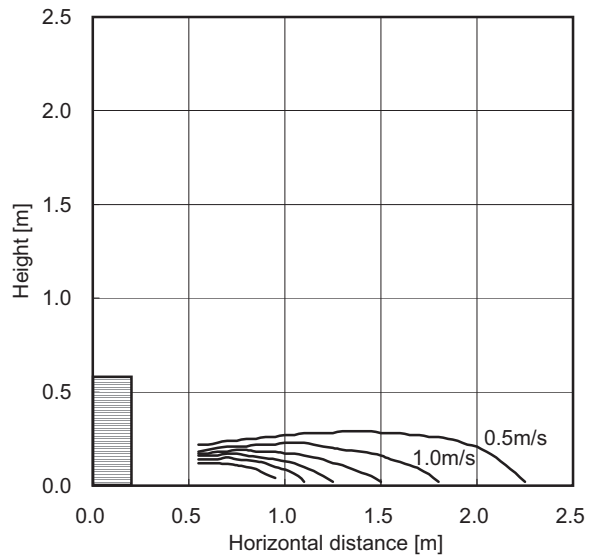
Cooling - Upper



Heating - Upper & Lower



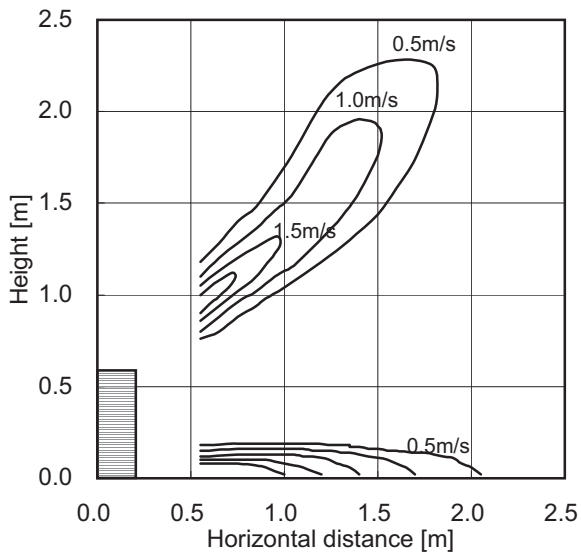
Heating - Lower



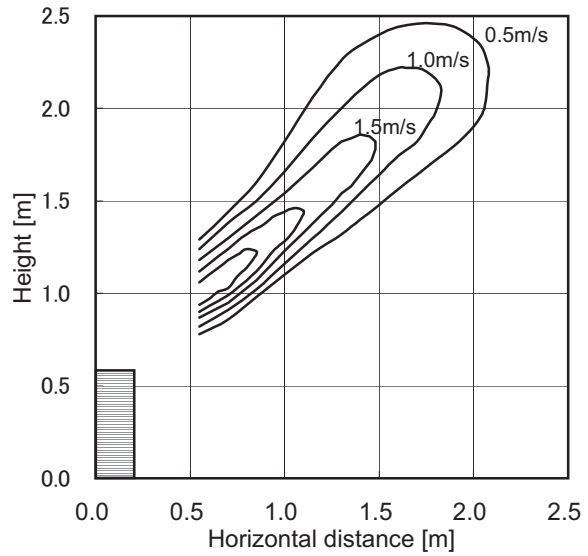


MML-AP0184NH-E

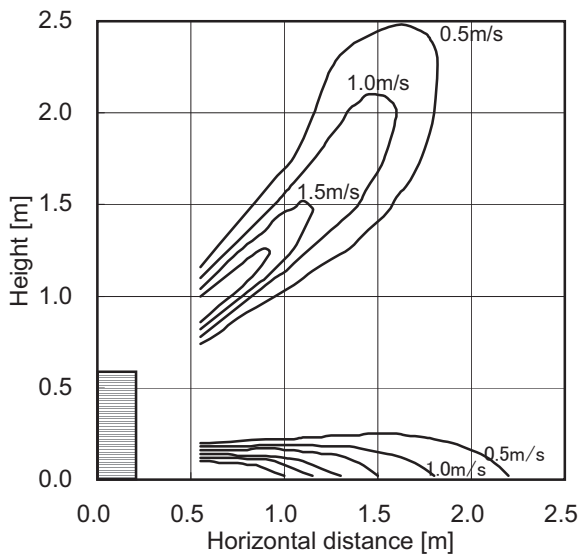
Cooling - Upper & Lower



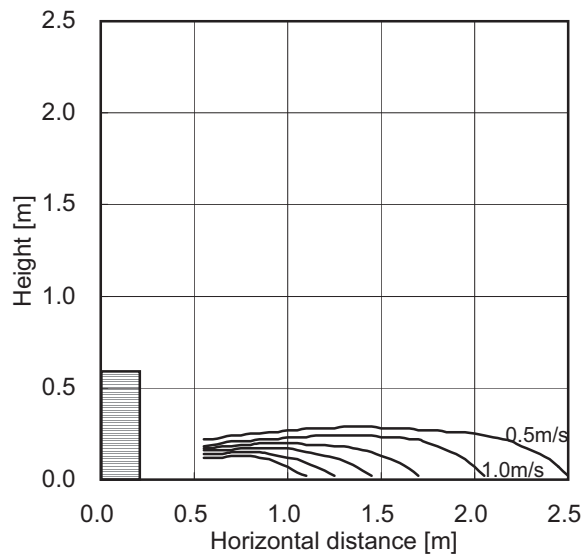
Cooling - Upper



Heating - Upper & Lower



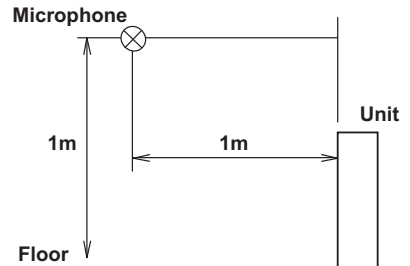
Heating - Lower





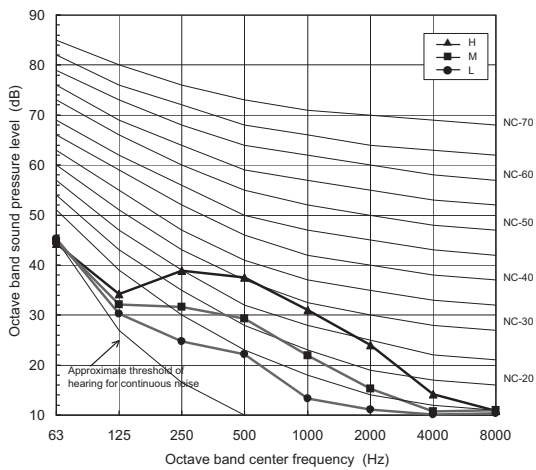
8. Sound Characteristics (NC-Curve)

Console Type



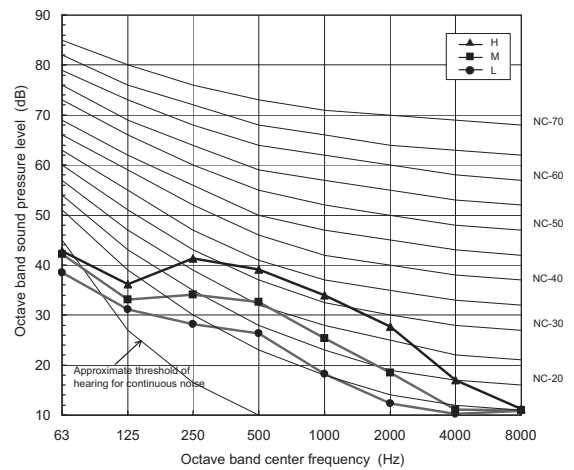
MML-AP0074NH-E/AP0094NH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	38	32	26



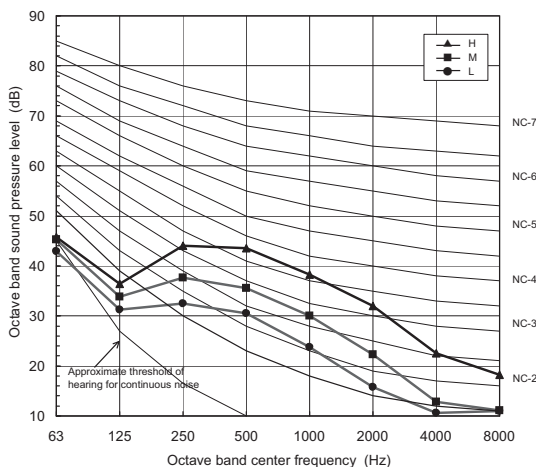
MML-AP0124NH-E

Fan tap	H	M	L
Sound pressure level (dB(A))	40	34	29



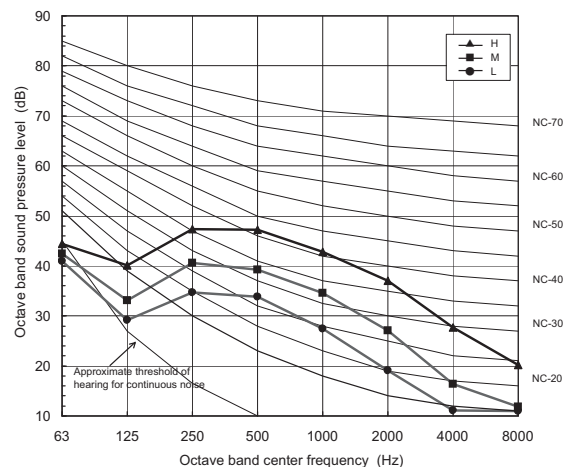
MML-AP0154NH-E

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			<ul style="list-style-type: none"> • Start / Stop • Changing mode • Temperature setting • Air flow changing (5 steps) • Louver setting • Clock • Timer function <ul style="list-style-type: none"> - 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.



11-2-15. 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			1 phase 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	m ³ /h	500	800	950
		High	m ³ /h	500	800	950
		Low	m ³ /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	m ³ /h	330	480	640
		Upper limit	m ³ /h	600	960	1140
	Sound pressure		Extra High	dB	37.5	41.0
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.

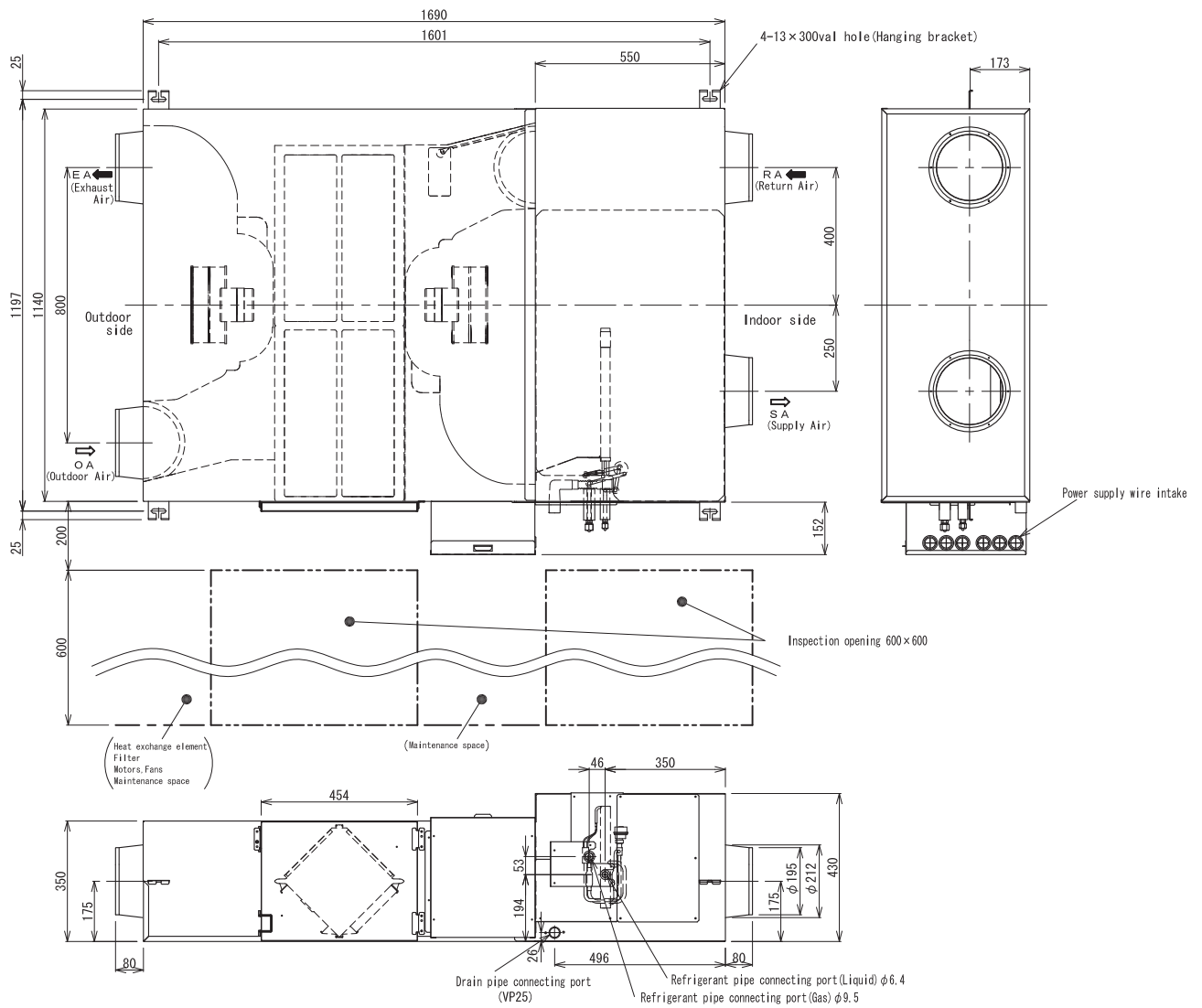
When calculating the capacity code as indoor units, please use as below.

MMD-VN502HEXE: 1HP, MMD-VN802HEXE: 1.7HP,

MMD-VN1002HEXE: 2.0HP

1. Dimension

MMD-VN502HEXE

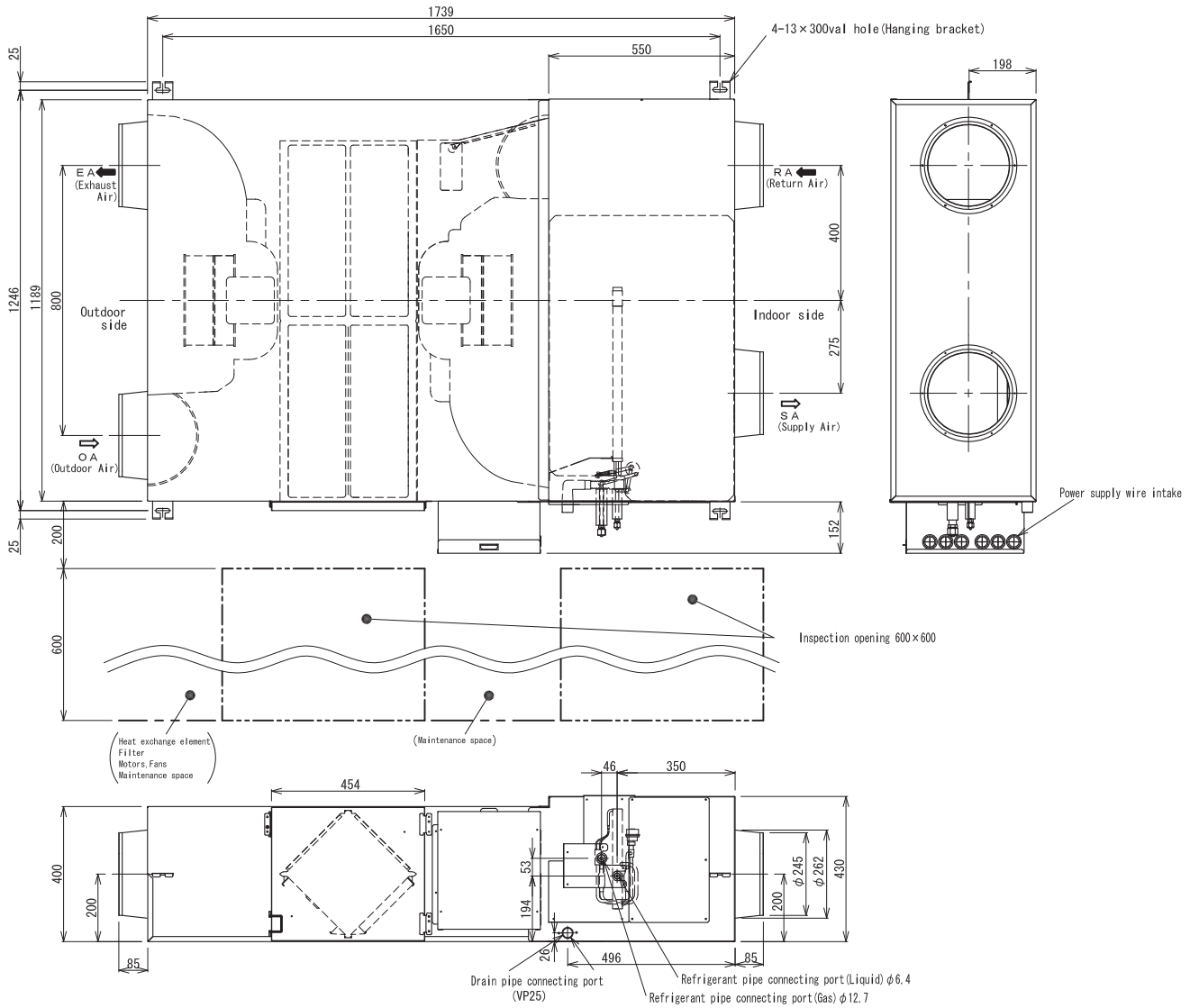


■ Attention

1. Duct size (Nominal diameter): ϕ 200
2. The above dimensions do not include the thickness of the insulation material on the unit body.



MMD-VN802HEXE



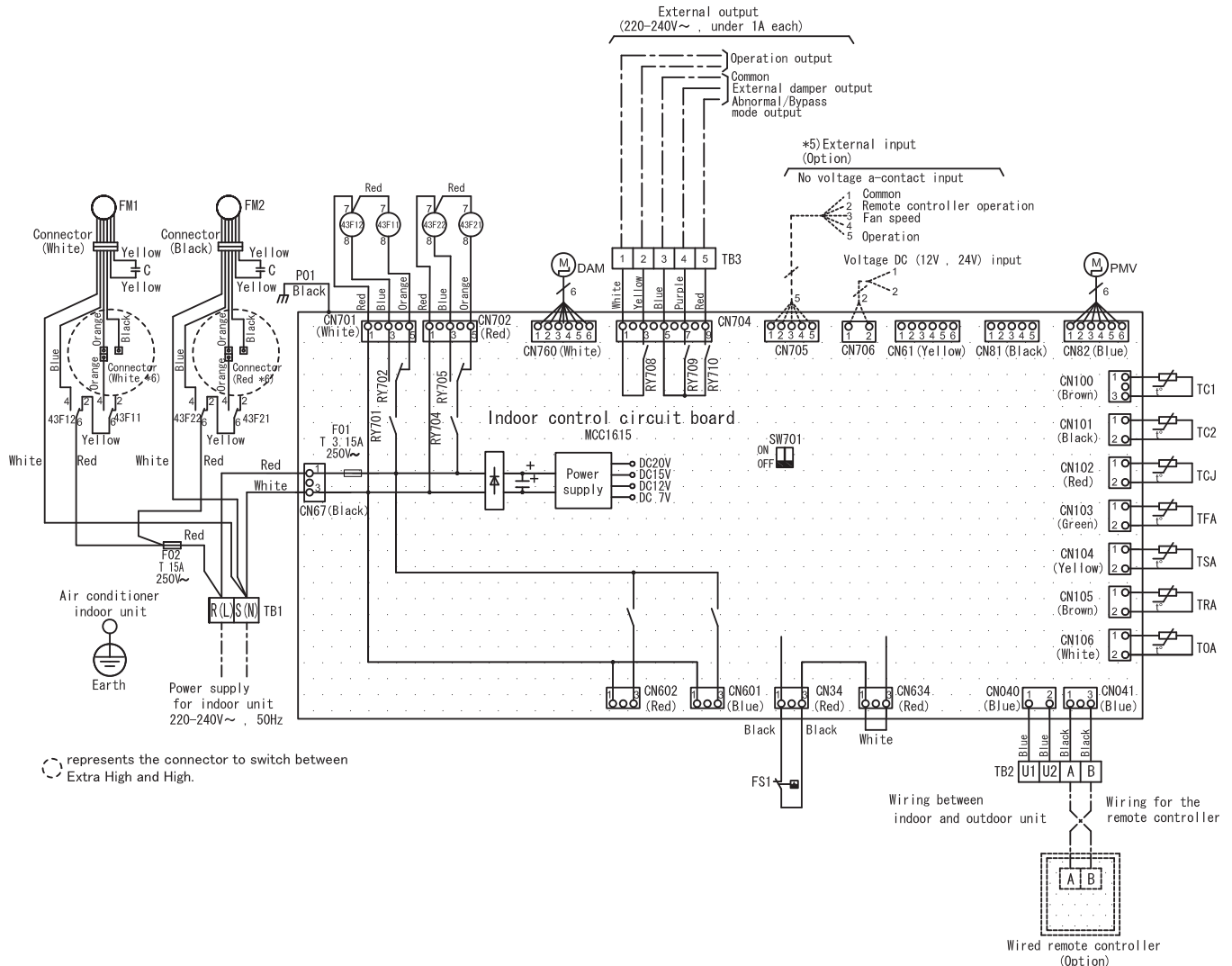
■ Attention

1. Duct size (Nominal diameter): ϕ 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.

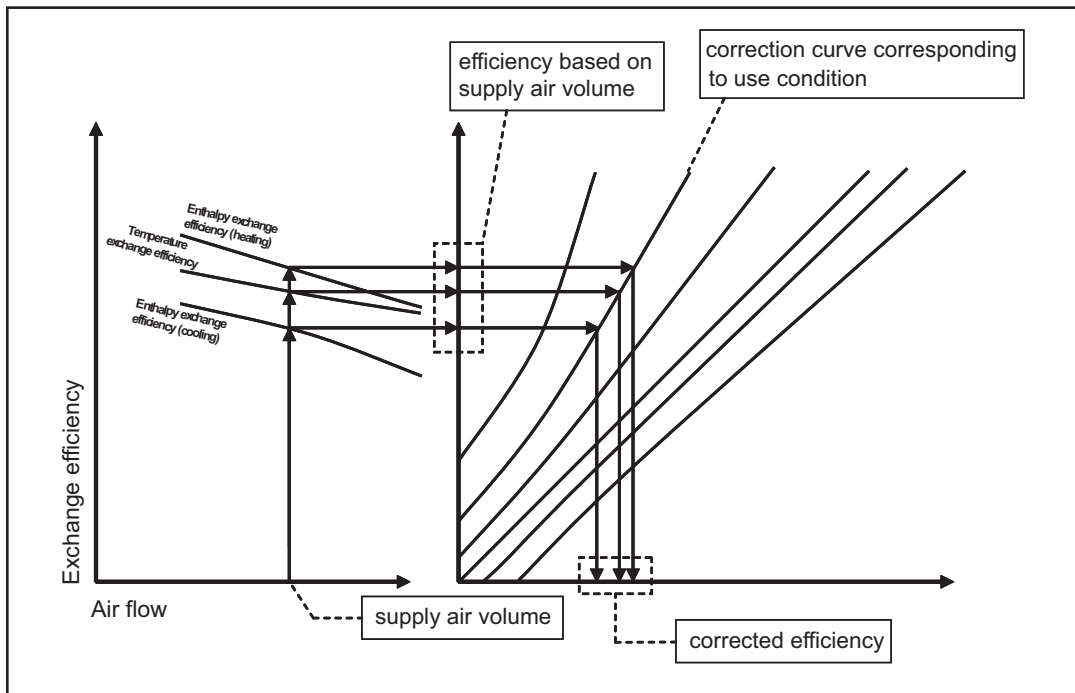
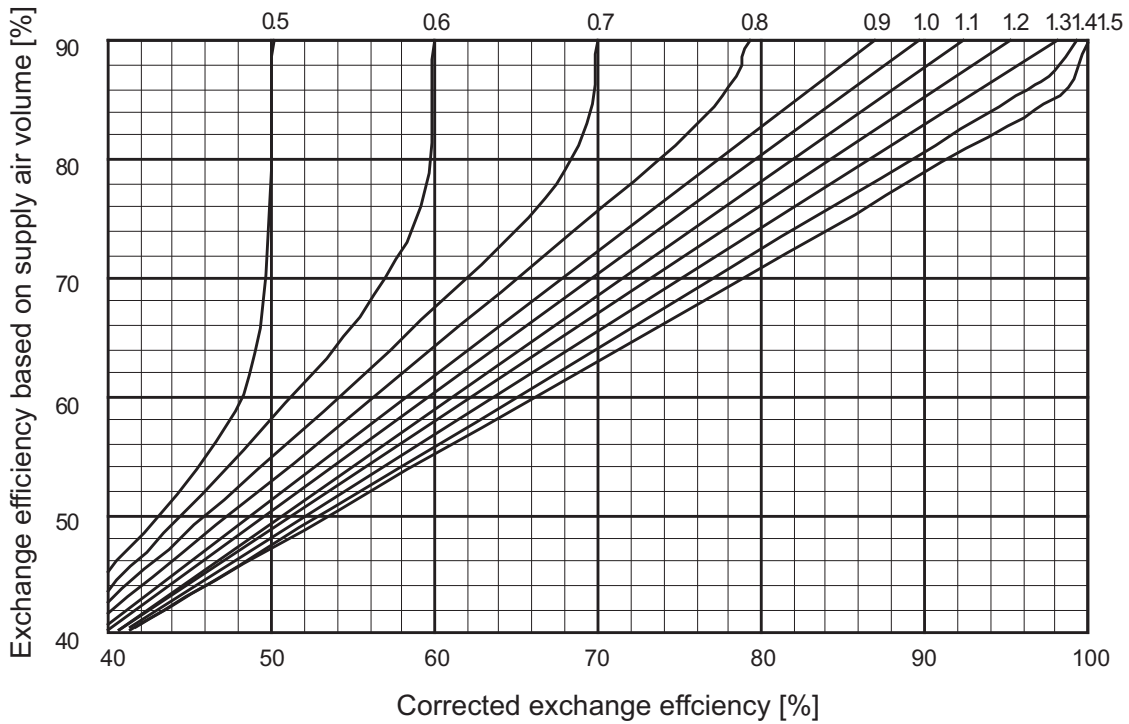


4. Exchange Efficiency Correction

Exchange efficiency correction when supply air volume and exhaust air volume are different

Exchange efficiency correction curve

$$\text{Exhaust to supply ratio} = \text{Exhaust air volume} / \text{Supply air volume}$$





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

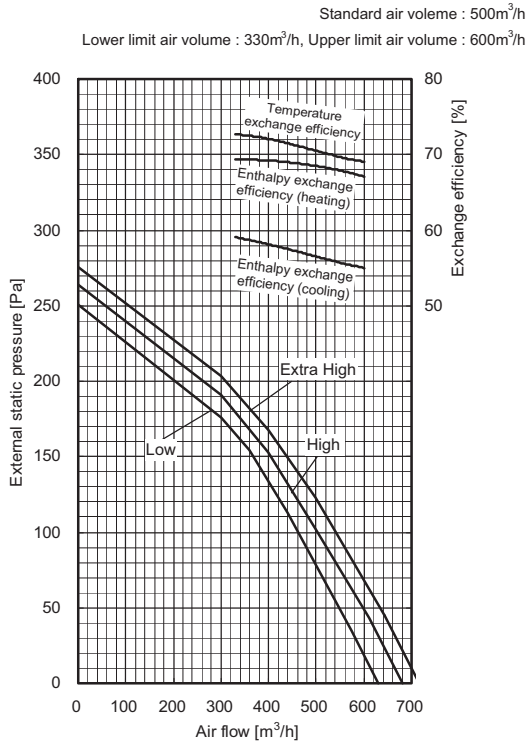
Class	DX-coil capacity [kW]	Outdoor temp. [°CWB]	DX-coil inlet temp. [°CDB]				
			16.0	18.0	20.0	22.0	24.0
			SHC	SHC	SHC	SHC	SHC
502	3.2	-15.0	1.9	1.8	1.8	1.8	1.7
		-13.0	2.0	2.0	2.0	1.9	1.9
		-11.0	2.2	2.1	2.1	2.0	2.0
		-10.0	2.2	2.2	2.2	2.1	2.1
		-8.0	2.4	2.3	2.3	2.2	2.2
		-6.0	2.5	2.4	2.4	2.3	2.3
		-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		



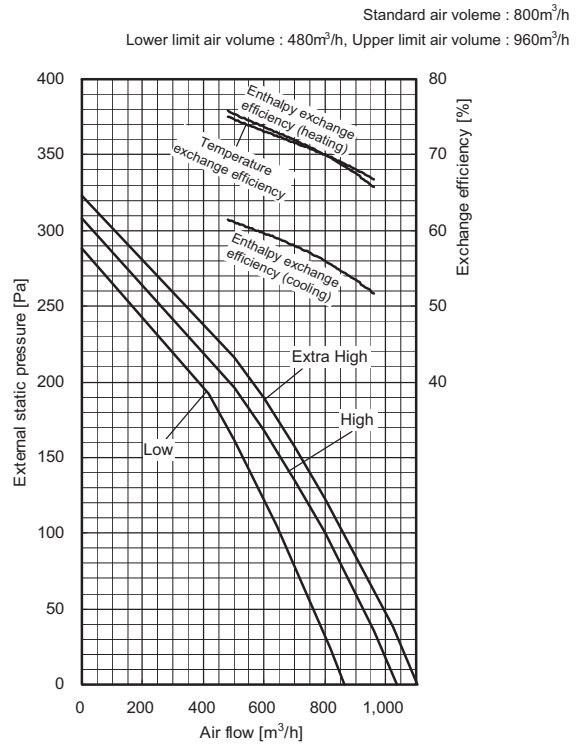
6. Fan Characteristics

----- 230V, 50Hz

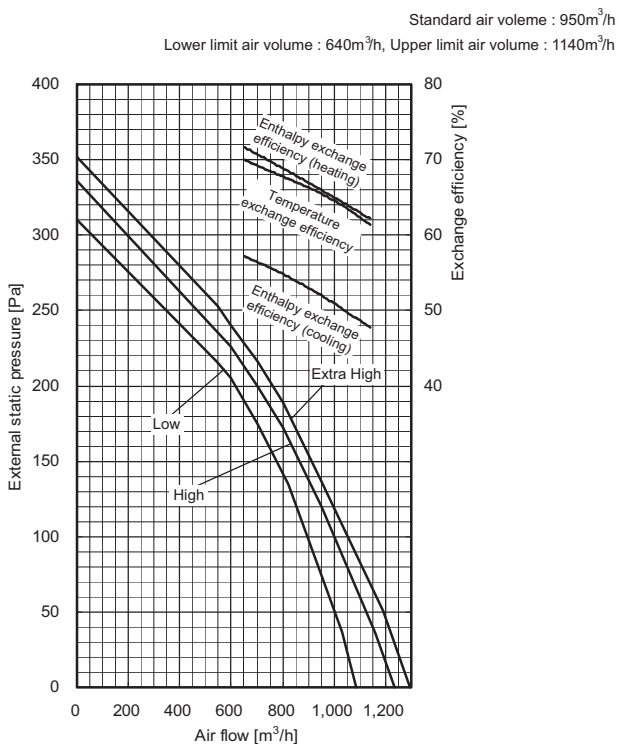
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MMD-VN802HEXE



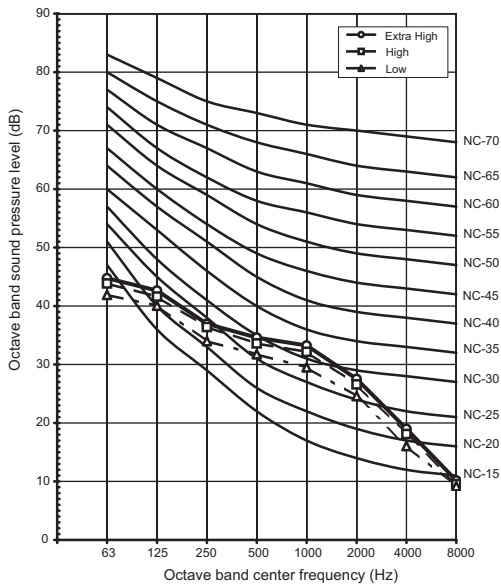
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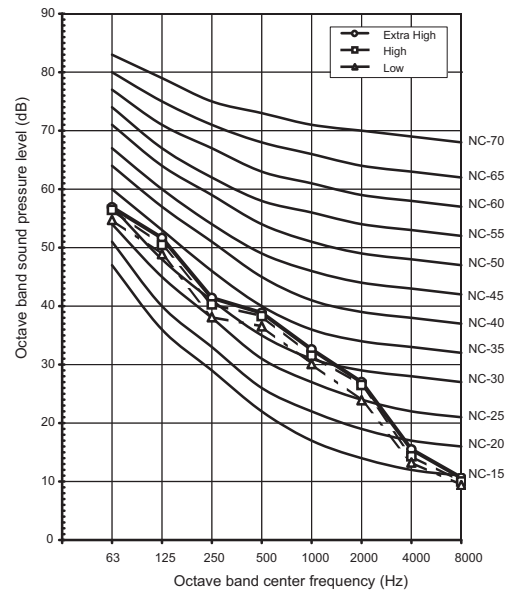


Model name	Power supply (phase/Hz/V)	Under from body 1.5m	Sound pressure level (dB)		
			Extra High	High	Low
MMD-VN502HEXE	1 phase / 50Hz / 220V-240V		37.5	36.5	34.5
MMD-VN802HEXE			41.0	40.0	38.0
MMD-VN1002HEXE			43.0	42.0	40.0

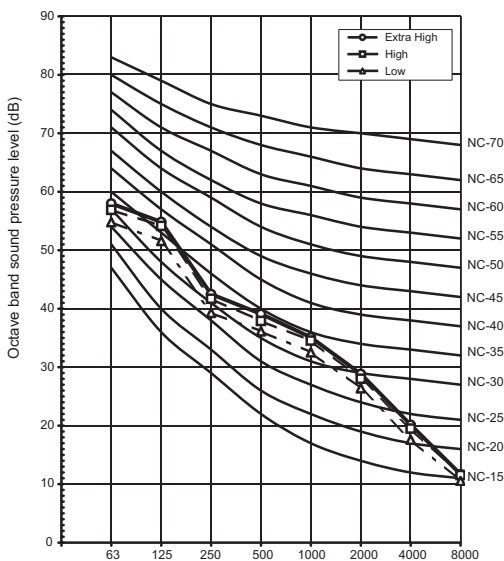
MMD-VN502HEXE



MMD-VN802HEXE



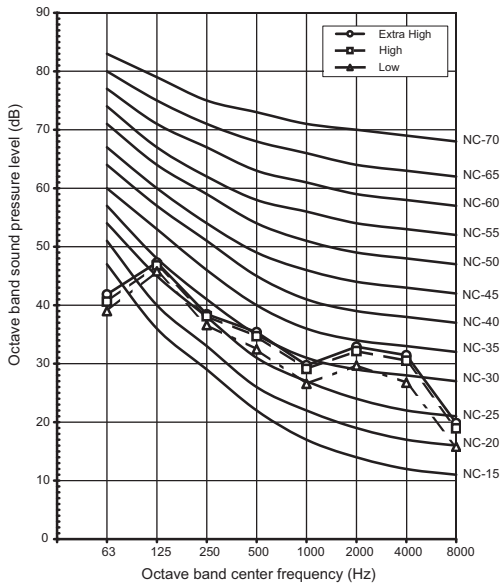
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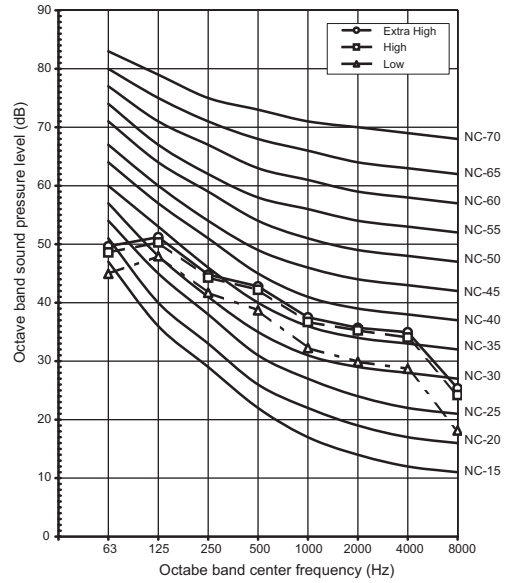


Model name	Power supply (phase/Hz/V)		Sound pressure level (dB)		
			Extra High	High	Low
MMD-VN502HEXE	1 phase / 50Hz / 220V-240V		39.5	39.0	37.0
MMD-VN802HEXE			44.5	44.5	40.5
MMD-VN1002HEXE			47.0	47.0	45.0

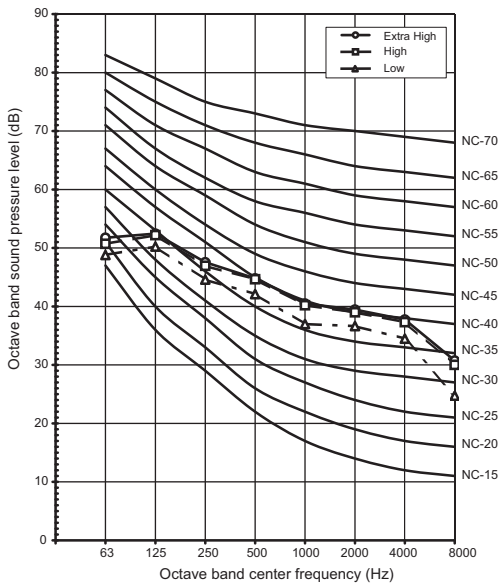
MMD-VN502HEXE



MMD-VN802HEXE



MMD-VN1002HEXE

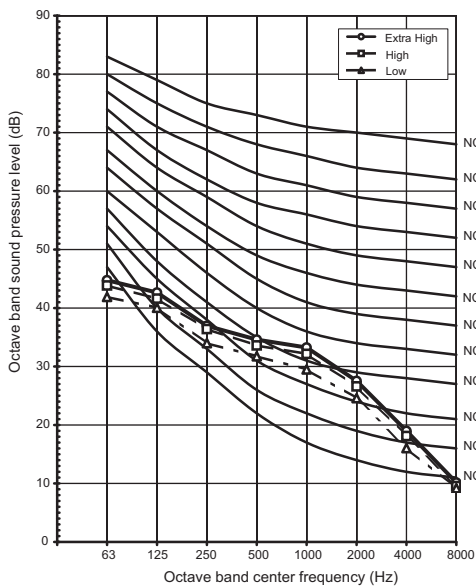




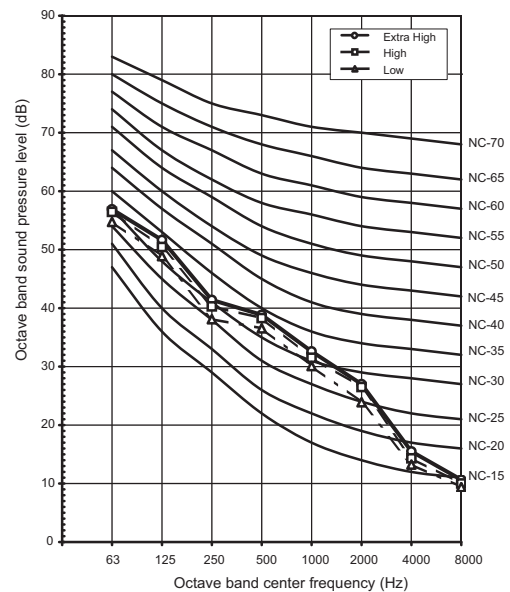
7. Sound Characteristics (NC Curve)

Model name	Power supply (phase/Hz/V)	Under from body 1.5m	Sound pressure level (dB)		
			Extra High	High	Low
MMD-VN502HEXE	1 phase / 50Hz / 220V-240V		37.5	36.5	34.5
MMD-VN802HEXE			41.0	40.0	38.0
MMD-VN1002HEXE			43.0	42.0	40.0

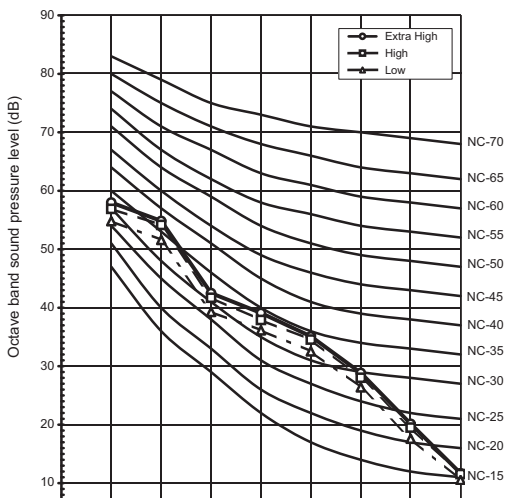
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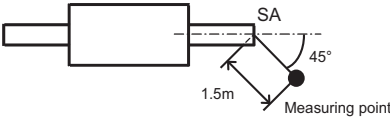
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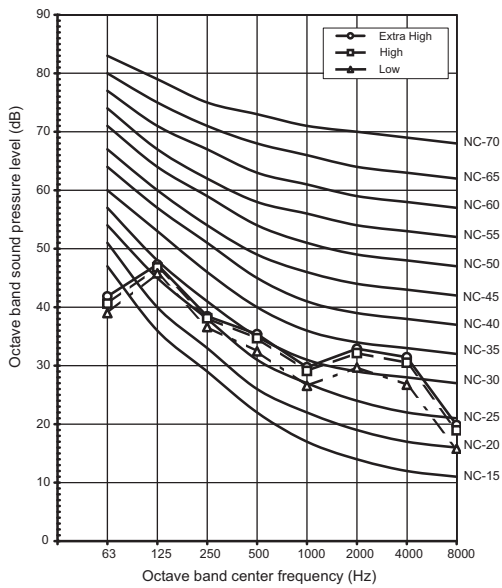
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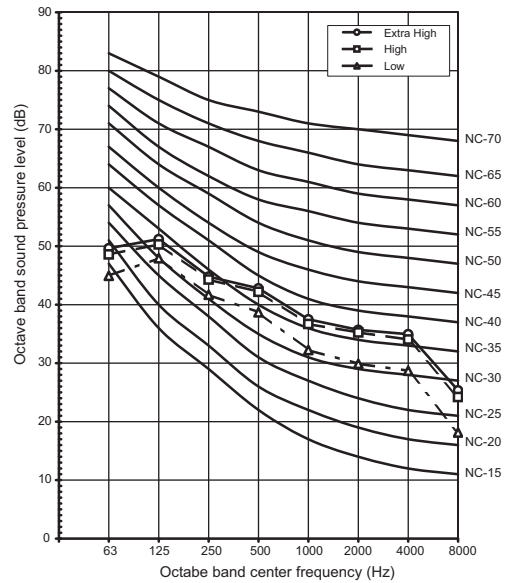


Model name	Power supply (phase/Hz/V)		Sound pressure level (dB)		
			Extra High	High	Low
MMD-VN502HEXE	1 phase / 50Hz / 220V-240V		39.5	39.0	37.0
MMD-VN802HEXE			44.5	44.5	40.5
MMD-VN1002HEXE			47.0	47.0	45.0

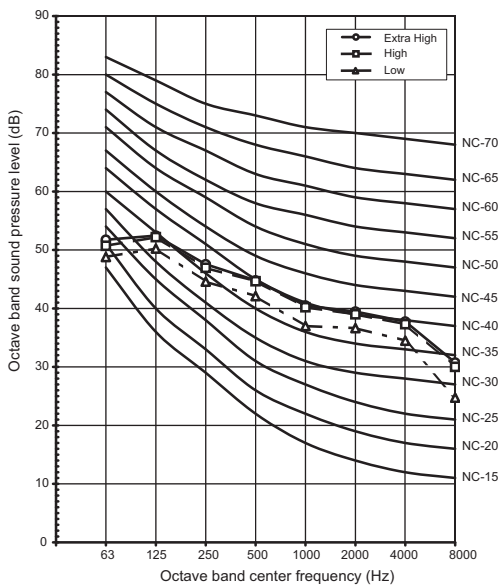
MMD-VN502HEXE



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)

11-2-16. Air to Air Heat Exchanger with DX-coil, Humidifier Type

Air to Air Heat exchanger with DX-coil, Humidifier Type

(European market only)

MMD-VNK502HEXE
MMD-VNK802HEXE
MMD-VNK1002HEXE



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	m ³ /h	500	800	950
		High	m ³ /h	500	800	950
		Low	m ³ /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	m ³ /h	330	480	640
		Upper limit	m ³ /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

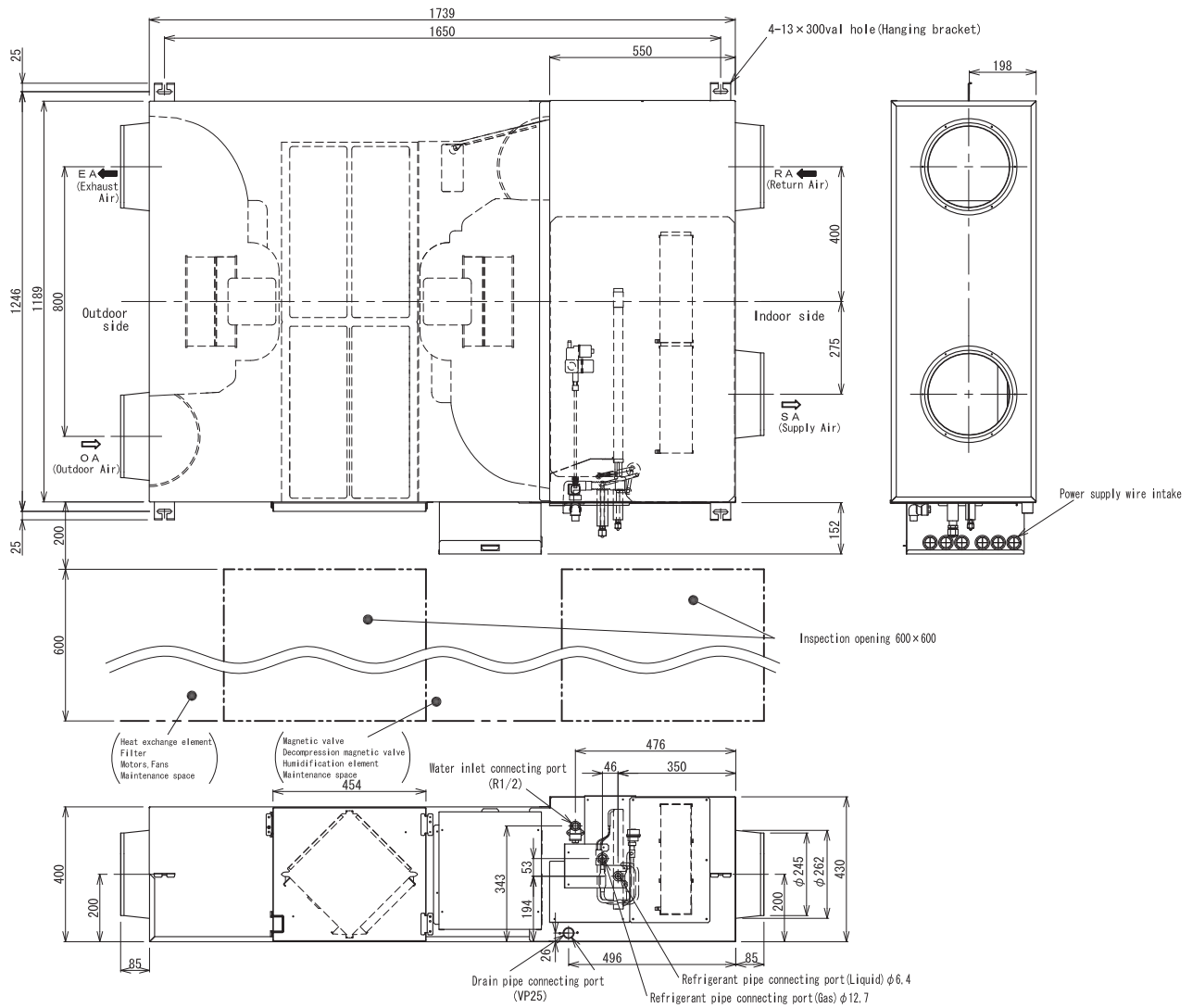
(*2) Water with a hardness of no more than 100 mg/liter must be used as the water which is supplied to the humidifier.

A water softener must be installed if the water to be supplied has a hardness of more than 100 mg/liter.

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MMD-VNK802HEXE

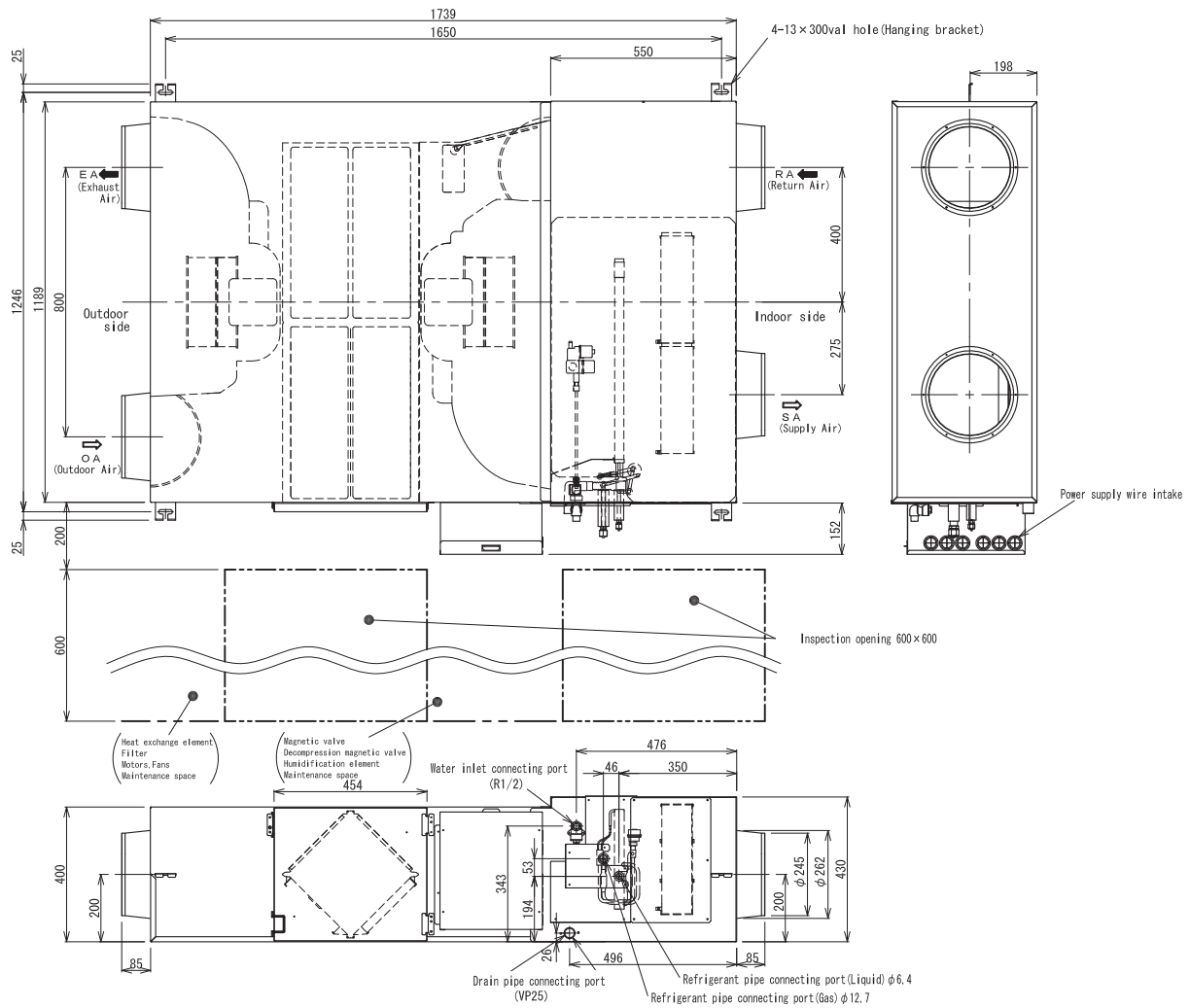


■ Attention

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**

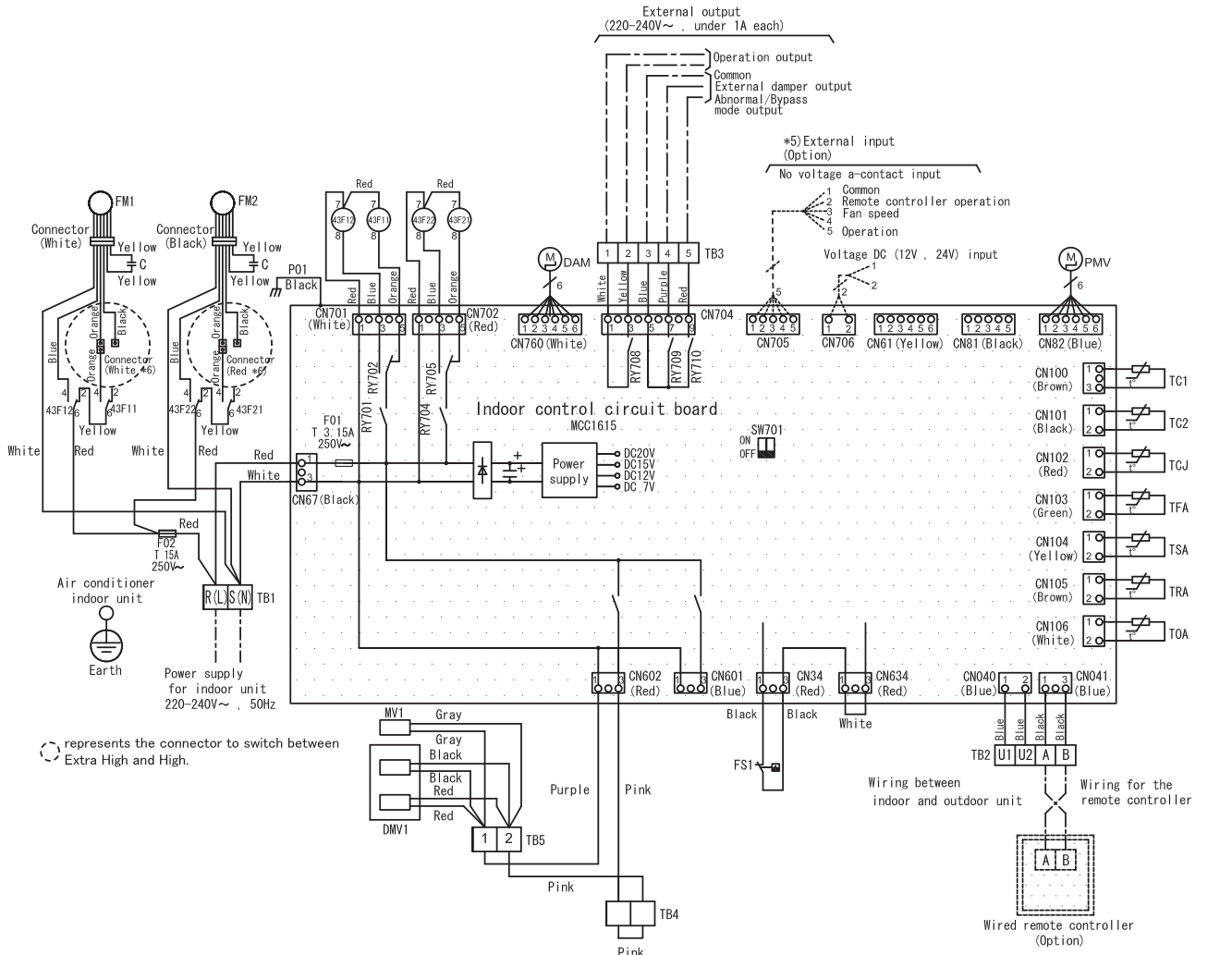
1. Duct size (Nominal diameter): $\phi 250$
2. The above dimensions do not include the thickness of the insulation material on the unit body.

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3. Wiring Diagram

MMD-VNK502HEXE, MMD-VNK802HEXE, MMD-VNK1002HEXE



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
TB1	Terminal block (Power source)
TB2	Terminal block (Communication)

Code	Parts name
TB3	Terminal block (External output)
TB4	Terminal block (Humidistat)
TB5	Terminal block (Magnetic value)
TS1	Float switch
MV1	Magnetic value
DMV1	Decompression magnetic value
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.

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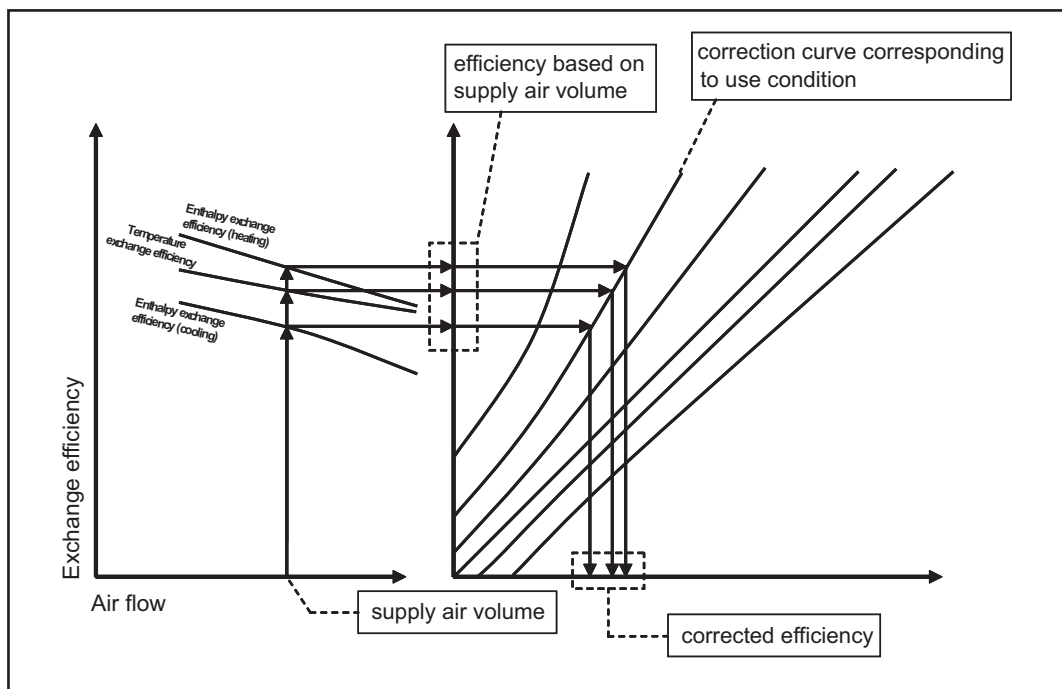
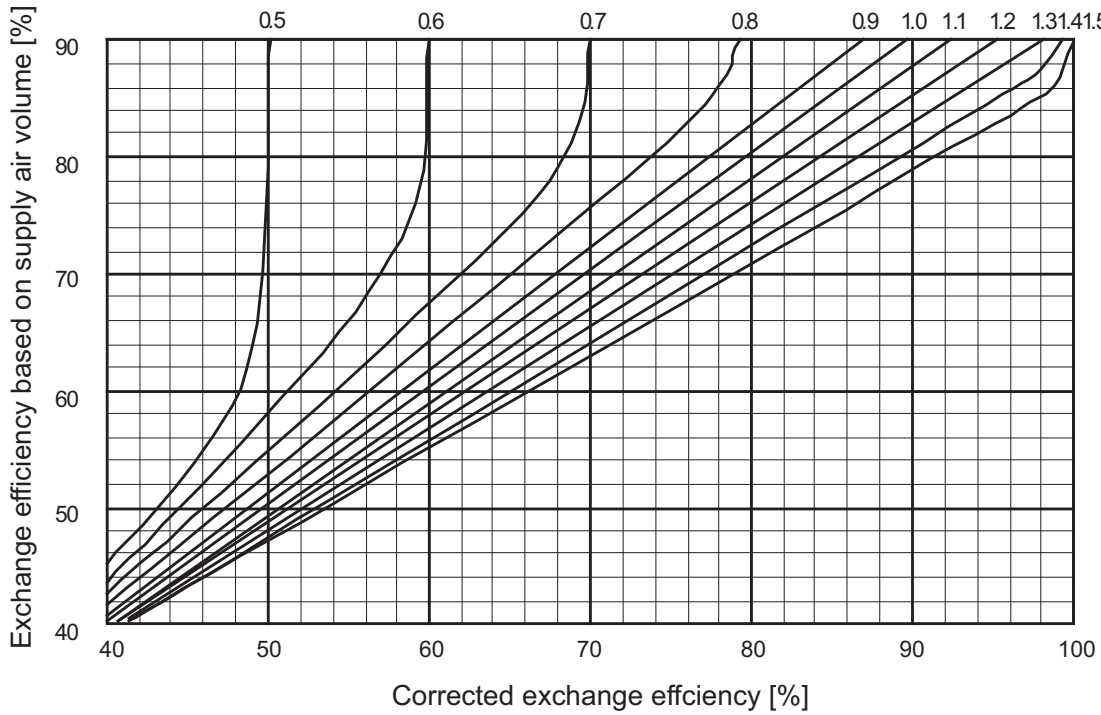


4. Exchange Efficiency Correction

Exchange efficiency correction when supply air volume and exhaust air volume are different

Exchange efficiency correction curve

$$\text{Exhaust to supply ratio} = \text{Exhaust air volume} / \text{Supply air volume}$$



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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		
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		

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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		

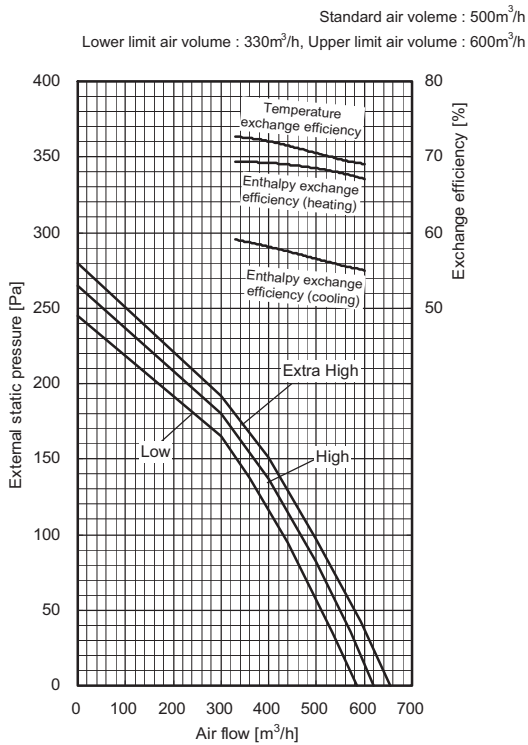
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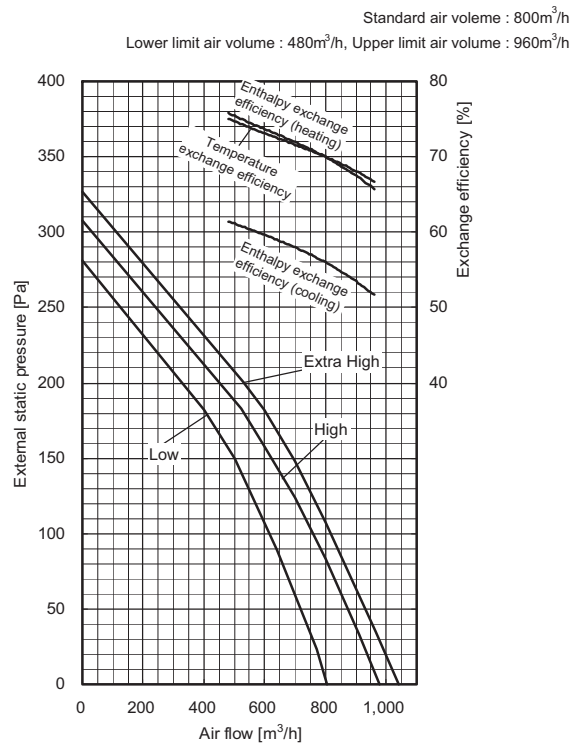
6. Fan Characteristics

----- 230V, 50Hz

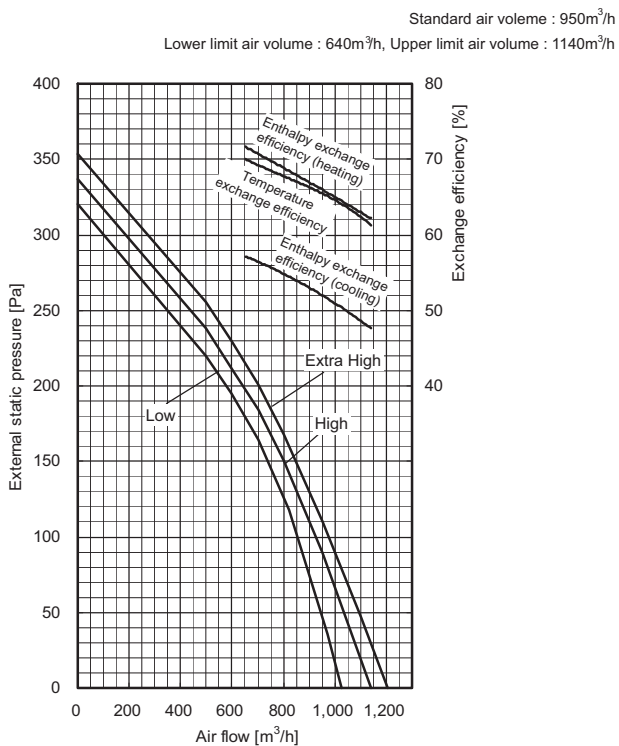
MMD-VNK502HEXE



MMD-VNK802HEXE



MMD-VNK1002HEXE



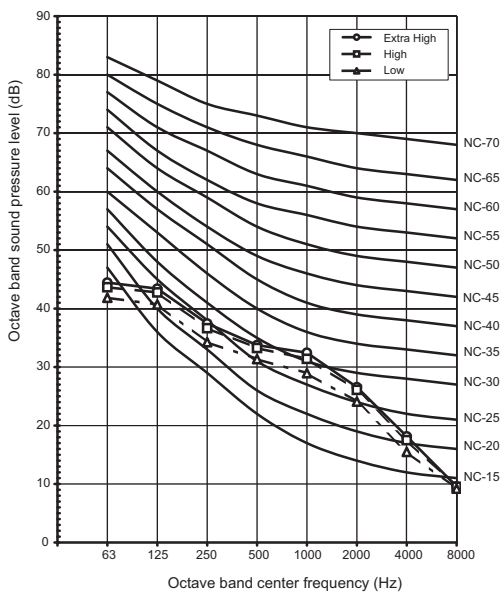
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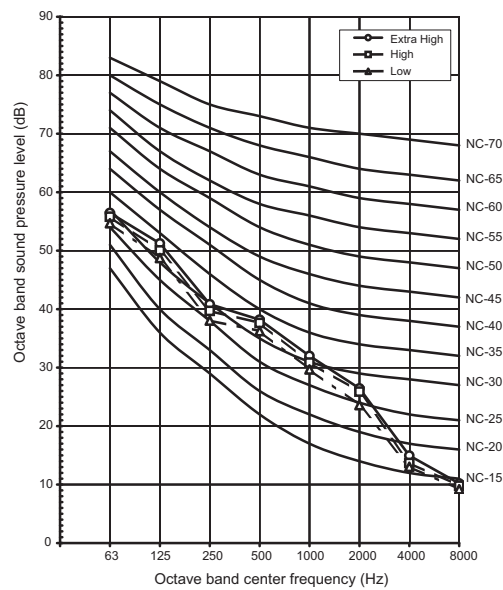
7. Sound Characteristics (NC Curve)

Model name	Power supply (phase/Hz/V)	Under from body 1.5m	Sound pressure level (dB)		
			Extra High	High	Low
MMD-VNK502HEXE	1 phase / 50Hz / 220V-240V		36.5	35.5	33.5
MMD-VNK802HEXE			40.0	39.0	38.0
MMD-VNK1002HEXE			42.0	41.0	39.0

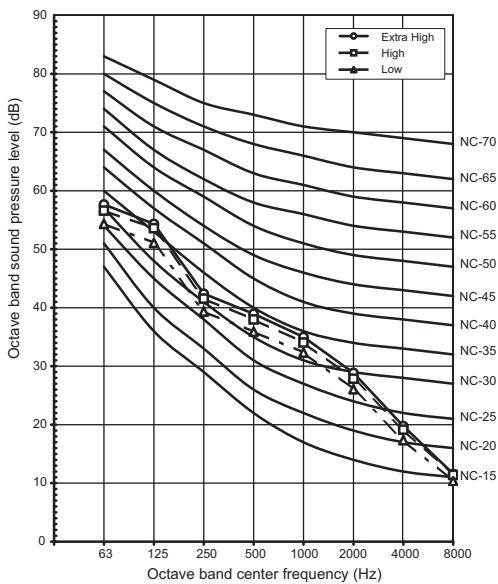
MMD-VNK502HEXE



MMD-VNK802HEXE



MMD-VNK1002HEXE

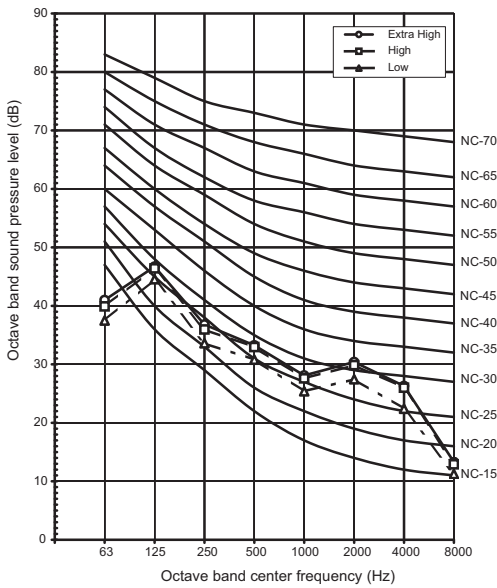


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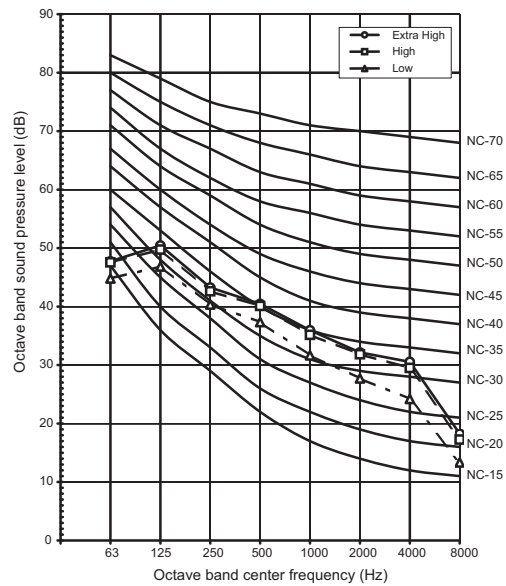


Model name	Power supply (phase/Hz/V)		Sound pressure level (dB)		
			Extra High	High	Low
MMD-VNK502HEXE	1 phase / 50Hz / 220V-240V		37.0	37.0	34.5
MMD-VNK802HEXE			42.5	42.0	38.5
MMD-VNK1002HEXE			45.0	45.0	42.5

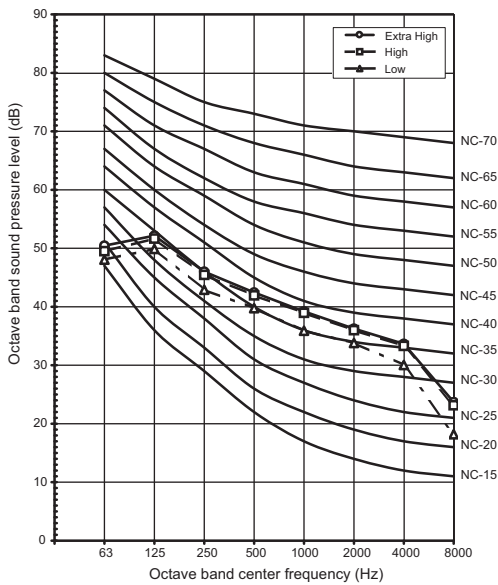
MMD-VNK502HEXE



MMD-VNK802HEXE



MMD-VNK1002HEXE



European market only



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)

SHRM-i Engineering Data Book (FT8-E model)

< Full set version >

Oct, 2012 First Edition

TOSHIBA CARRIER CORPORATION