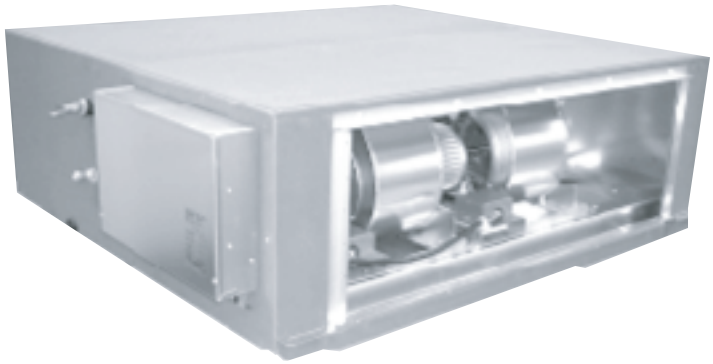
Outside Air Unit Type

MMD-AP0481HF2UL
MMD-AP0721HF2UL
MMD-AP0961HF2UL

Contents

1. System summary

Outside Air Unit Type



- **Connectable outdoor unit**
  Outdoor unit of SMMS-e series.

- **Corresponding system**
  Corresponds to a system in which there are the outside air units and the indoor air conditioners.

- **Definition**
  The outside air unit means an air controller for taken-in outside air.
  Intake of the outside air often influences on the system so that the normal control of the air conditioner becomes difficult or gives a large load upon air controller and cooling performance.
  Therefore it is frequently adopted to handle the outside air to a certain condition before the outside air will enter in the main air conditioner.
  This handling device is called an outside air unit.

NOTE:
The outside air unit is an air conditioner provided to handle the outside air load and is not to control the room temperature. For correspondence to the load of the indoor air controller, set an air conditioner separately.

2. Specifications

Model name		MMD-	AP0481HF2UL	AP0721HF2UL	AP0961HF2UL
Cooling capacity	(Note1)	kBtu/h	48.0	72.0	96.0
Heating capacity	(Note1)	kBtu/h	30.0	47.0	59.0
Electrical characteristics	Power supply		230 V (208/230 V) 1phase		
	Running current	A	1.58/1.56	3.00/2.88	3.32/3.17
	Power consumption	kW	0.31/0.34	0.56/0.58	0.64/0.66
	Starting current	A	3.90/3.20	7.70/6.30	8.50/6.90
Outer dimension	Height	In	19.5"		
	Width	In	35.4"	55"	
	Depth	In	49.8"		
Main unit weight		lbs	212	349	
Heat exchanger			Finned tube		
Soundproof / Heat-insulating material			Non-flammable insulation		
Fan			Centrifugal fan		
Standard air flow		cfm	636	989	1237
Motor		W	AC 160	AC 160 x 2	
External static pressure (factory default)	208 V / 230 V	In WG	0.55/0.86	0.74/1.00	0.41/0.85
External static pressure (factory default)	208 V (H / M / L)	In WG	0.75/0.55/0.16	0.84/0.74/0.24	0.67/0.41 (H/L)
	230 V (H / M / L)	In WG	1.06/0.86/0.50	1.08/1.00/0.65	1.01/0.85 (H/L)
Air flow limit	Lower limit	cfm	445	693	866
	Upper limit	cfm	700	1088	1360
Air filter			Field supply		
Controller			Wired remote controller		
Connecting pipe	Gas pipe	In	5/8"	7/8"	
	Liquid pipe	In	3/8"	1/2"	
	Drain pipe	In	VP25 (Polyvinyl chloride tube: External Dia.1-1/4 internal Dia.1)		
Sound pressure level	208 V (H / M / L)	dB(A)	44/43/36	47/46/40	47/45 (H/L)
	230 V (H / M / L)	dB(A)	46/45/42	48/47/46	50/49 (H/L)
Operation range for SMMS-e	Cooling (Note 2)	°F	41 - 115		
	Heating (Note 3)	°F	23 - 109		

* The setting temperature is 60 - 80 °F
* Height difference between outside air units must be within 1.97" (0.5 m).

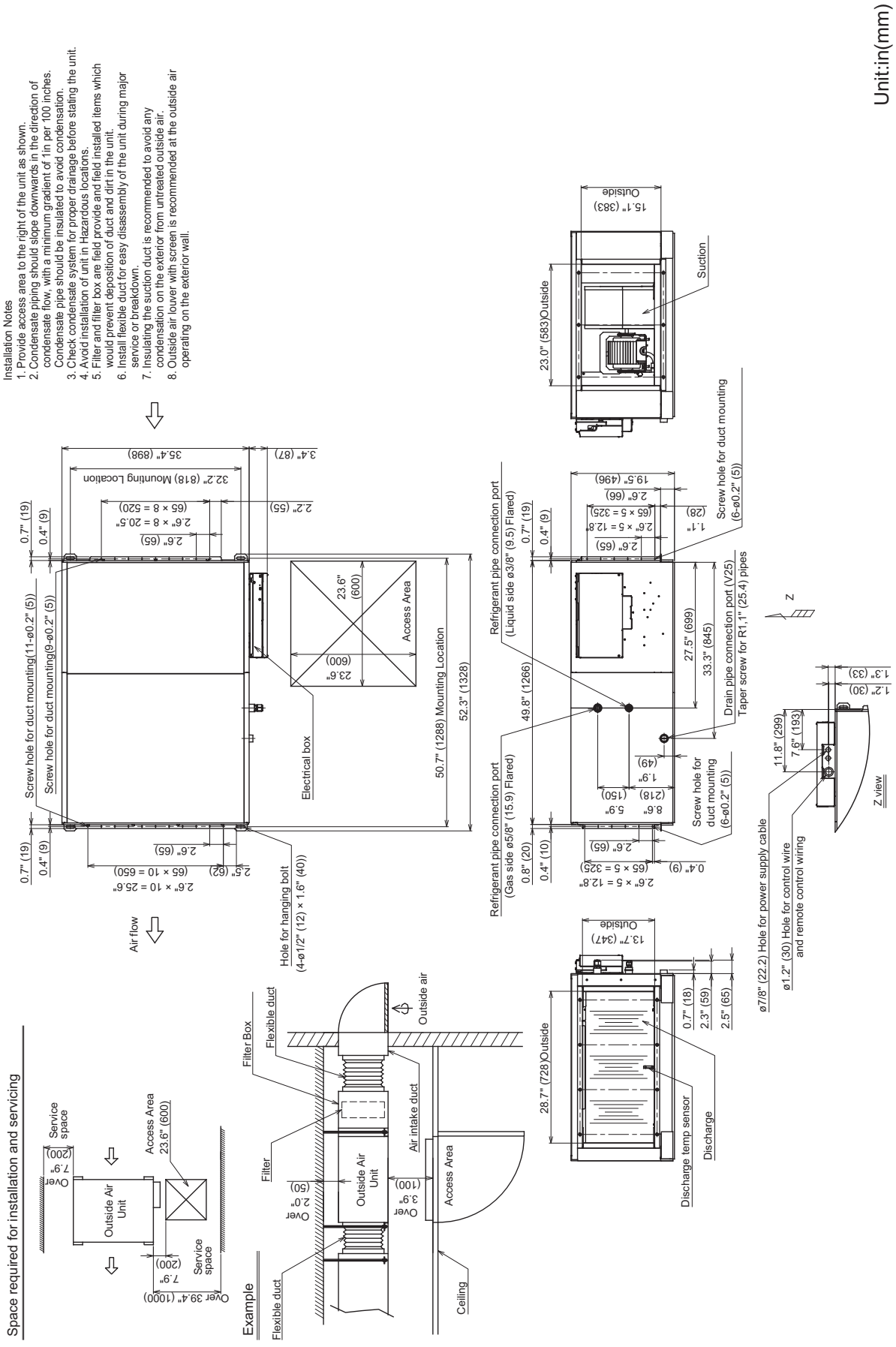
Note 1: Rated conditions Cooling: Outdoor air temperature 91 °F DB/82 °F WB setting temperature 64 °F
Heating: Outdoor air temperature 32 °FDB/26 °F WB setting temperature 77 °F

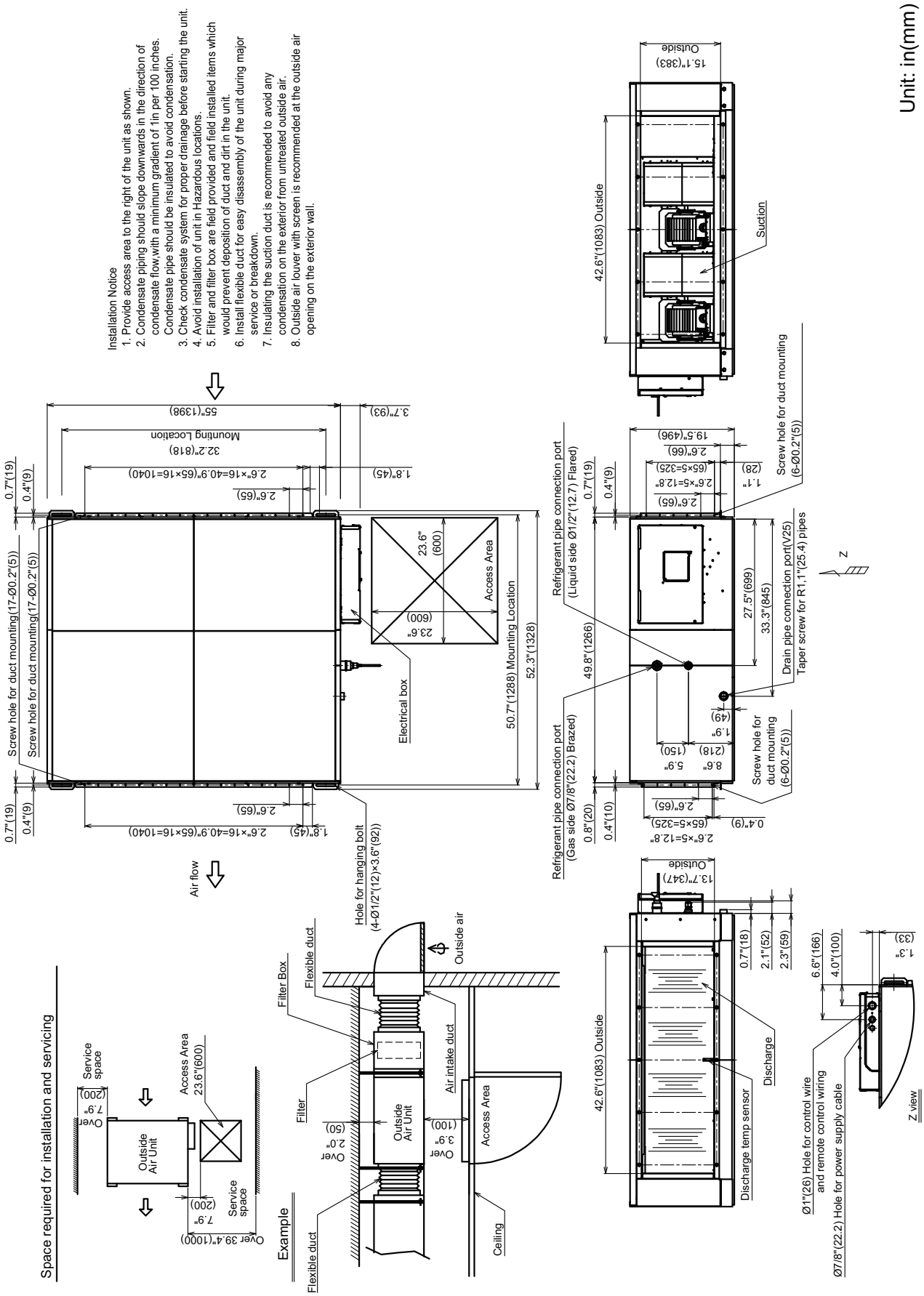
Note 2: * When supply air temperature is “setting temperature + 5.4 °F” or less, Outside air unit operates as FAN mode.

Note 3: * When supply air temperature is “setting temperature - 5.4 °F” or over, Outside air unit operates as FAN mode.

3. Dimensions

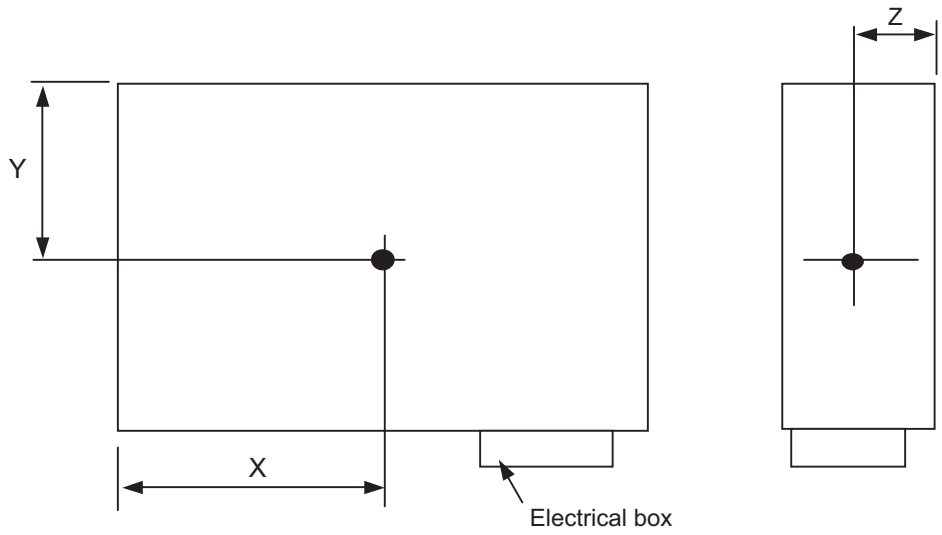
MMD-AP0481HF2UL



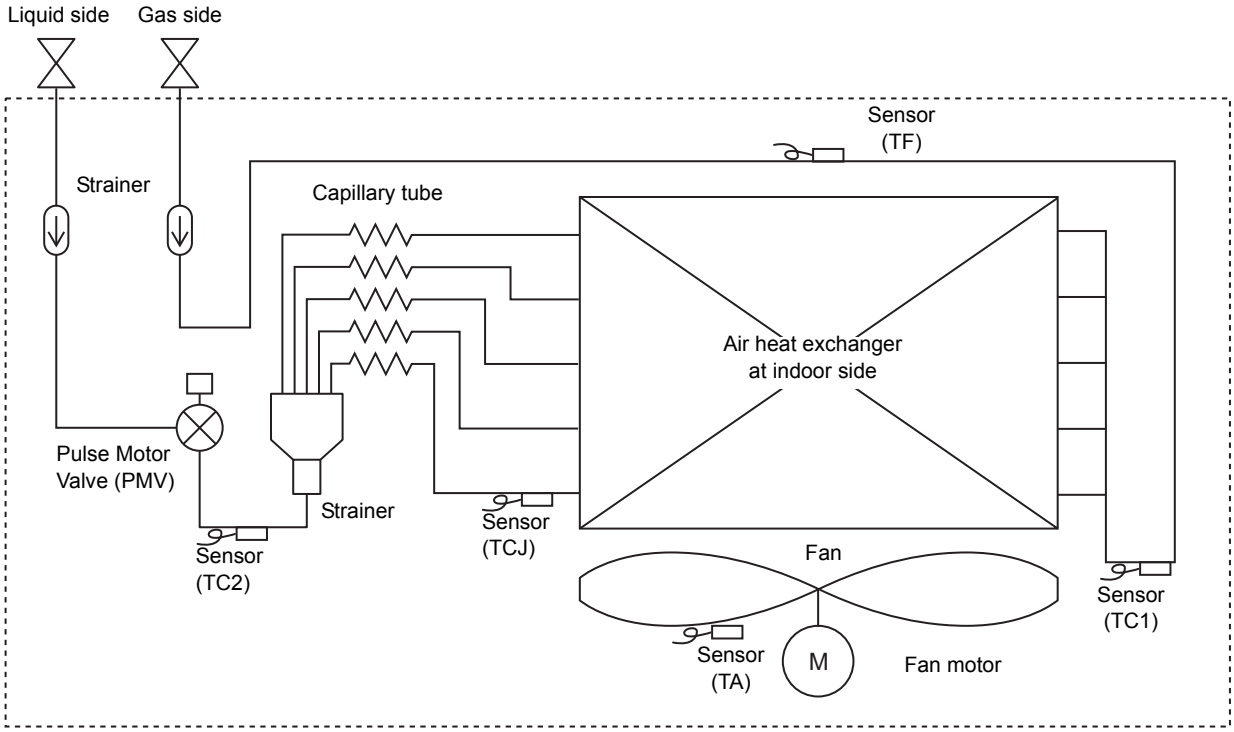

Unit: in(mm)
Installation Notice
1. Provide access area to the right of the unit as shown.
2. Condensate piping should slope downwards in the direction of condensate flow,with a minimum gradient of 1in per 100 inches. Condensate pipe should be insulated to avoid condensation.
3. Check condensate system for proper drainage before starting the unit.
4. Avoid installation of unit in Hazardous locations.
5. Filter and filter box are field provided and field installed items which would prevent deposition of duct and dirt in the unit.
6. Install flexible duct for easy disassembly of the unit during major service or breakdown.
7. Insulating the suction duct is recommended to avoid any condensation on the exterior from untreated outside air.
8. Outside air louver with screen is recommended at the outside air opening on the exterior wall.
Screw hole for duct mounting(17-Ø0.2"(5))
Mounting Location
Access Area
Electrical box
Hole for hanging bolt (4-Ø1/2"(12)×3.6"(92))
Air flow
Refrigerant pipe connection port (Liquid side Ø1/2"(12.7) Flared)
Refrigerant pipe connection port (Gas side Ø7/8"(22.2) Brazed)
Drain pipe connection port(V25)
Taper screw for R1,1"(25.4) pipes
Screw hole for duct mounting (6-Ø0.2"(5))
Suction
Discharge
Discharge temp sensor
Outside
Space required for installation and servicing
Service space
Outside Air Unit
Access Area
Example
Filter Box
Flexible duct
Filter
Air intake duct
Ceiling
Ø1"(26) Hole for control wire and remote control wiring
Ø7/8"(22.2) Hole for power supply cable
Z view

4. Center of gravity

Model name MMD-	X (In)	Y (In)	Z (In)	Weight (lb)
AP0481HF2UL	26.4	18.9	8.7	212
AP0721HF2UL	26.4	30.3	8.7	349
AP0961HF2UL				



5. Piping diagram



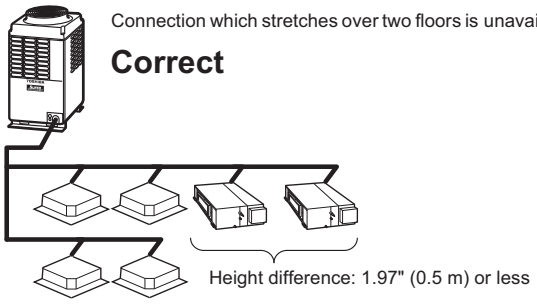
Functional part name		Functional outline
Pulse Motor Valve	PMV	(Connector CN082 (6P): Blue) 1) Controls super heat in cooling operation 2) Controls sub cool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. sensor	1. TA	(Connector CN104 (2P): White) 1) Detects indoor suction temperature
	2. TC1	(Connector CN100 (3P): Brown) 1) Controls PMV super heat in cooling operation
	3. TC2	(Connector CN101 (2P): Blue) 1) Controls PMV sub cool in heating operation
	4. TCJ	(Connector CN102 (2P): Yellow) 1) Controls PMV super heat in cooling operation
	5. TF	(Connector CN103 (2P): Green) 1) Detects indoor discharge temperature

6. System combination

6-1. Case of MMY model

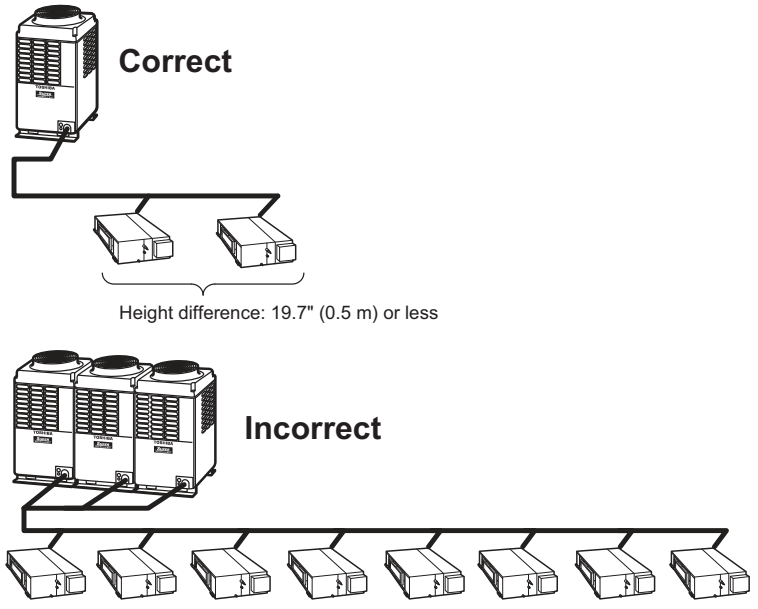
The Outside Air Unit is connectable to SMMS (Super Modular Multi system).
However this is not connectable to SHRM (Super Heat Recovery Multi system).
Keep the height difference between the Outside Air Units to 1.97" (0.5 m) or less.

■ Case of Outside Air connection with other indoor units



■ Case of All Outside Air connection to SMMS-e

• System that connected to Outside Air Unit only can be used with only single Outdoor unit on one line of the multi system. The combination of indoor units is only available specified in following Table 2.



■ The combination of Indoor units

1. The capacity code of Indoor unit is decided for each capacity type.

Indoor unit model name MMD-	AP0481HF2UL	AP0721HF2UL	AP0961HF2UL
Indoor unit capacity type	048	072	096
Indoor unit capacity code	48	72	96

2. Combination of Indoor units is decided for Outdoor unit capacity type. It allows only the combinations of Indoor units below.

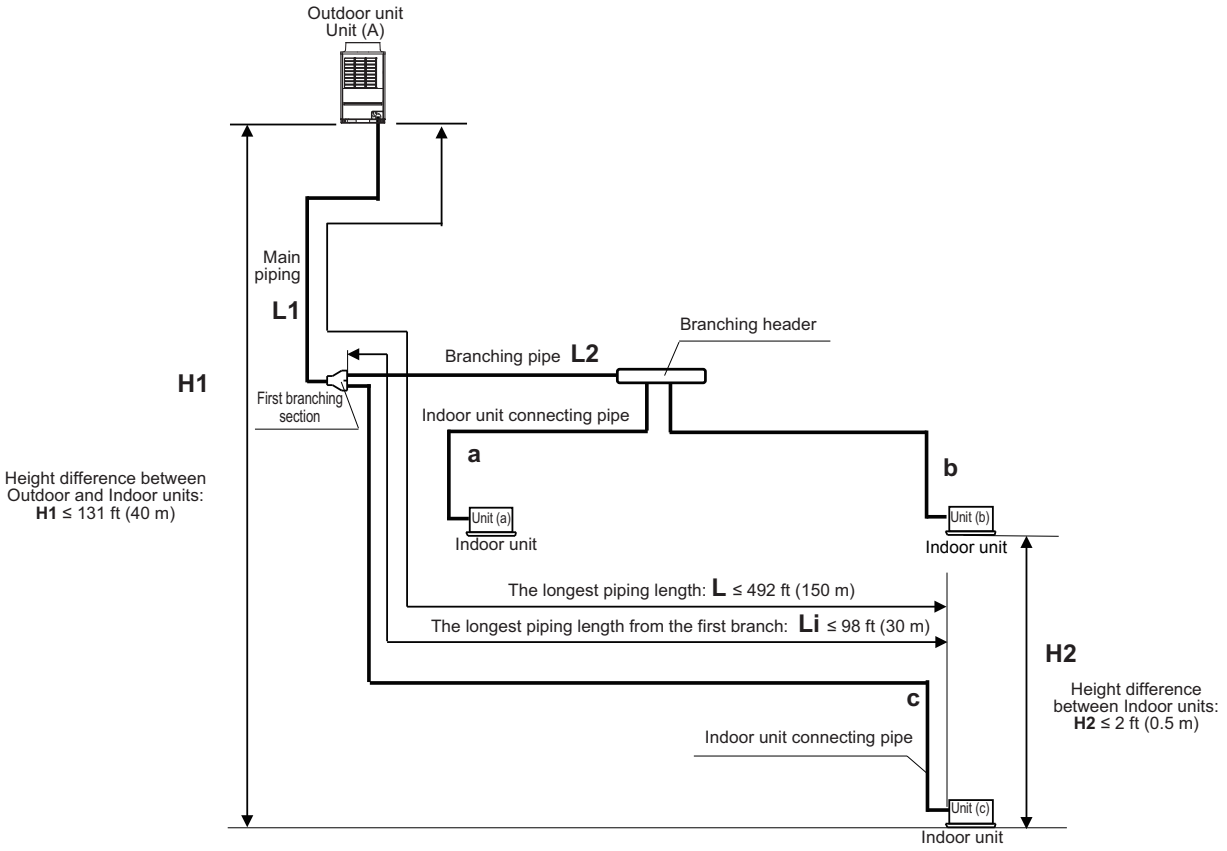
Outdoor unit capacity type	Outdoor unit capacity code	Combination of Indoor unit capacity type		
		Number of Indoor units		
		1	2	3
072type	72	072	-	-
096type	96	096	048 + 048	-
120type	120	-	072 + 048	-
144type	144	-	072 + 072	048 + 048 + 048
		-	096 + 048	-
168type	168	-	096 + 072	072 + 048 + 048

◆ Please refer to “Outside Air Unit’s Installation Manual” except the above contents.

■ Allowable length/height difference of refrigerant piping (Case of All Outside Air)

⚠ CAUTION

- **Length and height of refrigerant piping keep the limitation blow.**
  If installed in out of the limitation, there is a possibility that heat-exchanger in Outdoor unit will burst and leak a refrigerant gas, for freezing heat-exchanger by shortage of defrosting capacity.



◆ **System restrictions**

Max. No. of combined Outdoor units	**1 unit**
Max. capacity of combined Outdoor units	**14 ton**
Max. No. of combined Indoor units	**3 units**
Max. capacity of combined Indoor units	Refer to "■ The combination of Indoor units"

◆ Cautions for installation

- Y-shaped branching joint must be installed horizontally.

◆ **Allowable length and height difference of refrigerant piping**

			Allowable value		Pipes
			ft	m	
Pipe length	Total extension of pipe (Liquid pipe)	Actual length	**984**	**300**	**L1 + L2 + a + b + c**
	Farthest piping length **L** (*1)	Equivalent length	**492**	**150**	**L1 + c**
		Actual length	**427**	**130**	
	Main piping length	Equivalent length	**Max. 394 (Min. 164)**	**Max. 120 (Min. 50)**	**L1**
		Actual length	**Max. 328 (Min. 164)**	**Max. 100 (Min. 50)**	
	Farthest equivalent piping length from the first branching section **Li** (*1)	Equivalent length	**98**	**30**	**c**
	Farthest equivalent piping length between Outdoor units **LO**	Equivalent length	—	—	—
	Maximum equivalent piping length of Outdoor unit connecting pipe	Equivalent length	—	—	—
	Maximum actual length of pipes connected to Indoor units	Actual length	**98**	**30**	**a, b, c**
	Maximum equivalent length between branching sections	Equivalent length	**98**	**30**	**L2**
Height difference	Height between Outdoor and Indoor units **H1**	Upper Outdoor units	**131**	**40**	—
		Lower Outdoor units	**10**	**3**	—
	Height between Indoor units **H2**		**2**	**0.5**	—
	Height between Outdoor units **H3**		—	—	—

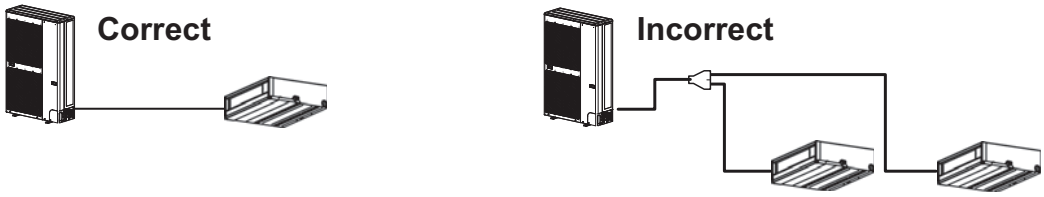
(*1): Farthest Indoor unit from the first branching section is the Indoor unit (c).

◆ Please refer to "Outdoor Unit's Installation Manual" except the above contents.

6-2. Case of MCY model

■ Case of All Outside Air connection to Side Blow SMMS-e

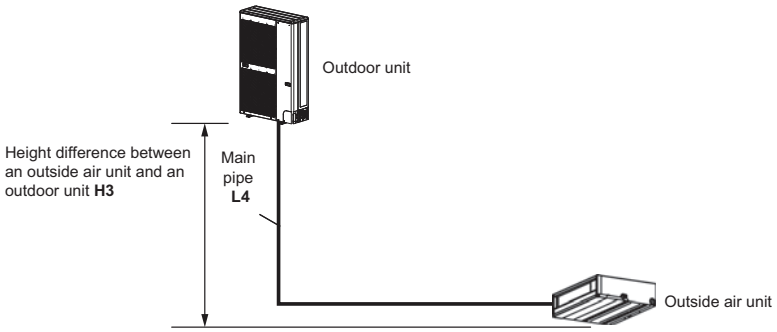
- The combination which can connect Outside Air Unit is only the 1:1 combination of MCY-MAP0487HS-UL and MMD-AP0481HF2UL.
  Other combination is not permitted.



■ Allowable length/height difference of refrigerant piping (Case of All Outside Air)

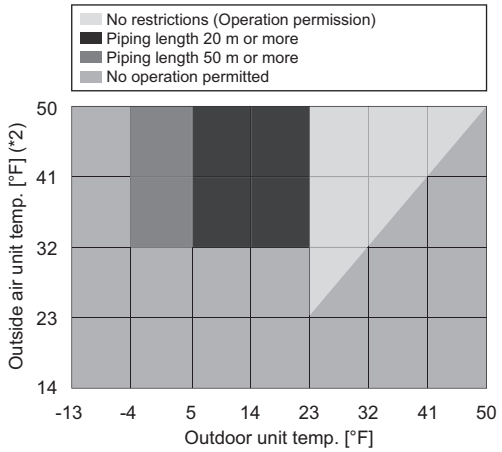
⚠ CAUTION

- **Length and height of refrigerant piping keep the limitation blow.**
  If installed in out of the limitation, there is a possibility that heat-exchanger in Outdoor unit will burst and leak a refrigerant gas, for freezing heat-exchanger by shortage of defrosting capacity.



				Allowable value (ft)	Allowable value (m)	Pipes
Piping Length	Total extension of pipe (liquid pipe, real length)			328	100	L4
	Furthest piping length (=Max.length of main pipe)	Real length	Max	328	100	L4
			Min (*1)	164/66	50/20	
		Equivalent length		410	125	
	Max equivalent length of furthest piping from 1st branching Li			–	–	
	Max real length of indoor unit connecting pipe			–	–	
Height Difference	Height between indoor and outdoor units H3	Upper outdoor unit		164	50	
		Lower outdoor unit		9	3	
	Height between indoor units H2			–	–	

(*1) The minimum piping length should set to the following figure by outside air temperature.



(*2) Refer to [■Use conditions] for Outside air unit temperature.

◆Please refer to “Outdoor Unit’s Installation Manual” except the above contents.

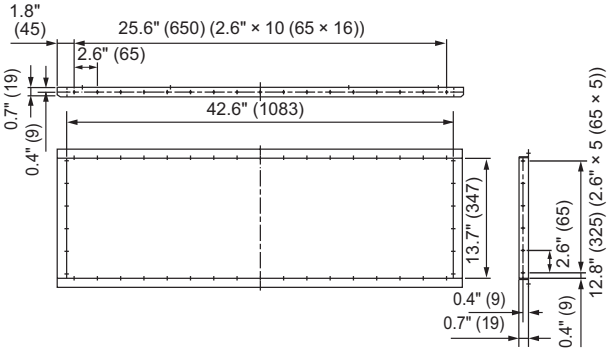
6-3. Installation

■ Connecting flange

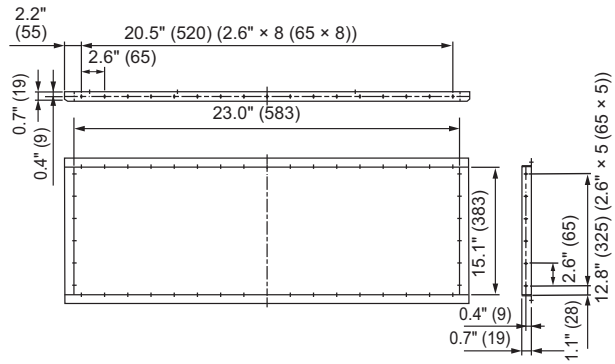
Refer to size in the figure attached to the main unit.

<MMD-AP048 type>

<Air supply port connecting flange>

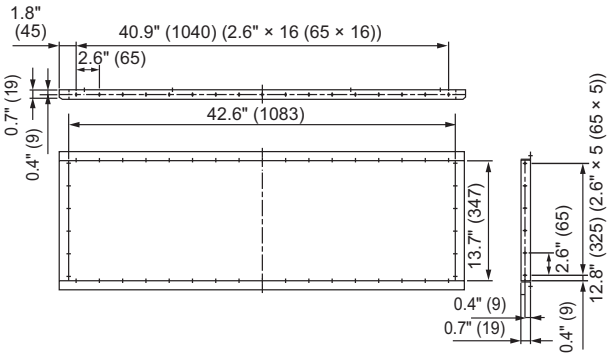


<Air intake port connecting flange>

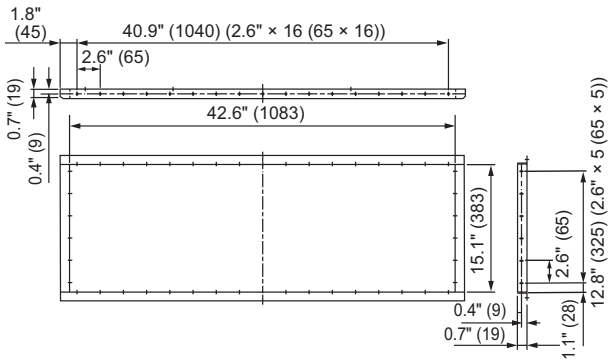


<MMD-AP072 type, AP096 type>

<Air supply port connecting flange>



<Air intake port connecting flange>

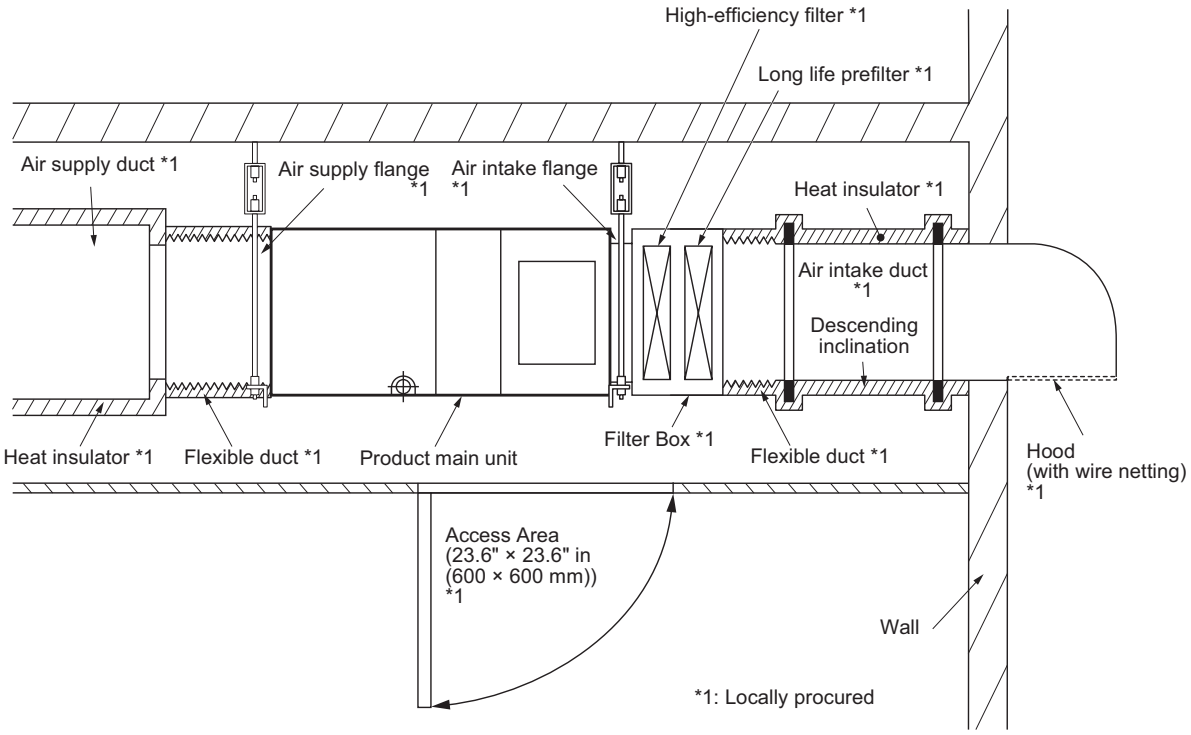


Unit: in (mm)

REQUIREMENT

If the air conditioner unit and the canvas joint are connected with the rivets, the fan and the refrigerating cycle cannot be checked.
Be sure to use the flange as shown in the above and tighten it by the bolts.
(Fixing bolts 0.2" x 0.5" in (6 x 12 mm), locally procured)

<Example of construction>



1 Air intake duct

- Connect the air intake duct (Locally procured) to the inlet flange.
  Wrap aluminum tape around connecting part between the air intake port flange and duct, or provide sealer so that air does not leak.
- For the outside air intake port, attach a hood so that outside air is sucked from lower side.
  And attach wire netting, etc. to the air intake of the hood.
- Set the air intake duct at descending inclination so that water can be drained even if rainwater enters in.
- Wrap the outside of the intake duct with heat insulator because it intakes cold air while heating.

2 Air supply duct

Connect the air supply duct (Locally procured) to the Air supply flange.
Wrap aluminum tape around connecting part of the air supply port flange and duct or apply packing so that air does not leak.

Selection of installation place

Avoid installing in the following places.

Select a location for the indoor unit where the cool or warm air will circulate evenly.
Avoid installation in the following kinds of locations.

- Locations where inside the ceiling is used as route for outside air.
- Saline area (coastal area)
- Locations with acidic or alkaline atmospheres (such as areas with hot springs, factories where chemicals or pharmaceuticals are made and places where the exhaust air from combustion appliances will be sucked into the unit).
  Doing so may cause the heat exchanger (its aluminum fins and copper pipes) and other parts to become corroded.
- Locations with atmospheres with mist of cutting oil or other types of machine oil.
  Doing so may cause the heat exchanger to become corroded, mists caused by the blockage of the heat exchanger to be generated, the plastic parts to be damaged, the heat insulators to peel off, and other such problems to result.
- Places where iron or other metal dust is present. If iron or other metal dust adheres to or collects on the interior of the air conditioner, it may spontaneously combust and start a fire.
- Locations where vapors from food oils are formed (such as kitchens where food oils are used).
  Blocked filters may cause the air conditioner's performance to deteriorate, condensation to form, the plastic parts to be damaged, and other such problems to result.
- Locations near obstructions such as ventilation openings or lighting fixtures where the flow of the blown air will be disrupted (a disruption of the air flow may cause the air conditioner's performance to deteriorate or the unit to shut down).
- Locations where an in-house power generator is used for the power supply.
  The power line frequency and voltage may fluctuate, and the air conditioner may not work properly as a result.
- On truck cranes, ships or other moving conveyances.
- The air conditioner must not be used for special applications (such as for storing food, plants, precision instruments or art works).
  (The quality of the items stored may be degraded.)
- Locations where high frequencies are generated (by inverter equipment, in-house power generators, medical equipment or communication equipment).
  (Malfunctioning or control trouble in the air conditioner or noise may adversely affect the equipment's operation.)
- Locations where there is anything under the unit installed that would be compromised by wetness.
  (If the drain has become blocked or when the humidity is over 80%, condensation from the indoor unit will drip, possibly causing damage to anything underneath.)
- Locations where organic solvents are being used.
- The air conditioner cannot be used for liquefied carbonic acid cooling or in chemical plants.
- Location near doors or windows where the air conditioner may come into contact with high-temperature, high-humidity outdoor air.
  (Condensation may occur as a result.)
- Locations where special sprays are used frequently.

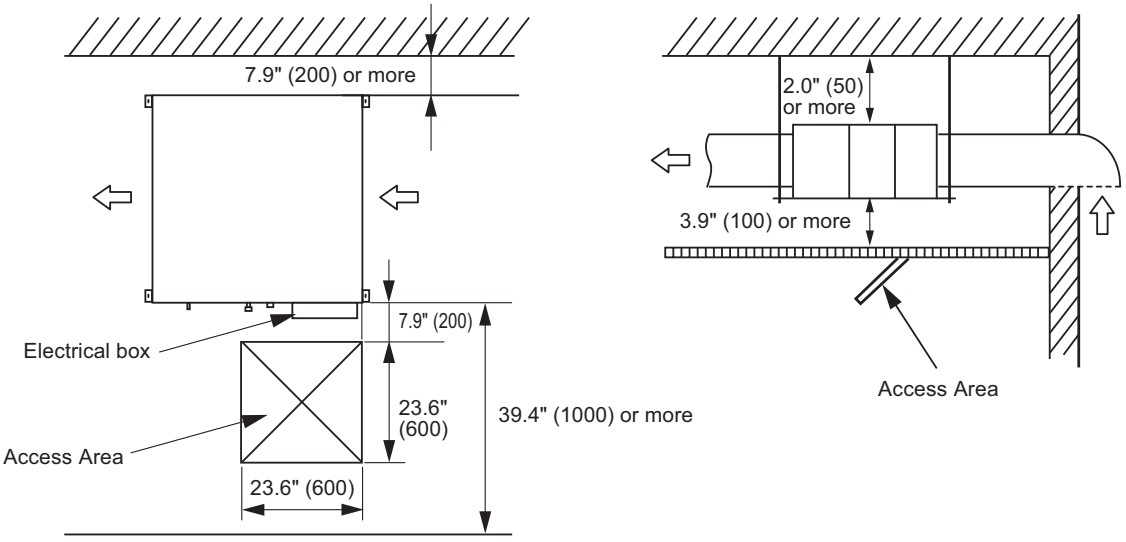
■ Installation space

Keep the space necessary for installation and service.

REQUIREMENT

The Access Area should be 23.6" × 23.6" in (600 × 600 mm).

Unit: in (mm)



■ Installation under atmosphere of the high humidity

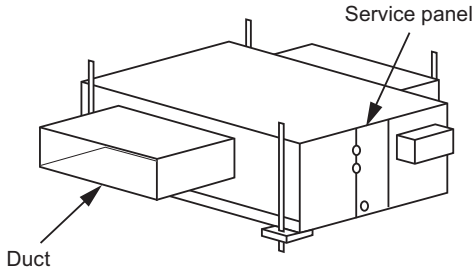
Although it has been confirmed that no trouble occurs on the unit, there is a fear of drip of the water if operation under high humidity condition continues.
In some cases including the rainy season, especially inside of the ceiling may become high-humidity atmosphere (dew-point temperature: 86 °F (30 °C) (humidity: 80%) or higher).

1 **Installation to inside of the ceiling with tiles on the roof.**

2 **Installation to inside of the ceiling with slated roof.**

3 **Installation to inside of the ceiling with kitchen.**

- In the above cases, additionally attach the heat insulator (Glass wool, etc.) to all positions of the air conditioner, which come to contact with the high-humidity atmosphere.
  In this case, arrange the side plate (Service panel) so that it is easily removed.
- Apply also heat insulating a sufficient thickness 0.39" in (10 mm) or more to the duct and connecting part of the duct.



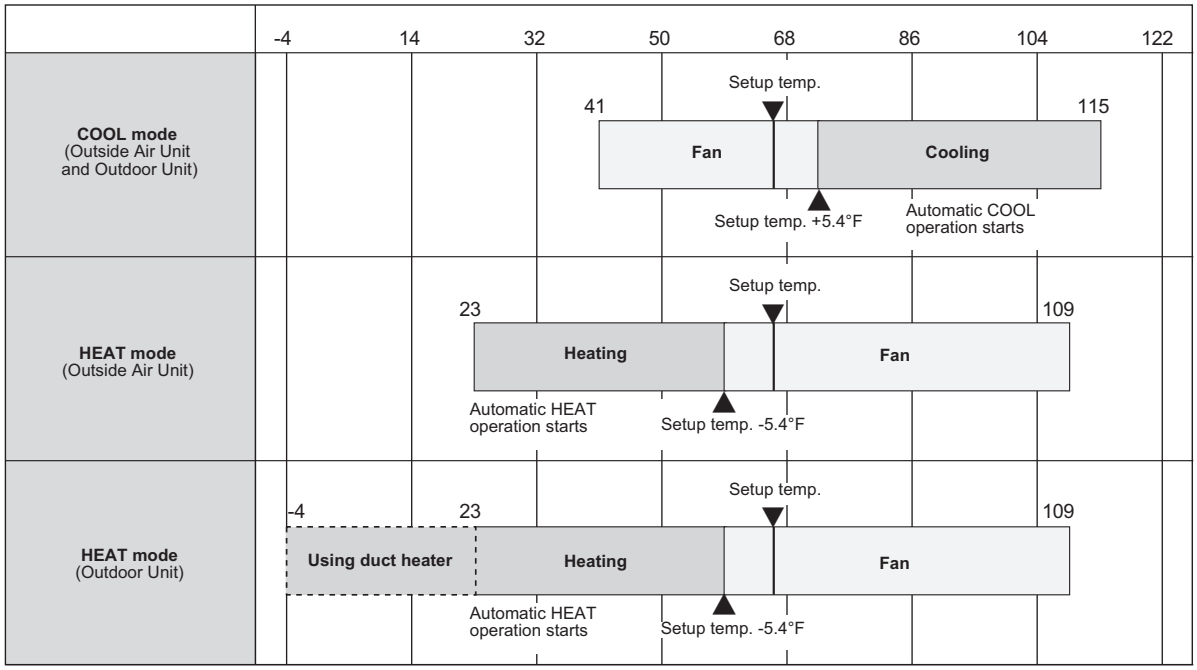
6-4. Basic operation

■ Use conditions

- In “COOL” mode, if temperature of the outside air is under the setup temp. +5.4°F, FAN status is automatically made. When temperature of the outside air is under 66°F, FAN status is also made regardless of the setup temperature.
- In “HEAT” mode, if temperature of the outside air is over the setup temp. -5.4°F, FAN status is automatically made. When temperature of the outside air is over 59°F, FAN status is also made regardless of the setup temperature.

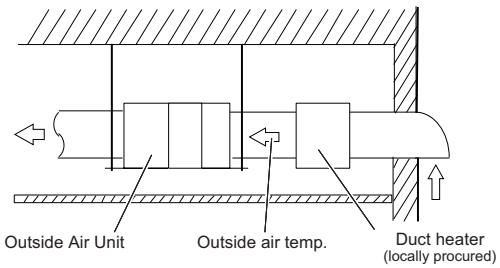
● Case to use in SMMS-e “MMY-MAP___6HT_P-UL” and Side blow SMMS-e “MCY-MHP___7HS-UL”

Outdoor Air Temperature °F

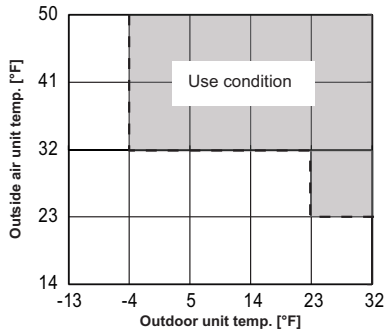


REQUIREMENT

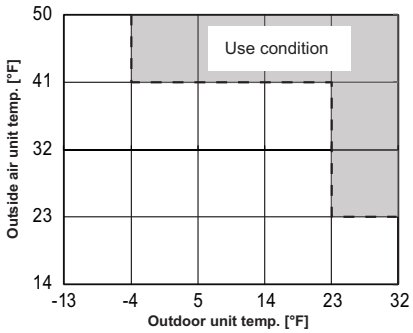
- In “COOL” or “FAN” mode, if temperature of the outside air is under 41°F, the operation stop automatically in order to protect the equipment.
  In this case, continue the operation by selecting “HEAT” mode.
- In “HEAT” mode, if temperature of the outside air is under 23°F, the operation stops automatically in order to protect the equipment.
  When operating the air conditioner with the outside air temp. under 23°F (minimum -4°F),
  set temp. of the outside air to be taken in to 32 (*1)°F or upper using a duct heater (locally procured).
  For details, consult the dealer which you purchased the air conditioner.
  (*1) When 096type system with 1 indoor unit, be taken in to 41°F or upper using a duct heater.



(i) Case of standard system



(ii) Case of 096type system with 1 indoor unit



- In “HEAT” mode, if temperature is out of range in the Use condition, the fan of the Outside Air Unit intermittently operate. So take care not to overheat a duct heater, when use a duct heater.

◆ Please refer to “Outside Air Unit’s Owner’s Manual” except the above contents.

Applicable controls (Case of All Outside Air with SMMS-e “MMY-MAP__HT_P-UL”)

REQUIREMENT

When the air conditioner is used for the first time, it will take some moments after the power has been turned on before the remote control becomes available for operations: This is normal and is not indicative of trouble.

- Concerning the automatic addresses (The automatic addresses are set up by performing operations on the outdoor interface circuit board.)
  While the automatic addresses are being set up, no remote control operations can be performed. Setup takes up to 10 minutes (usually about 5 minutes).
- When the power is turned on after automatic address setup
  It takes up to 10 minutes (usually about 3 minutes) for the Outdoor unit to start operating after the power has been turned on.

Before the air conditioner was shipped from the factory, all units are set to [STANDARD] (factory default). If necessary, change the Indoor unit settings.
The settings are changed by operating the wired remote control.

* The settings cannot be changed using only a wireless remote control, simple remote control or group control remote control by itself so install a wired remote control separately as well.

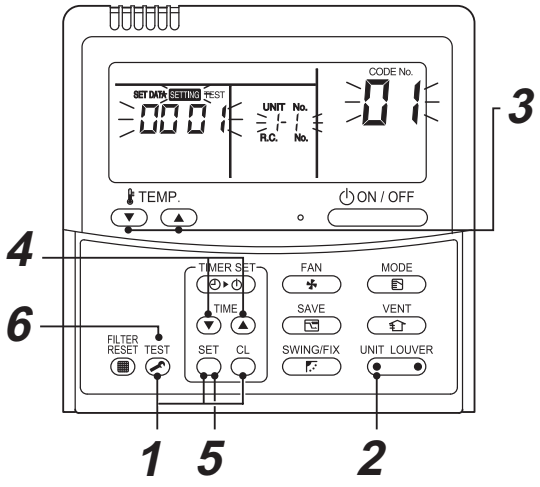
■ Basic procedure for changing settings

Change the settings while the air conditioner is not working. (**Stop the air conditioner before making settings.**)

⚠ CAUTION

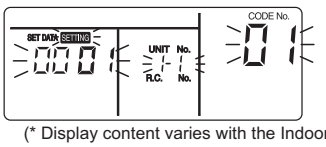
Set only the CODE No. shown in the following table: Do NOT set any other CODE No. If a CODE No. not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.

Case of RBC-AMT32UL



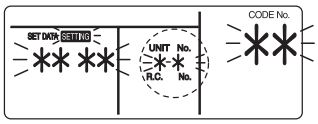
1 **Push and hold SET + CL + TEST buttons simultaneously for at least 4 seconds. After a while, the display flashes as shown in the figure. Confirm that the CODE No. is [01].**

- If the CODE No. is not [01], push TEST button to clear the display content, and repeat the procedure from the beginning. (No operation of the remote control is accepted for a while after TEST button is pushed.)
  (While air conditioners are operated under the group control, “ALL” is displayed first. When UNIT LOUVER is pushed, the Indoor unit number displayed following “ALL” is the header unit.)



(* Display content varies with the Indoor unit model.)

2 **Each time UNIT LOUVER button is pushed, Indoor unit numbers in the control group change cyclically. Select the Indoor unit to change settings for.**
The fan of the selected unit runs and the louvers start swinging. The Indoor unit for change settings can be confirmed.



3 **Specify CODE No. [✳✳] with “TEMP.” ▼ / ▲ buttons.**

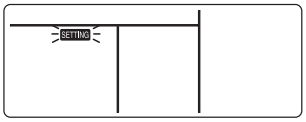
4 **Select SET DATA [✳✳✳✳] with “TIME” ▼ / ▲ buttons.**

5 **Push SET button. When the display changes from flashing to lit, the setup is completed.**

- To change settings of another Indoor unit, repeat from Procedure ***2***.
- To change other settings of the selected Indoor unit, repeat from Procedure ***3***.

Use SET button to clear the settings. To make settings after SET button was pushed, repeat from Procedure ***2***.

6 **When settings have been completed, push TEST button to determine the settings.**
When TEST button is pushed, SETTING flashes and then the display content disappears and the air conditioner enters the normal stop mode.
(While SETTING is flashing, no operation of the remote control is accepted.)



■ All Outside Air Unit connection setting

When only Outside Air Units connected to Outdoor unit, set the all Outside Air Unit connection setting at Outside Air Units.

Firstly, follow to the basic operation procedure
(1→2→3→4→5)

- The CODE No. in Procedure ***3*** is [**C8**].
- The [SET DATA] in Procedure ***4*** is [**0000**].

Secondary, follow to the basic operation procedure
(3→4→5)

- The CODE No. in Procedure ***3*** is [**AE**].
- The [SET DATA] in Procedure ***4*** is [**0016**].

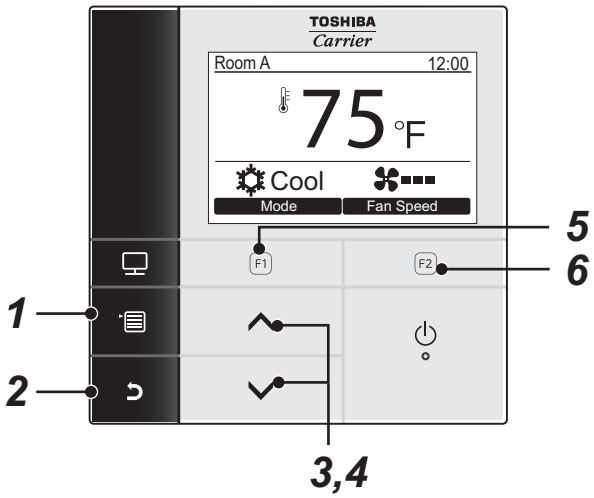
Finally, follow to the basic operation procedure
(3→4→5→6)

- The CODE No. in Procedure ***3*** is [**AF**].
- The [SET DATA] in Procedure ***4*** is [**0010**].

CODE No.	SET DATA
C8	0000
AE	0016
AF	0010

◆ Please refer to “Outside Air Unit’s Installation Manual” except the above contents.

Case of RBC-AMT54E-UL



1 **[MENU] button**
Displays the menu screen.

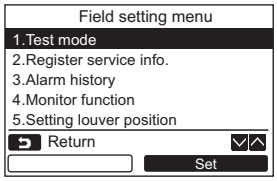
2 **[CANCEL] button**
Functions as indicated on the screen, such as returning to the previous menu screen.

3 **[∧] button**
During normal operation: adjusts the temperature.
On the menu screen: selects a menu item.

4 **[∨] button**
During normal operation: adjusts the temperature.
On the menu screen: selects a menu item.

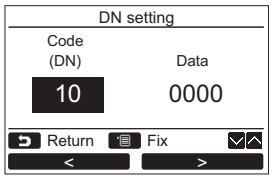
5 **[F1] F1] button**
Varies its function according to the setting screen.

6 **[F2] F2] button**
Varies its function according to the setting screen.

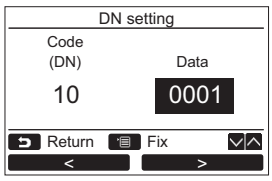


1 **Push the [MENU] button to display the menu screen.**

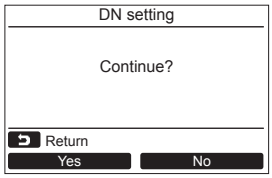
2 **Push and hold the [MENU] button and the [∨] button at the same time to display the "Field setting menu".**
→ Push and hold the buttons for more than 4 seconds.



3 **Push the [∧] / [∨] button to select "7. DN setting" on the "Field setting menu" screen, then push the "Set" [F2] F2] button.**
→ The fan and louver of the indoor unit operate. When the group control is used, the fan and louver of the selected indoor unit operate.
→ Move the cursor to select "Code (DN)" with the "<" [F1] F1] button, then set "Code (DN)" with the [∧] / [∨] button.
→ Move the cursor to select "Data" with the ">" [F2] F2] button, then set "Data" with the [∧] / [∨] button.



4 **Refer to the Installation Manual supplied with the indoor unit or service manual for details about the Code (DN) and Data.**



5 **Push the [MENU] button to set the other Code (DN) and Data. After "Continue?" is displayed on the screen, push the "Yes" [F1] F1] button.**

6 **Push the "No" [F2] F2] button to finish the setting operation. "⧖ Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.**
→ Pushing the "No" [F2] F2] button displays the unit selection screen when the group control is used. Push the [CANCEL] button on the unit selection screen to finish the setting operation. "⧖ Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.

■ All Outside Air Unit connection setting

When only Outside Air Units connected to Outdoor unit, set the all Outside Air Unit connection setting at Outside Air Units.
Firstly, follow to the basic operation procedure

(1→2→3→5)

- For the CODE No. in Procedure ***3*** is **[C8]**.
- For the [SET DATA] in Procedure ***3*** is **[0000]**.

Secondary, follow to the basic operation procedure

(3→5)

- For the CODE No. in Procedure ***3*** is **[AE]**.
- For the [SET DATA] in Procedure ***3*** is **[0016]**.

Finally, follow to the basic operation procedure

(3→6)

- For the CODE No. in Procedure ***3*** is **[AF]**.
- For the [SET DATA] in Procedure ***3*** is **[0010]**.

CODE No.	SET DATA
C8	0000
AE	0016
AF	0010

Applicable controls (Case of All Outside Air with Side blow SMMS-e "MCY-MAP__MHT_7HS-UL")

REQUIREMENT

When the air conditioner is used for the first time, it will take some moments after the power has been turned on before the remote control becomes available for operations: This is normal and is not indicative of trouble.

- Concerning the automatic addresses (The automatic addresses are set up by performing operations on the outdoor interface circuit board.)
  While the automatic addresses are being set up, no remote control operations can be performed. Setup takes up to 10 minutes (usually about 5 minutes).
- When the power is turned on after automatic address setup
  It takes up to 10 minutes (usually about 3 minutes) for the Outdoor unit to start operating after the power has been turned on.

Before the air conditioner was shipped from the factory, all units are set to [STANDARD] (factory default). If necessary, change the Indoor unit settings.
The settings are changed by operating the wired remote control.

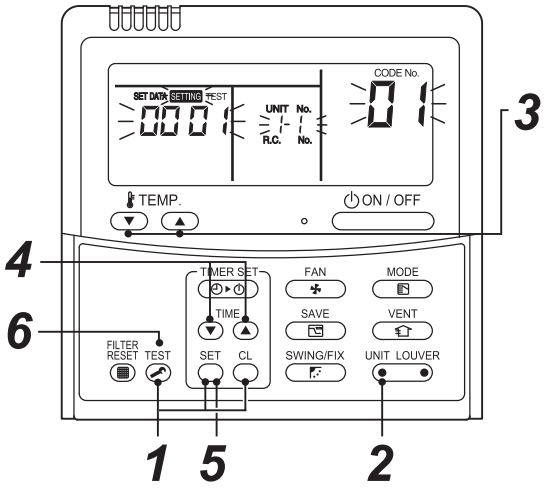
* The settings cannot be changed using only a wireless remote control, simple remote control or group control remote control by itself so install a wired remote control separately as well.

■ Basic procedure for changing settings

Change the settings while the air conditioner is not working. (**Stop the air conditioner before making settings.**)

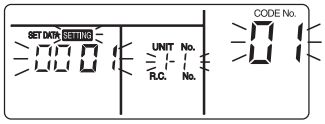
⚠ CAUTION

Set only the CODE No. shown in the following table: Do NOT set any other CODE No. If a CODE No. not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.



1 **Push and hold SET + CL + TEST buttons simultaneously for at least 4 seconds. After a while, the display flashes as shown in the figure. Confirm that the CODE No. is [01].**

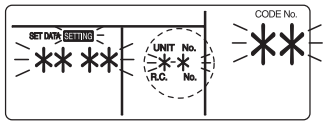
- If the CODE No. is not [01], push TEST button to clear the display content, and repeat the procedure from the beginning. (No operation of the remote control is accepted for a while after TEST button is pushed.)
  (While air conditioners are operated under the group control, !ALL" is displayed first. When UNIT LOUVER is pushed, the Indoor unit number displayed following !ALL" is the header unit.)



(* Display content varies with the Indoor unit model.)

2 **Each time UNIT LOUVER button is pushed, Indoor unit numbers in the control group change cyclically. Select the Indoor unit to change settings for.**

The fan of the selected unit runs and the louvers start swinging. The Indoor unit for change settings can be confirmed.



3 **Specify CODE No. [✱✱] with "TEMP." ▼/▲ buttons.**

4 **Select SET DATA [✱✱✱✱] with "TIME" ▼/▲ buttons.**

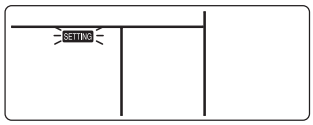
5 **Push SET button. When the display changes from flashing to lit, the setup is completed.**

- To change settings of another Indoor unit, repeat from Procedure **2**.
- To change other settings of the selected Indoor unit, repeat from Procedure **3**.

Use SET button to clear the settings. To make settings after SET button was pushed, repeat from Procedure **2**.

6 **When settings have been completed, push TEST button to determine the settings.**

When TEST button is pushed, SETTING flashes and then the display content disappears and the air conditioner enters the normal stop mode.
(While SETTING is flashing, no operation of the remote control is accepted.)



■ All Outside Air Unit connection setting

When Outside Air Unit connected to Outdoor unit, set the all Outside Air Unit connection setting at Outside Air Unit.
Set the data as follows according to basic operation procedure.

(1→2→3→4→5→6)

- The CODE No. in Procedure **3** is **[C8]**.
- The [SET DATA] in Procedure **4** is **[0000].**

CODE No.	SET DATA
C8	0000

■ Setting for Outside Air Unit's fan ON during defrost

If main piping length is less than 20 m and 50 m, Outside Air Unit must be set for fan ON during defrost operation.
Without fan ON setting, there is a possibility that heat-exchanger in Outdoor unit will burst and leak refrigerant gas, for freezing heat-exchanger by shortage of defrosting capacity.

■Outside Air unit setting

Set the data as follows according to basic operation procedure.

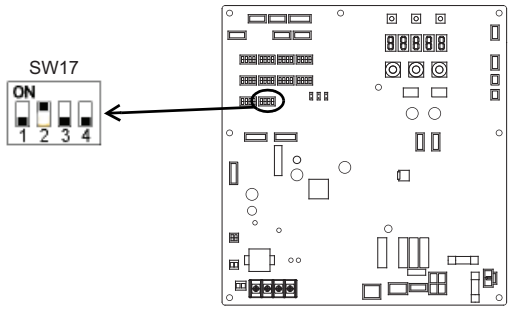
(1→2→3→4→5→6)

- The CODE No. in Procedure **3** is **[72]**.
- The [SET DATA] in Procedure **4** is **[0000]**.

■Outdoor unit setting

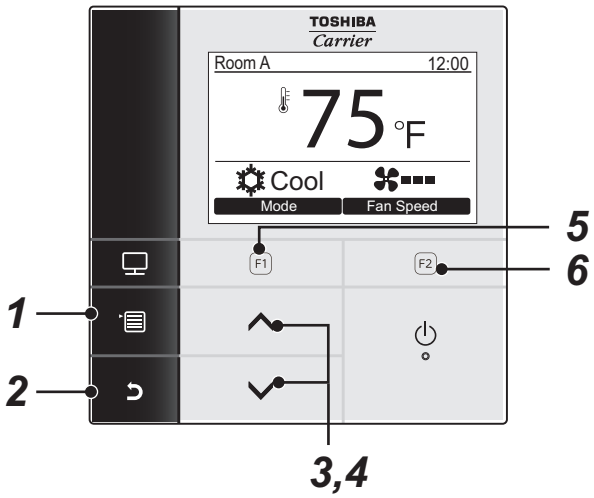
Set the SW17-Bit2 "ON" on the Interface P.C. board of the outdoor unit.

Interface P.C. board



◆ Please refer to "Outside Air Unit's Installation Manual" except the above contents.

Case of RBC-AMT54E-UL



1 **[MENU] button**
Displays the menu screen.

2 **[CANCEL] button**
Functions as indicated on the screen, such as returning to the previous menu screen.

3 **[∧] button**
During normal operation: adjusts the temperature.
On the menu screen: selects a menu item.

4 **[∨] button**
During normal operation: adjusts the temperature.
On the menu screen: selects a menu item.

5 **[F1] F1] button**
Varies its function according to the setting screen.

6 **[F2] F2] button**
Varies its function according to the setting screen.

■ Setting for Outside Air Unit's fan ON during defrost

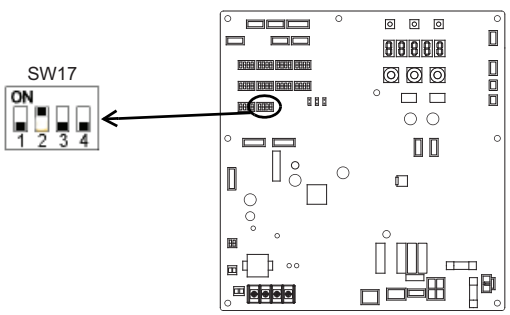
If main piping length is less than 20 m and 50 m, Outside Air Unit must be set for fan ON during defrost operation.
Without fan ON setting, there is a possibility that heat-exchanger in Outdoor unit will burst and leak refrigerant gas, for freezing heat-exchanger by shortage of defrosting capacity.
■Outside Air unit setting
Set the data as follows according to basic operation procedure.

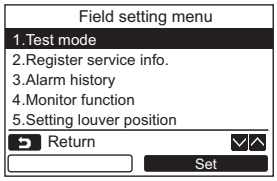
(1→2→3→5→6)

- The CODE No. in Procedure ***3*** is **[72]**.
- The [SET DATA] in Procedure ***3*** is **[0000]**.

■Outdoor unit setting
Set the SW17-Bit2 "ON" on the Interface P.C. board of the outdoor unit.

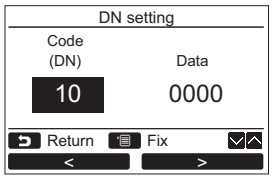
Interface P.C. board



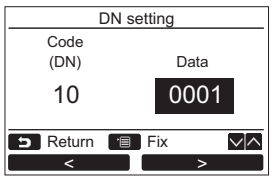


1 **Push the [MENU] button to display the menu screen.**

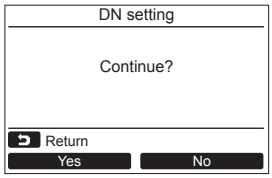
2 **Push and hold the [MENU] button and the [∨] button at the same time to display the "Field setting menu".**
→ Push and hold the buttons for more than 4 seconds.



3 **Push the [∧] / [∨] button to select "7. DN setting" on the "Field setting menu" screen, then push the "Set" [F2] F2] button.**
→ The fan and louver of the indoor unit operate. When the group control is used, the fan and louver of the selected indoor unit operate.
→ Move the cursor to select "Code (DN)" with the "<" [F1] F1] button, then set "Code (DN)" with the [∧] / [∨] button.
→ Move the cursor to select "Data" with the ">" [F2] F2] button, then set "Data" with the [∧] / [∨] button.



4 **Refer to the Installation Manual supplied with the indoor unit or service manual for details about the Code (DN) and Data.**



5 **Push the [MENU] button to set the other Code (DN) and Data. After "Continue?" is displayed on the screen, push the "Yes" [F1] F1] button.**

6 **Push the "No" [F2] F2] button to finish the setting operation. "⧖ Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.**
→ Pushing the "No" [F2] F2] button displays the unit selection screen when the group control is used. Push the [CANCEL] button on the unit selection screen to finish the setting operation. "⧖ Setting" appears on the screen for a while, then the screen returns to the "Field setting menu" screen.

■ All Outside Air Unit connection setting

When Outside Air Unit connected to Outdoor unit, set the all Outside Air Unit connection setting at Outside Air Unit.
Set the data as follows according to basic operation procedure.

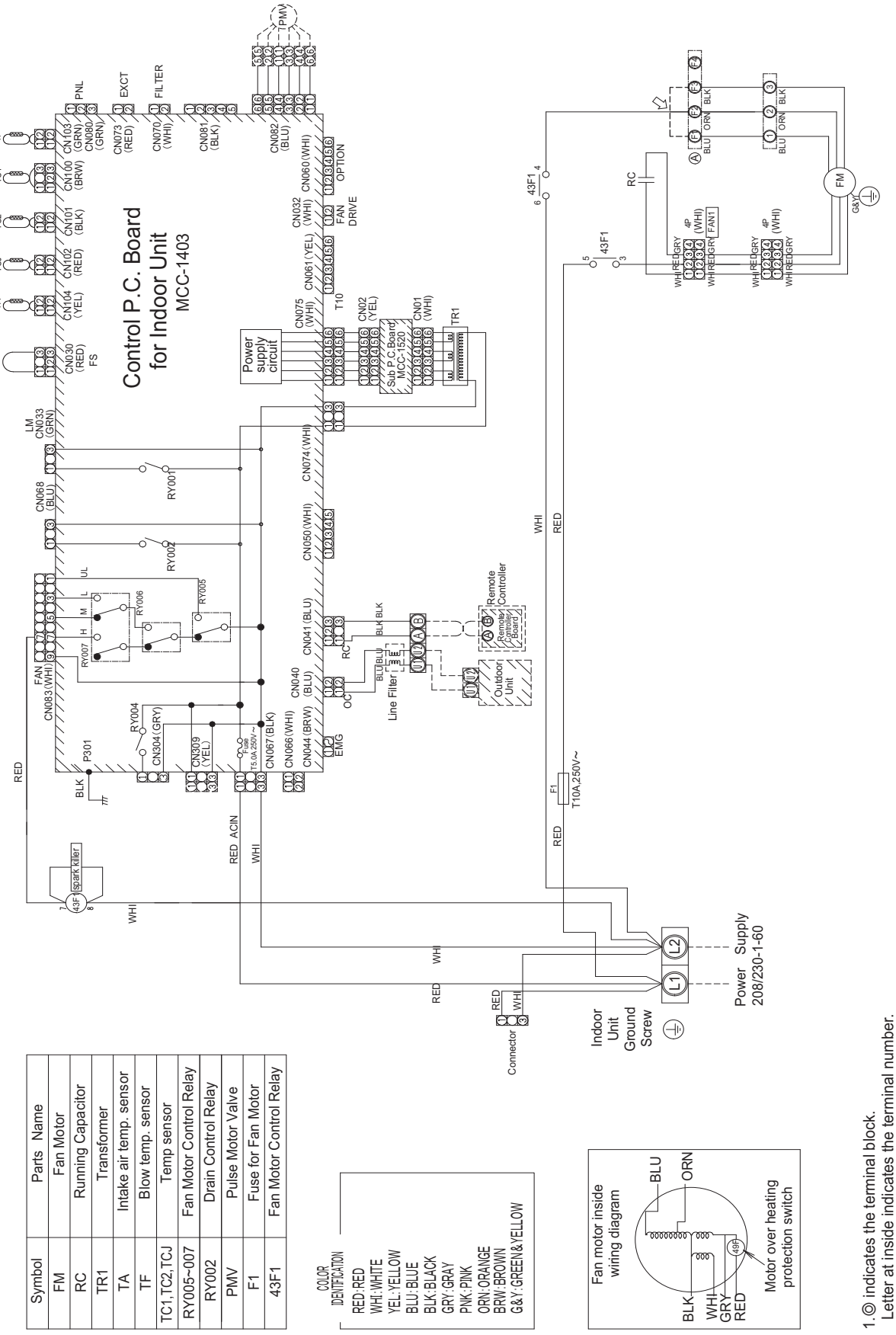
(1→2→3→5→6)

- The CODE No. in Procedure ***3*** is **[C8]**.
- The [SET DATA] in Procedure ***3*** is **[0000].**

CODE No.	SET DATA
C8	0000

7. Wiring diagram

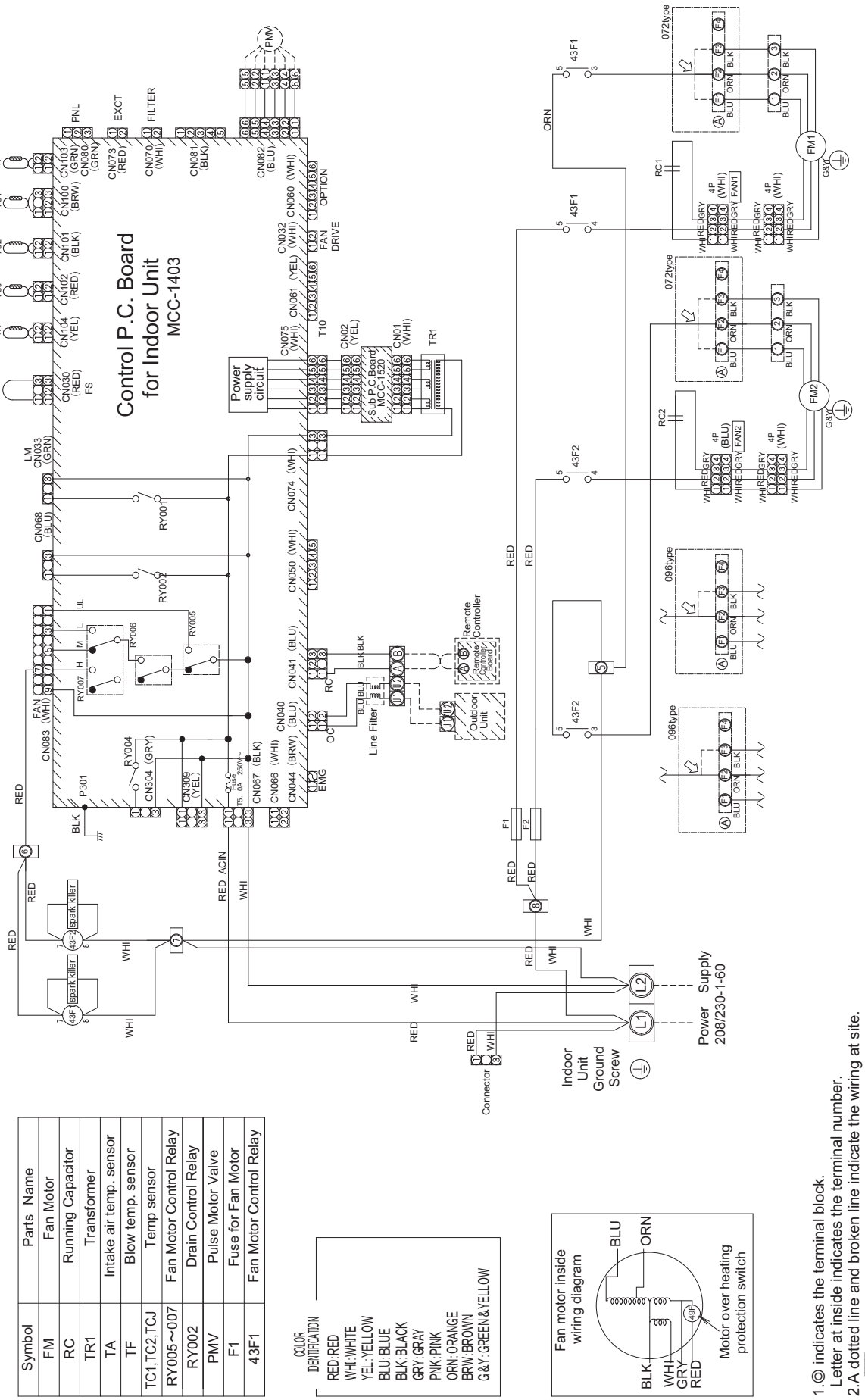
MMD-AP0481HF2UL



Symbol	Parts Name
FM	Fan Motor
RC	Running Capacitor
TR1	Transformer
TA	Intake air temp. sensor
TF	Blow temp. sensor
TC1,TC2,TCJ	Temp sensor
RY005~007	Fan Motor Control Relay
RY002	Drain Control Relay
PMV	Pulse Motor Valve
F1	Fuse for Fan Motor
43F1	Fan Motor Control Relay

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

MMD-AP0721HF2UL, MMD-AP0961HF2UL



Symbol	Parts Name
FM	Fan Motor
RC	Running Capacitor
TR1	Transformer
TA	Intake air temp. sensor
TF	Blow temp. sensor
TC1,TC2,TCJ	Temp sensor
RY005~007	Fan Motor Control Relay
RY002	Drain Control Relay
PMV	Pulse Motor Valve
F1	Fuse for Fan Motor
43F1	Fan Motor Control Relay

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

8. Electrical characteristics

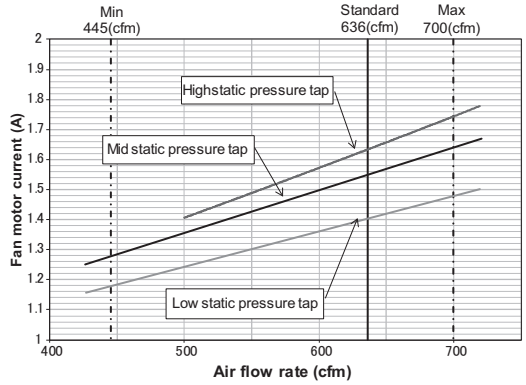
Model name	Nominal Voltage (V-Ph-Hz)	Voltage Range(V)		Power consumption	FLA	MCA	MOCP
		Min.	Max.	kW	A	A	A
MMD-AP0481HF2UL	208/230-1-60	187	253	0.16	1.84	2.30	15
MMD-AP0721HF2UL		187	253	0.16 x 2	3.43	4.29	15
MMD-AP0961HF2UL		187	253	0.16 x 2	3.80	4.76	15

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

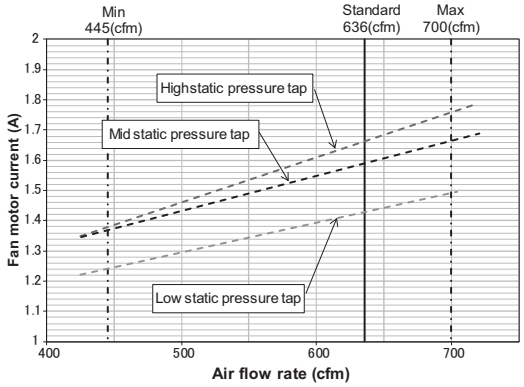
9. Fan characteristics

MMD-AP0481HF2UL

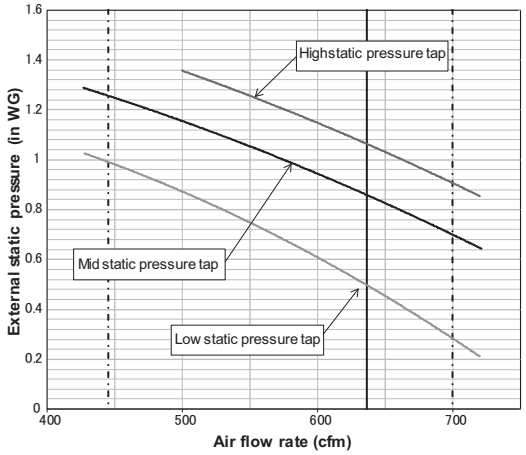
230V cfm - A



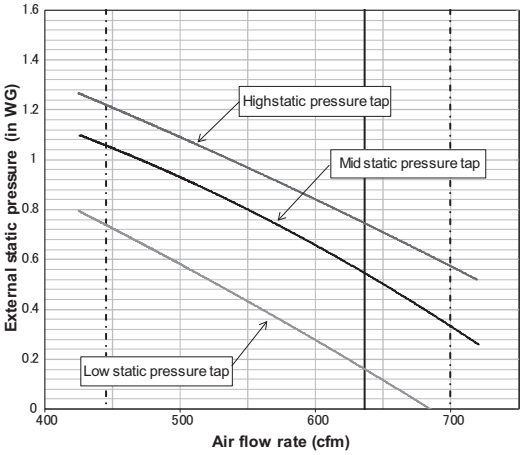
208V cfm - A



230V Fan characteristics

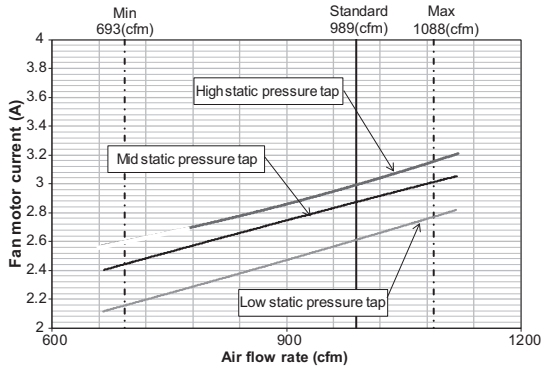


208V Fan characteristics

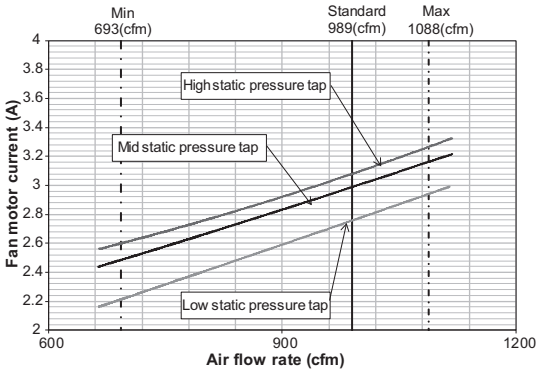


MMD-AP0721HF2UL

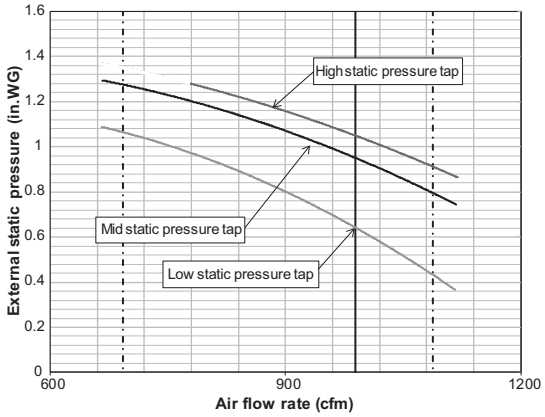
230V cfm - A



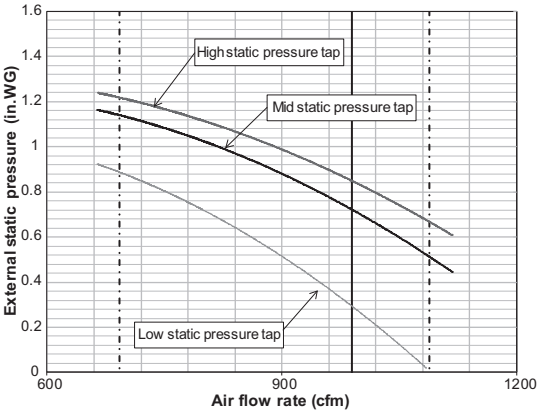
208V cfm - A



230V Fan characteristics

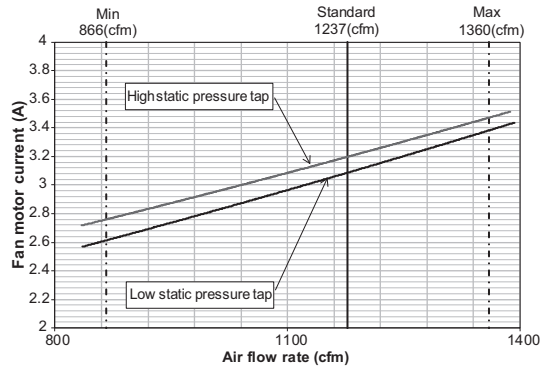


208V Fan characteristics

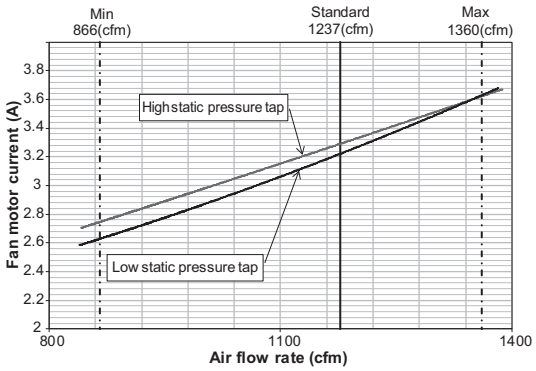


MMD-AP0961HF2UL

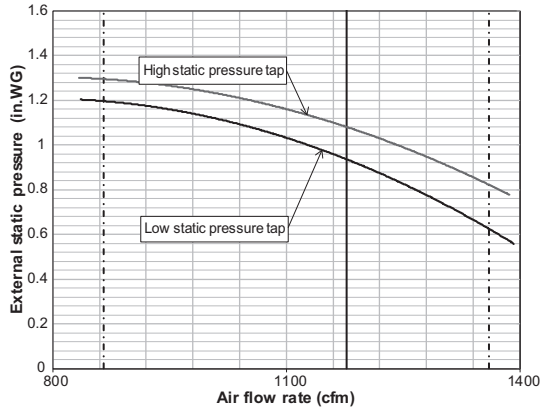
230V cfm - A



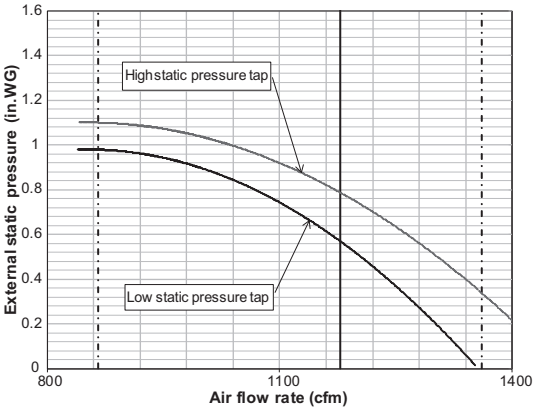
208V cfm - A



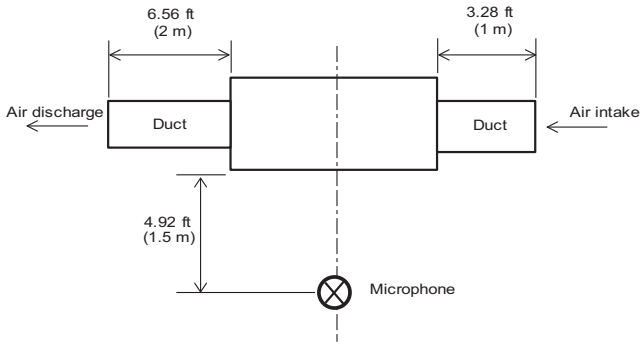
230V Fan characteristics



208V Fan characteristics



10. Sound data

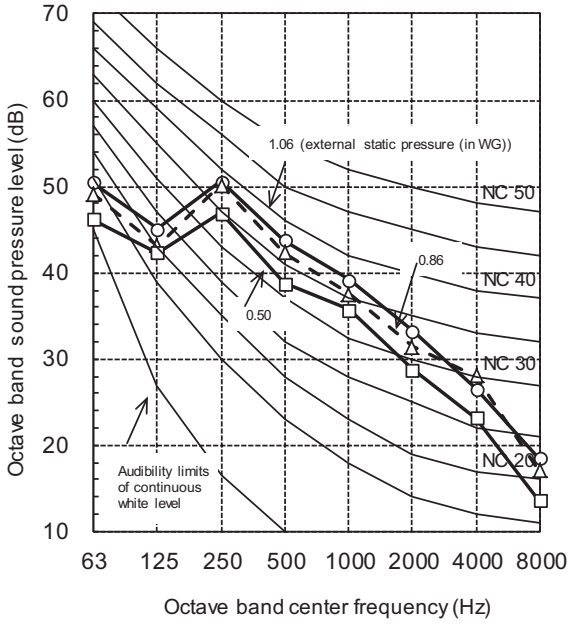


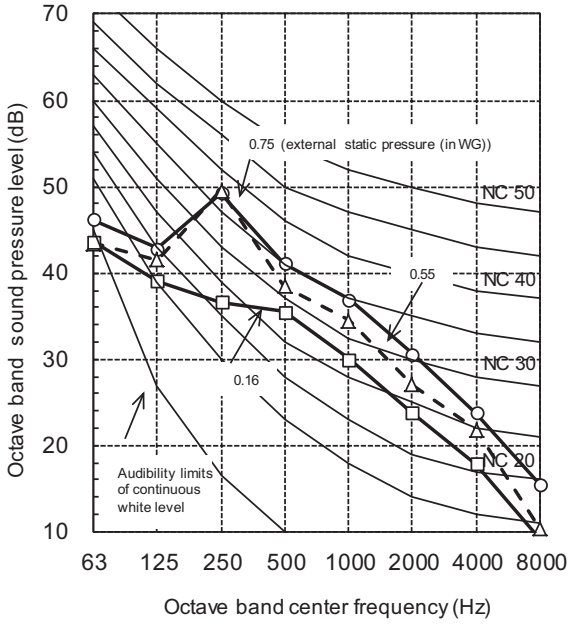
MMD-AP0481HF2UL (230 V)

Fan tap	H	M	L
External static pressure	1.06 (in WG)	0.86 (in WG)	0.50 (in WG)
Sound pressure level (dB(A))	46	45	42

MMD-AP0481HF2UL (208 V)

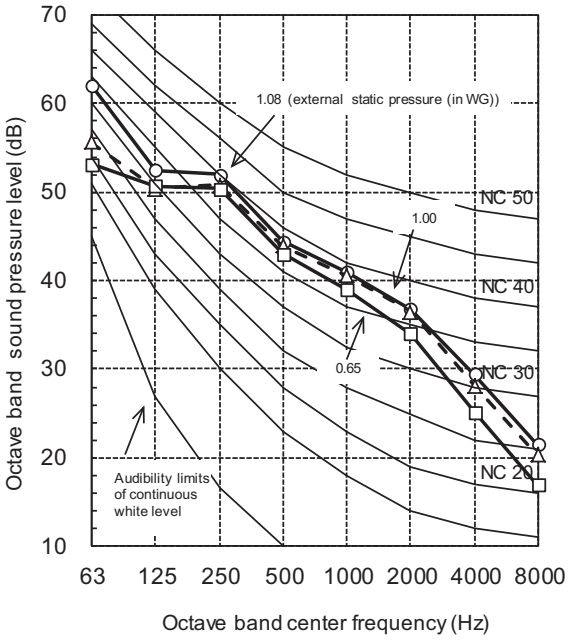
Fan tap	H	M	L
External static pressure	0.75 (in WG)	0.55 (in WG)	0.16 (in WG)
Sound pressure level (dB(A))	44	43	36





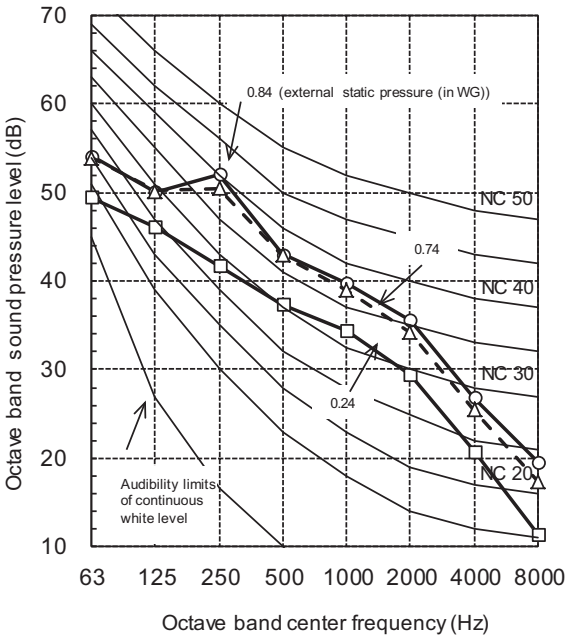
MMD-AP0721HF2UL (230 V)

Fan tap	H	M	L
External static pressure	1.08 (in WG)	1.00 (in WG)	0.65 (in WG)
Sound pressure level (dB(A))	48	47	46



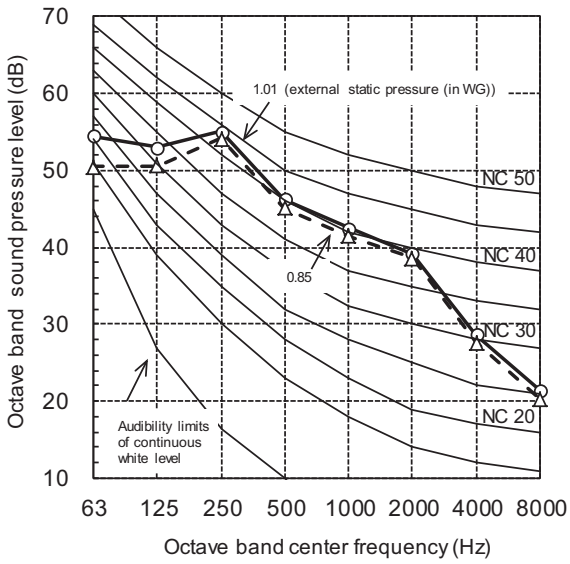
MMD-AP0721HF2UL (208 V)

Fan tap	H	M	L
External static pressure	0.84 (in WG)	0.74 (in WG)	0.24 (in WG)
Sound pressure level (dB(A))	47	46	40



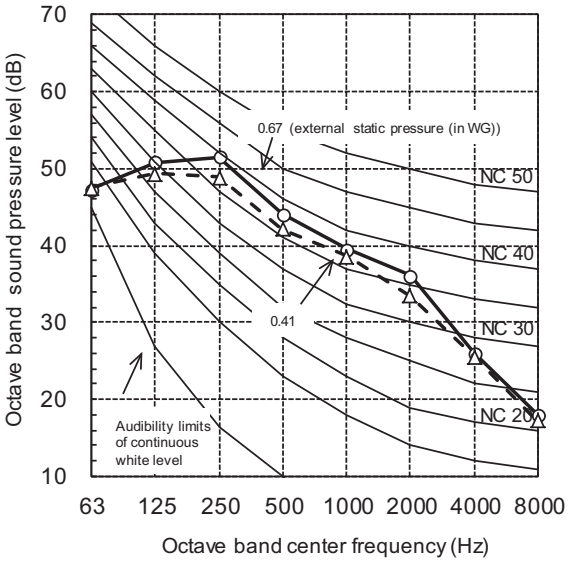
MMD-AP0961HF2UL (230 V)

Fan tap	H	L
External static pressure	1.01 (in WG)	0.85 (in WG)
Sound pressure level (dB(A))	50	49



MMD-AP0961HF2UL (208 V)

Fan tap	H	L
External static pressure	0.67 (in WG)	0.41 (in WG)
Sound pressure level (dB(A))	47	45



Outside Air Unit Type Engineering Data Book

Model name:

MMD-AP___1HF2UL

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